Enrollment Plan

	Number of Students											
Grade Level Year 1		Year 2		Year 3		Year 4		Year 5		Capacity		
	20	17	201	18	20:	19	202	20	2021		2022	
Brick & Mortar/ Blended vs. Virtual	B&M/ Blended	Virtual	B&M/ Blended	Virtual	B&M/ Blended	Virtual	B&M/ Blended	Virtual	B&M/ Blended	Virtual	B&M/ Blended	Virtual
K	20		30		35		35		35		35	
1	20		25		35		35		35		35	
2	20		25		30		35		35		35	
3	20		25		30		35		35		35	
4	20		25		30		35		35		35	
5	20		25		30		30		35		35	
6	20		25		30		30		35		35	
7	20		25		30		30		35		35	
8	20		25		30		30		35		35	
9												
10												
11												
12												
Subtotals												
Totals	180		230		280		295		315		315	

2010 Census Population of Kapolei, HI

Analyze the 2010 Kapolei, Hawaii population by race, age, gender and Latino/Hispanic origin etc. <u>CensusViewer</u> delivers detailed demographic statistics from the 2010 Census and other sources.

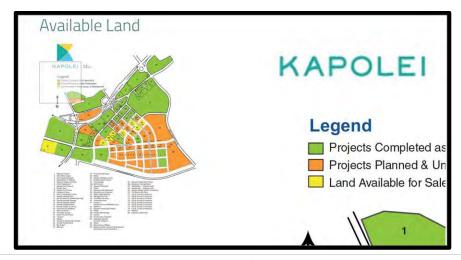
The idea behind CensusViewer's innovative solution is to use a familiar online mapping environment in combination with Moonshadow's cutting-edge database technology, to provide a blazing-fast and intuitive platform for accessing and analyzing the data.

Click on any map link to see why CensusViewer sets a new standard for ease of use in demographic analysis of population statistics and interactive census data mapping.



CensusViewer maps, data and statistics pages for all states, counties and cities.

Kapolei, Hawaii - Overview	2010 Census		
	Counts	Percentages	
Total Population	15,186	100.00%	
Population by Race			
American Indian and Alaska native alone	23	0.15%	
Asian alone	5,222	34.39%	
Black or African American alone	275	1.81%	
Native Hawaiian and Other Pacific native alone	2,220	14.62%	
Some other race alone	153	1.01%	
Two or more races	5,324	35.06%	
White alone	1,969	12.97%	
Population by Hispanic or Latino Origin (of any race)			
Persons Not of Hispanic or Latino Origin	13,478	88.75%	
Persons of Hispanic or Latino Origin	1,708	11.25%	
Population by Gender			
Female	7,634	50.27%	
Male	7,552	49.73%	
Population by Age			
Persons 0 to 4 years	1,211	7.97%	
Persons 5 to 17 years	3,523	23.20%	
Persons 18 to 64 years	9,484	62.45%	
Persons 65 years and over	968	6.37%	



2014 Kapolei Census

NOTE: This version of QuickFacts will no longer be updated with new data. Please visit the new QuickFacts for the latest data.

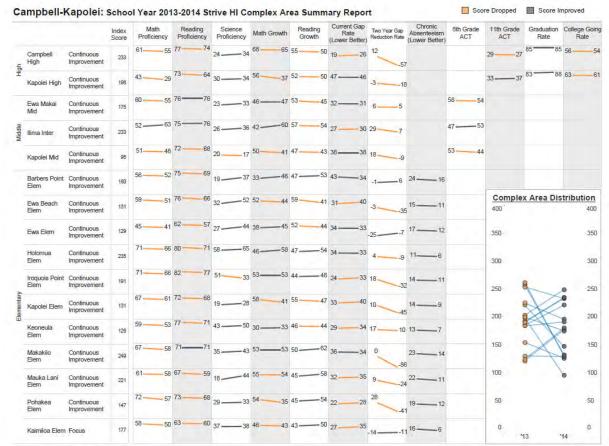


Kapolei CDP, Hawaii

	Want more? Browse data se	Want more? Browse data sets for Kapolei CDP			
People QuickFacts	Kapolei CDP	Hawaii			
Population, 2014 estimate	X	1,419,561			
Population, 2010 (April 1) estimates base	X	1,360,301			
Population, percent change - April 1, 2010 to July 1, 2014	X	4.4%			
Population, 2010	15,186	1,360,301			
Persons under 5 years, percent, 2010	8.0%	6.4%			
Persons under 18 years, percent, 2010	31.2%	22.3%			
Persons 65 years and over, percent, 2010	6.4%	14.3%			
Female persons, percent, 2010	50.3%	49.9%			
White alone, percent, 2010 (a)	13.0%	24.7%			
Black or African American alone, percent, 2010 (a)	1.8%	1.6%			
American Indian and Alaska Native alone, percent, 2010 (a)	0.2%	0.3%			
Asian alone, percent, 2010 (a)	34.4%	38.6%			
Native Hawaiian and Other Pacific Islander alone, percent, 2010 (a)	14.6%	10.0%			
1 Two or More Races, percent, 2010	35.1%	23.6%			
Hispanic or Latino, percent, 2010 (b)	11.2%	8.9%			
White alone, not Hispanic or Latino, percent, 2010	11.6%	22.7%			
1 Living in same house 1 year & over, percent, 2009-2013	86.1%	84.9%			
Foreign born persons, percent, 2009-2013	19.1%	17.9%			
Language other than English spoken at home, pct age 5+, 2009-2013	24.5%	25.4%			
High school graduate or higher, percent of persons age 25+, 2009-2013	93.1%	90.4%			
Bachelor's degree or higher, percent of persons age 25+, 2009-2013	30.7%	30.1%			
Veterans, 2009-2013	1,601	112,625			
Mean travel time to work (minutes), workers age 16+, 2009-2013	34.7	26.0			
Housing units, 2010	4.343	519.508			
Homeownership rate, 2009-2013	78.2%	57.6%			
Housing units in multi-unit structures, percent, 2009-2013	22.7%	38.1%			
Median value of owner-occupied housing units, 2009-2013	\$468,600	\$503,100			
Mouseholds, 2009-2013	4,310	449,771			
Persons per household, 2009-2013	3.58	2.96			
Per capita money income in past 12 months (2013 dollars), 2009-2013	\$27,979	\$29,305			
Median household income, 2009-2013	\$96,558	\$67.402			
Persons below poverty level, percent, 2009-2013	2.7%	11.2%			
Business QuickFacts	Kapolei CDP	Hawaii			
1 Total number of firms, 2007	F	120,374			
Black-owned firms, percent, 2007	F	0.9%			
American Indian- and Alaska Native-owned firms, percent, 2007	F	1.3%			
Asian-owned firms, percent, 2007	F	47.2%			
Native Hawaiian and Other Pacific Islander-owned firms, percent, 2007	F	9.5%			
Hispanic-owned firms, percent, 2007	F	3.6%			
Women-owned firms, percent, 2007	F	31.0%			
Manufacturers shipments, 2007 (\$1000)	01	8,799,266			
Merchant wholesaler sales, 2007 (\$1000)	01	8,894,672			
Retail sales, 2007 (\$1000)	01	17,611,851			
Retail sales per capita, 2007	NA	\$13.793			
Accommodation and food services sales, 2007 (\$1000)	01	8,042,210			
Geography QuickFacts	Kapolei CDP	Hawaii			
1 Land area in square miles, 2010	4.14	6,422.63			
Persons per square mile, 2010	3,669.0	211.8			
1 FIPS Code	30300	15			
Counties	Honolulu County				

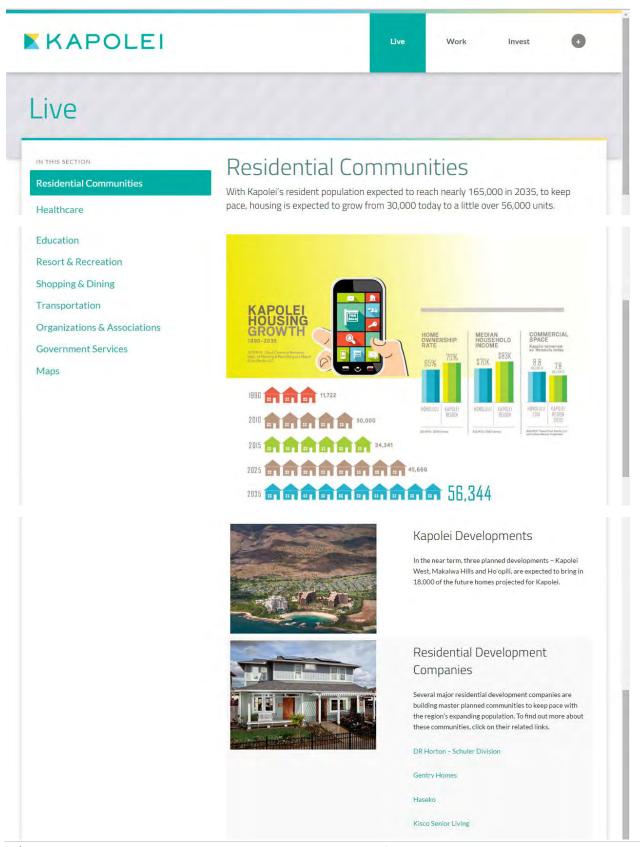
^{1:} Counties with 500 employees or less are excluded.

Strive High Educational Statistics for the Campbell-Kapolei District



Run Date: Thursday, September 11, 2014.

Evidence of Housing Increase in Kapolei



plannii

http://w

Kapolei Real Estate Market Snapshot August 2014

By Locations LLC8/28/2014 1:00:00 PM

<u>Kapolei</u> is a master-planned community located on the western shores of Oahu. Known for its new developments and larger, more affordable homes, Kapolei is growing exponentially and is even referred to as "Oahu's Second City."



Overlooking Kapolei, Hawaii

Kapolei Property Prices

Here are property prices in Kapolei as of August 2014:

- Starting at \$265,000 for a 2-bedroom, 1-bathroom, 843 square-foot townhome
 - Around \$455,000 for a 3-bedroom, 2-bathroom, 1,242 square-foot condo
- Starting at \$375,000 for a 3-bedroom, 2.5-bathroom, 1,261 square-foot single family home
 - Reaching \$600,000 for a 4-bedroom, 3-bathroom, 1,419 square-foot single family home
- Up to \$1.8 million for a 4-bedroom, 3-bathroom, 2,216 square foot **furnished single-family home** situated next to the Ko Olina golf course

Kapolei, which is part of the area known as the Ewa Plain, consists of over a dozen neighborhoods, offering a diverse selection of real estate. Click here to see homes for sale in the Ewa Plain.

Kapolei's available land is also a huge draw for investors and developers. Click here to see the vacant parcels.

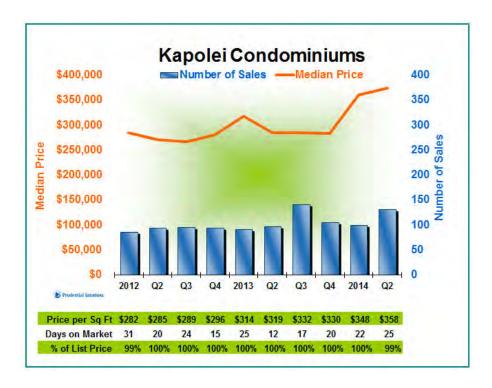


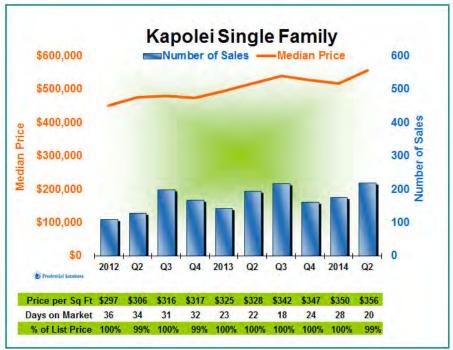
A typical newer home in Kapolei

Kapolei Real Estate

In 1980, the city of Kapolei was acres of sugar cane fields, but in recent years both residential and commercial real estate development has taken off. Today there are nearly **12,000 homes and condos**, and the <u>Honolulu Department of Planning and Permitting</u> anticipates that number will **exceed 50,000 by 2035**.

"Kapolei is a young and exciting community with lots of changes happening fast. This means new businesses and business opportunities," **says Todd Bedford, president of the Kapolei Chamber of Commerce.** "What's different is that Kapolei is still an affordable place for a young family to purchase a home, raise a family AND still have some great job opportunities." Bedford is president/CEO of Lifeline Fire & Security and has lived in Kapolei since 2005.





The current median price of a **single family home is \$593,000**, which is nearly 5% below the Oahu median value of \$622,100. The median price of a **condo in Kapolei is \$345,000**, which is about 3% above the Oahu median of \$335,700.

The average rent in Kapolei is \$2,001, which is 26% higher than the Oahu average of \$1,580.

There are currently **6,588 single family homes** and **4,947 condominiums** in Kapolei. According to a report by the Hawaii Information Service (HIS), average 2013 annual property taxes for a **single family home are \$1,708**, **\$1,004 for condos** and **\$1,025 for vacant lots**.



A street in Lower Makakilo

New Builds in Kapolei

Several major residential development companies are building master-planned communities to keep pace with the region's expanding population. These companies include <u>DR Horton - Schuler Division</u>, <u>Gentry Homes</u>, <u>Haseko</u> and <u>Kisco Senior Living</u>. In the near future, three planned developments – Kapolei West, <u>Makaiwa Hills</u> and <u>Ho'opili</u> – are expected to bring **18,000 homes to Kapolei**.

"My husband and I are buying in Kapolei because it's more affordable," says Ashley Gordon, a first-time homebuyer and current resident of Kailua. "It has a lot of growth potential with the future plans for the rail, mall, shops and dining and a new elementary school. It's a great area for young families like us." Gordon plans to purchase a condo in DR Horton's new build, Awakea at Mehana.

Opening in 2017, <u>The Honolulu Rail Transit Project</u> will connect Kapolei to downtown Honolulu with 20 miles of transit line, with two stations planned for Kapolei's urban core and three stations in the East Kapolei region - Ho'opili, Univeristy of West Oahu and East Kapolei.

The rail system, new builds and affordable home prices are a big draw to the city. "Kapolei is the growth center of Oahu," says Bedford. "As young families that never imagined owning their own home realize that the dream can become a reality in Kapolei the growth will only accelerate."







Senior Living in Kapolei

For the elderly looking for assisted living in Kapolei, <u>Ka Punawai Ola</u> offers intermediate care, Alzheimer's care, therapy and rehabilitation. Residents have access to an activity room, outdoor courtyards, a beauty salon and <u>other amenities</u>.

If independent senior living is more up your alley, check out <u>'Ilima at Leihano</u>, the newest Kisco Senior Living community. Construction <u>began in June</u> for the **84-unit facility**, which will include studios, 1-bedroom and 2-bedroom units. The site is located in the heart of Kapolei, close to shopping, medical services, the Kapolei Public Library, regional transit hub and parks. Leihano also offers assisted living and memory care services.



Kapolei Lifestyle

Residents enjoy access to an array of <u>modern amenities</u>. Several major shopping centers, national big box retailers and eateries from local sushi joints to upscale restaurants cater to every taste. World-class resorts and spas in <u>Ko Olina</u> are just a short drive away. There are family-friendly destinations like <u>Wet'n'Wild Hawaii</u>, <u>iTrampoline</u> and <u>Disney's Aulani</u>

Resort as well as challenging golf courses, charter fishing and snorkel adventures. There's truly something for everyone in this growing community of 40,000.

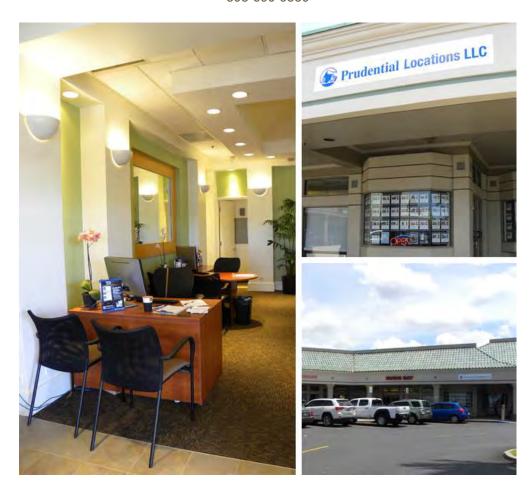


Locations LLC Kapolei Office

Interested in moving to Kapolei? Stop by our brand new office in the Kapolei Shopping Center! Our agents can tell you more about Kapolei real estate and show you available properties. At Locations LLC, we know neighborhoods.

Locations LLC Kapolei:

590 Farrington Hwy #125 Kapolei, HI 96707 808-690-9550



Kapolei on the Map

Drive Times without Traffic:

Waikiki: 35 minutes
Downtown Honolulu: 29 minutes
Diamond Head: 36 minutes
Airport: 20 minutes

Locations LLC invites you to comment on our articles and the issues they raise. (We love a good discussion!) Comments are moderated for offensive language, commercial messages and off topic posts, so your comments may not appear immediately.

Add your comment

- See more at: https://www.locationshawaii.com/news/ewa-plain/kapolei-real-estate-market-snapshot-august-2014.aspx#sthash.zpRAoAjq.dpuf

Attachment C: DOE & Private Schools

Campbell-Kapolei Complex Area Public Elementary & Middle Schools

Campbell complex

- Ewa Beach El
- Ewa El
- Ewa Makai Middle
- Holomua El
- Ilima Int
- Iroquois Point El
- Kaimiloa El
- Keoneula El
- Pohakea El

Kapolei complex

- Barbers Point El
- Kapolei El
- Hookele El
- Kapolei Middle
- Makakilo El
- Mauka Lani El

ALL Hawaii Attachment C Continued:

Campbell-Kapolei Complex Area Private schools

Island Pacific Academy

American Renaissance Academy

Seagull Schools – Kapolei

Friendship Christian School

Sources:

- http://www.hawaiipublicschools.org/ConnectWithUs/Organization/OfficesAndBranches /Pages/Campbell-Kapolei.aspx#
- http://kapolei.com/pages/education
- http://www.hais.org/pages/4241_Home.asp

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Island Pacific Academy

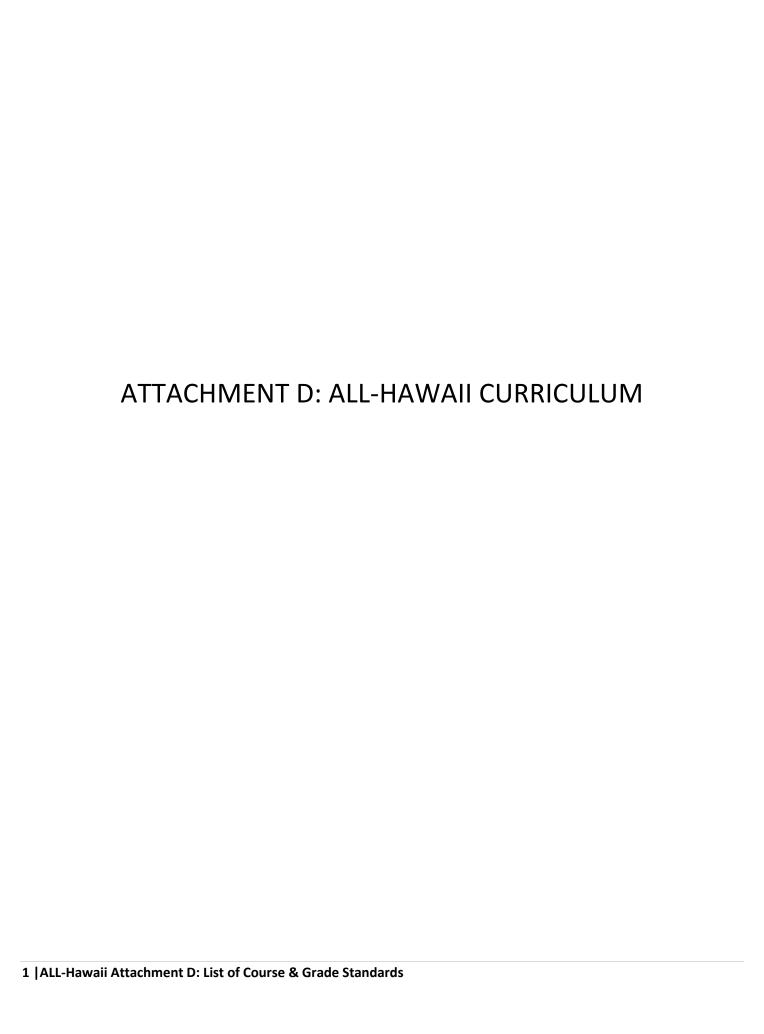
American Renaissance Academy

Seagull Schools – Kapolei

Friendship Christian School

Sources:

- http://www.hawaiipublicschools.org/ConnectWithUs/Organization/OfficesAndBranches /Pages/Campbell-Kapolei.aspx#
- http://kapolei.com/pages/education
- http://www.hais.org/pages/4241_Home.asp



LANGUAGE ARTS STANDARDS

Full Day Kindergarten / A.L.L. Language Arts Aligned to Meet or Exceed Common Core Grade Level Domains / Objectives to be mastered by year-end

READING LITERATURE:

Key Ideas and Details:

K.RL.1. With prompting and support, ask and answer questions about key details in a text.

K.RL.2. With prompting and support, retell familiar stories, including key details.

K.RL.3. With prompting and support, identify characters, settings, and major events in a story.

Craft and Structure:

K.RL.4. Ask and answer questions about unknown words in a text.

K.RL.5. Recognize common types of texts (e.g., storybooks, poems).

K.RL.6. With prompting and support, name the author and illustrator of a story and define the role of each in telling the story.

Integration of Knowledge and Ideas:

K.RL.7. With prompting and support, describe the relationship between illustrations and the story in which they appear (e.g., what moment in a story an illustration depicts).

K.RL.9. With prompting and support, compare and contrast the adventures and experiences of characters in familiar stories.

Range of Reading and Level of Text Complexity:

K.RL.10. Actively engage in group reading activities with purpose and understanding.

READING FOR INFORMATION / READING COMPREHENSION

Key Ideas and Details:

K.RI.1. With prompting and support, ask and answer questions about key details in a text.

K.RI.2. With prompting and support, identify the main topic and retell key details of a text.

K.RI.3. With prompting and support, describe the connection between two individuals, events, ideas, or pieces of information in a text.

Craft and Structure:

K.RI.4. With prompting and support, ask and answer questions about unknown words in a text.

K.RI.5. Identify the front cover, back cover, and title page of a book.

K.RI.6. Name the author and illustrator of a text and define the role of each in presenting the ideas or information in a text.

Integration of Knowledge and Ideas:

K.RI.7. With prompting and support, describe the relationship between illustrations and the text in which they appear (e.g., what person, place, thing, or idea in the text an illustration depicts).

K.RI.8. With prompting and support, identify the reasons an author gives to support points in a text.

K.RI.9. With prompting and support, identify basic similarities in and differences between two texts on the same topic (e.g., in illustrations, descriptions, or procedures).

Range of Reading and Level of Text Complexity:

K.RI.10. Actively engage in group reading activities with purpose and understanding.

READING FOUNDATIONS

Print Concepts:

K.RF.1. Demonstrate understanding of the organization and basic features of print.

- a. Follow words from left to right, top to bottom, and page by page.
- b. Recognize that spoken words are represented in written language by specific sequences of letters.
- c. Understand that words are separated by spaces in print.
- d. Recognize and name all upper- and lowercase letters of the alphabet.

Phonological Awareness:

K.RF.2. Demonstrate understanding of spoken words, syllables, and sounds (phonemes).

- a. Recognize and produce rhyming words.
- b. Count, pronounce, blend, and segment syllables in spoken words.
- c. Blend and segment onsets and rimes of single-syllable spoken words.
- d. Isolate and pronounce the initial, medial vowel, and final sounds (phonemes) in three-phoneme (consonant-vowel-consonant, or CVC) words.*(This does not include CVCs ending with /l/, /r/, or /x/.)
 - e. Add or substitute individual sounds (phonemes) in simple, one-syllable words to make new words.

Phonics and Word Recognition:

K.RF.3. Know and apply grade-level phonics and word analysis skills in decoding words.

- a. Demonstrate basic knowledge of letter-sound correspondences by producing the primary or most frequent sound for each consonant.
- b. Associate the long and short sounds with the common spellings (graphemes) for the five major vowels.
- c. Read common high-frequency words by sight. (e.g., the, of, to, you, she. my, is, are, do, does).
- d. Distinguish between similarly spelled words by identifying the sounds of the letters that differ.

Fluency

K.RF.4 Read emergent-reader texts with purpose and understanding.

WRITING COMPOSITION, RHETORIC AND PENMANSHIP

Text Types and Purposes:

K.W.1. Use a combination of drawing, dictating, and writing to compose opinion pieces in which they tell a reader the topic or the name of the book they are writing about and state an opinion or preference about the topic or book (e.g., My favorite book is . . .).

K.W.2. Use a combination of drawing, dictating, and writing to compose informative/explanatory texts in which they name what they are writing about and supply some information about the topic.

K.W.3. Use a combination of drawing, dictating, and writing to narrate a single event or several loosely linked events, tell about the events in the order in which they occurred, and provide a reaction to what happened.

Production and Distribution of Writing:

K.W.5. With guidance and support from adults, respond to questions and suggestions from peers and add details to strengthen writing as needed. K.W.6. With guidance and support from adults, explore a variety of digital tools to produce and publish writing, including in collaboration with peers.

Research to Build and Present Knowledge:

K.W.7.Participate in shared research and writing projects (e.g., explore a number of books by a favorite author and express opinions about them).
K.W.8. With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question.

SPEAKING AND LISTENING

Comprehension and Collaboration:

K.SL.1.Participate in collaborative conversations with diverse partners about kindergarten topics and texts with peers and adults in small and larger groups.

a. Follow agreed-upon rules for discussions (e.g., listening to others and taking turns speaking about the topics and texts under discussion).

b. Continue a conversation through multiple exchanges.

K.SL.2. Confirm understanding of a text read aloud or information presented orally or through other media by asking and answering questions about key details and requesting clarification if something is not understood.

K.SL.3. Ask and answer questions in order to seek help, get information, or clarify something that is not understood.

Presentation of Knowledge and Ideas:

K.SL.4. Describe familiar people, places, things, and events and, with prompting and support, provide additional detail.

K.SL.5. Add drawings or other visual displays to descriptions as desired to provide additional detail.

K.SL.6. Speak audibly and express thoughts, feelings, and ideas clearly.

SYNTAX, SEMANTICS, ORTHOGRAPHY AND LEXICON

Conventions of Standard English:

K.L.1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.

a. Print many upper- and lowercase letters.

b. Use frequently occurring nouns and verbs.

c. Form regular plural nouns orally by adding /s/ or /es/ (e.g., dog. dogs; wish. wishes).

d. Understand and use question words (interrogatives) (e.g., who, what, where, when, why, how).

e. Use the most frequently occurring prepositions (e.g., to, from, in, out, on, off. for, of. by, with).

f. Produce and expand complete sentences in shared language activities.

K.L.2. Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.

a. Capitalize the first word in a sentence and the pronoun I.

b. Recognize and name end punctuation.

c. Write a letter or letters for most consonant and short-vowel sounds (phonemes).

d. Spell simple words phonetically, drawing on knowledge of sound-letter relationships.

Vocabulary Acquisition and Use:

K.L.4. Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on kindergarten reading and content.

a. Identify new meanings for familiar words and apply them accurately (e.g., knowing duck is a bird and learning the verb to duck).

b. Use the most frequently occurring inflections and affixes (e.g., -ed. -s, re-, un-, pre-, -ful, -less) as a clue to the meaning of an unknown word.

K.L.5. With guidance and support from adults, explore word relationships and nuances in word meanings.

a. Sort common objects into categories (e.g., shapes, foods) to gain a sense of the concepts the categories represent.

b. Demonstrate understanding of frequently occurring verbs and adjectives by relating them to their opposites (antonyms).

c. Identify real-life connections between words and their use (e.g., note places at school that are colorful).

d. Distinguish shades of meaning among verbs describing the same general action (e.g., walk, march, strut, prance) by acting out the meanings.

K.L.6. Use words and phrases acquired through conversations, reading and being read to, and responding to texts.

First Grade / A.L.L. Language Arts Aligned to Meet or Exceed Common Core Grade Level Domains / Objectives to be mastered by year-end

<u>Prerequisite Knowledge / Skill reactivation / Retention and Recall:</u> Before providing instruction in the following objectives, the instructor shall assess students' retention and skills relative to objectives articulated for prior grades; and review/ reteach if necessary. To satisfy Language Arts requirements for the current grade, students must demonstrate mastery of objectives articulated for prior grades along with those articulated for the current grade.

READING LITERATURE

Key Ideas and Details:

1.RL.1. Ask and answer questions about key details in a text.

- 1.RL.2 Retell stories, including key details, and demonstrate understanding of their central message or lesson.
- 1.RL.3 Describe characters, settings, and major events in a story, using key details.

Craft and Structure:

- 1.RL.4 Identify words and phrases in stories or poems that suggest feelings or appeal to the senses.
- 1.RL.5 Explain major differences between books that tell stories and books that give information, drawing on a wide reading of a range of text types. 1.RL.6 Identify who is telling the story at various points in a text.

Integration of Knowledge and Ideas:

- 1.RL.7 Use illustrations and details in a story to describe its characters, setting, or events.
- 1.RL.9 Compare and contrast the adventures and experiences of characters in stories.

Range of Reading and Level of Text Complexity:

1.RL.10 With prompting and support, read prose and poetry of appropriate complexity for grade one.

READING FOR INFORMATION / READING COMPREHENSION

Key Ideas and Details:

- 1.RI.1 Ask and answer questions about key details in a text.
- 1.RI.2 Identify the main topic and retell key details of a text.
- 1.RI.3 Describe the connection between two individuals, events, ideas, or pieces of information in a text.

Craft and Structure:

- 1.RI.4 Ask and answer questions to help determine or clarify the meaning of words and phrases in a text.
- 1.RL.5 Know and use various text features (e.g., headings, tables of contents, glossaries, electronic menus, icons) to locate key facts or information in a text.
- 1.RI.6 Distinguish between information provided by pictures or other illustrations and information provided by the words in a text.

Integration of Knowledge and Ideas:

- 1.RI.7 Use the illustrations and details in a text to describe its key ideas.
- 1.RI.8 Identify the reasons an author gives to support points in a text.
- 1.RI.9 Identify basic similarities in and differences between two texts on the same topic (e.g., in illustrations, descriptions, or procedures).

Range of Reading and Level of Text Complexity:

1.RI.10 With prompting and support, read informational texts appropriately complex for grade one.

READING FOUNDATIONS

Print Concepts:

1.RF.1 Demonstrate understanding of the organization and basic features of print.

Phonological Awareness:

- 1.RF.2 Demonstrate understanding of spoken words, syllables, and sounds (phonemes).
 - a. Distinguish long from short vowel sounds in spoken single-syllable words .
 - b. Orally produce single-syllable words by blending sounds (phonemes), including consonant blends.
 - c. Isolate and pronounce initial, medial vowel, and final sounds (phonemes) in spoken single-syllable words.
 - d. Segment spoken single-syllable words into their complete sequence of individual sounds (phonemes).

Phonics and Word Recognition:

- 1.RF.3 Know and apply grade-level phonics and word analysis skills in decoding words.
 - a. Know the spelling-sound correspondences for common consonant digraphs (two letters that represent one sound).
 - b. Decode regularly spelled one-syllable words.
 - c. Know final -e and common vowel team conventions for representing long vowel sounds.
 - d. Use knowledge that every syllable must have a vowel sound to determine the number of syllables in a printed word.
 - e. Decode two-syllable words following basic patterns by breaking the words into syllables.
 - f. Read words with inflectional endings.
 - g. Recognize and read grade-appropriate irregularly spelled words.

Fluency:

- 1.RF.4 Read with sufficient accuracy and fluency to support comprehension.
 - a. Read grade-level text with purpose and understanding.
 - b. Read grade-level text orally with accuracy, appropriate rate. and expression.
 - c. Use context to confirm or self-correct word recognition and understanding, rereading as necessary.

WRITING COMPOSITION AND PENMANSHIP

Text Types and Purposes:

- 1.W.1 Write opinion pieces in which they introduce the topic or name the book they are writing about, state an opinion, supply a reason for the opinion, and provide some sense of closure.
- 1.W.2 Write informative/explanatory texts in which they name a topic, supply some facts about the topic, and provide some sense of closure.
- 1.W.3 Write narratives in which they recount two or more appropriately sequenced events, include some details regarding what happened, use temporal words to signal event order, and provide some sense of closure.

Production and Distribution of Writing:

- 1.W.5 With guidance and support from adults, focus on a topic, respond to questions and suggestions from peers, and add details to strengthen writing as needed.
- 1.W.6 With guidance and support from adults, use a variety of digital tools to produce and publish writing, including in collaboration with peers. Research to Build and Present Knowledge:
 - 1.W.7 Participate in shared research and writing projects (e.g., explore a number of "how-to" books on a given topic and use them to write a sequence of instructions).

1.W.8 With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question.

SPEAKING AND LISTENING

Comprehension and Collaboration:

- 1.SL.1 Participate in collaborative conversations with diverse partners about grade 1 topics and texts with peers and adults in small and larger groups.
- a. Follow agreed-upon rules for discussions (e.g., listening to others with care. speaking one at a time about the topics and texts under discussion).
 - b, Build on others' talk in conversations by responding to the comments of others through multiple exchanges.
 - c. Ask questions to clear up any confusion about the topics and texts under discussion.
- 1.SL.2 Ask and answer questions about key details in a text read aloud or information presented orally or through other media.
- 1.SL.3 Ask and answer questions about what a speaker says in order to gather additional information or clarify something that is not understood.

Presentation of Knowledge and Ideas:

- 1.SL.4 Describe people, places, things, and events with relevant details, expressing ideas and feelings clearly.
- 1.SL.5 Add drawings or other visual displays to descriptions when appropriate to clarify ideas, thoughts, and feelings.
- 1.SL.6 Produce complete sentences when appropriate to task and situation. (See grade 1 Language standards 1 and 3 on page 26 for specific expectations.)

SYNTAX, SEMANTICS AND LEXICON

Conventions of Standard English:

- 1.L.1 Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
 - a. Print all upper- and lowercase letters.
 - b. Use common, proper, and possessive nouns.
 - c. Use singular and plural nouns with matching verbs in basic sentences (e.g., He hops; We hop).
 - d. Use personal, possessive, and indefinite pronouns (e.g., I, me. my; they, them, their, anyone, everything).
- e. Use verbs to convey a sense of past, present, and future (e.g., Yesterday I walked home; Today I walk home; Tomorrow I will walk home).
 - f. Use frequently occurring adjectives.
 - g. Use frequently occurring conjunctions (e.g., and, but, or, so, because).
 - h. Use determiners (e.g., articles, demonstratives).
 - i. Use frequently occurring prepositions (e.g., during, beyond, toward).
- j. Produce and expand complete simple and compound declarative, interrogative, imperative, and exclamatory sentences in response to prompts.
- 1.L.2 Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.
 - a. Capitalize dates and names of people.
 - b. Use end punctuation for sentences.
 - c. Use commas in dates and to separate single words in a series.
 - d. Use conventional spelling for words with common spelling patterns and for frequently occurring irregular words.
 - e. Spell untaught words phonetically, drawing on phonemic awareness and spelling conventions.

Vocabulary Acquisition and Use:

- 1.L.4 Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 1 reading and content, choosing flexibly from an array of strategies.
 - a. Use sentence-level context as a clue to the meaning of a word or phrase.
 - b. Use frequently occurring affixes as a clue to the meaning of a word.
 - c. Identify frequently occurring root words (e.g., look) and their inflectional forms (e.g., looks, looked, looking).
- 1.L.5 With guidance and support from adults, demonstrate understanding of word relationships and nuances in word meanings.
 - a. Sort words into categories (e.g., colors, clothing) to gain a sense of the concepts the categories represent.
 - b. Define words by category and by one or more key attributes (e.g., a duck is a bird that swims; a tiger is a large cat with stripes).
 - c. Identify real-life connections between words and their use (e.g., note places at home that are cozy).
- d. Distinguish shades of meaning among verbs differing in manner (e.g., look, peek, glance, stare, glare, scowl) and adjectives differing in intensity (e.g., large, gigantic) by defining or choosing them or by acting out the meanings.
- 1.L.6 Use words and phrases acquired through conversations, reading and being read to, and responding to texts, including using frequently occurring conjunctions to signal simple relationships (e.g., I named my hamster Nibblet because she nibbles too much because she likes that).

Second Grade / A.L.L. Language Arts Aligned to Meet or Exceed Common Core Grade Level Domains / Objectives to be mastered by year-end

<u>Prerequisite Knowledge / Skill reactivation / Retention and Recall:</u> Before providing instruction in the following objectives, the instructor shall assess students' retention and skills relative to objectives articulated for prior grades; and review/ reteach if necessary. To satisfy Language Arts requirements for the current grade, students must demonstrate mastery of objectives articulated for prior grades along with those articulated for the current grade.

Reading Literature

Key Ideas and Details:

- 2.RL.1 Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text.
- 2.RL.2 Recount stories, including fables and folktales from diverse cultures, and determine their central message, lesson, or moral.
- 2.RL.3 Describe how characters in a story respond to major events and challenges.

Craft and Structure:

- 2.RL.4 Describe how words and phrases (e.g., regular beats, alliteration, rhymes, repeated lines) supply rhythm and meaning in a story, poem, or song. 2.RL.5 Describe the overall structure of a story, including describing how the beginning introduces the story and the ending concludes the action.
- 2.RL.6 Acknowledge differences in the points of view of characters, including by speaking in a different voice for each character when reading dialogue aloud.

Integration of Knowledge and Ideas:

2.RL.7 Use information gained from the illustrations and words in a print or digital text to demonstrate understanding of its characters, setting, or plot. 2.RL.9 Compare and contrast two or more versions of the same story (e.g., Cinderella stories) by different authors or from different cultures.

Range of Reading and Level of Text Complexity:

2.RL.10 By the end of the year, read and comprehend literature, including prose and poetry, in the grades 2–3 text complexity band proficiently, with scaffolding as needed at the high end of the range.

Reading Informational

Key Ideas and Details:

- 2.RI.1 Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text.
- 2.RI.2 Identify the main topic of a multiparagraph text as well as the focus of specific paragraphs within the text.
- 2.RI.3 Describe the connection between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text.

Craft and Structure:

- 2.RI.4 Determine the meaning of words and phrases in a text relevant to a grade 2 topic or subject area.
- 2.R1.5 Know and use various text features (e.g., captions, bold print, subheadings, glossaries, indexes, electronic menus, icons) to locate key facts or information in a text efficiently.
- 2.RI.6 Identify the main purpose of a text, including what the author wants to answer, explain, or describe.

Integration of Knowledge and Ideas:

- 2.RI.7 Explain how specific images (e.g., a diagram showing how a machine works) contribute to and clarify a text.
- 2.RI.8 Describe how reasons support specific points the author makes in a text.
- 2.RI.9 Compare and contrast the most important points presented by two texts on the same topic.

Range of Reading and Level of Text Complexity:

2.RI.10 By the end of year, read and comprehend informational texts, including history/social studies, science, and technical texts, in the grades 2–3 text complexity band proficiently, with scaffolding as needed at the high end of the range.

READING FOUNDATIONS

Phonics and Word Recognition:

- 2.RF.3 Know and apply grade-level phonics and word analysis skills in decoding words.
 - a. Distinguish long and short vowels when reading regularly spelled one-syllable words.
 - b. Know spelling-sound correspondences for additional common vowel teams.
 - c. Decode regularly spelled two-syllable words with long vowels.
 - d. Decode words with common prefixes and suffixes.
 - e. Identify words with inconsistent but common spelling-sound correspondences.
 - f. Recognize and read grade-appropriate irregularly spelled words.

Fluency:

- 2.RF.4 Read with sufficient accuracy and fluency to support comprehension.
 - a. Read grade-level text with purpose and understanding.
 - **b.** Read grade-level text orally with accuracy, appropriate rate and expression.
 - c. Use context to confirm or self-correct word recognition and understanding rereading as necessary.

WRITING COMPOSITION, RHETORIC AND PENMANSHIP

Text Types and Purposes:

- 2.W.1 Write opinion pieces in which they introduce the topic or book they are writing about, state an opinion, supply reasons that support the opinion, use linking words (e.g., because, and, also) to connect opinion and reasons, and provide a concluding statement or section.
- 2.W.2 Write informative/explanatory texts in which they introduce a topic, use facts and definitions to develop points, and provide a concluding statement or section.
- 2.W.3 Write narratives in which they recount a well-elaborated event or short sequence of events, include details to describe actions, thoughts, and feelings, use temporal words to signal event order, and provide a sense of closure.

Production and Distribution of Writing:

- 2.W.5 With guidance and support from adults and peers, focus on a topic and strengthen writing as needed by revising and editing.
- 2.W.6 With guidance and support from adults, use a variety of digital tools to produce and publish writing, including in collaboration with peers.

Research to Build and Present Knowledge:

- 2.W.7 Participate in shared research and writing projects (e.g., read a number of books on a single topic to produce a report; record science observations).
- 2.W.8 Recall information from experiences or gather information from provided sources to answer a question.

ORAL COMMUNICATION, RHETORIC, AND PUBLIC SPEAKING

Comprehension and Collaboration:

- 2.SL.1 Participate in collaborative conversations with diverse partners about grade 2 topics and texts with peers and adults in small and larger groups.
- a. Follow agreed-upon rules for discussions (e.g., gaining the floor in respectful ways, listening to others with care. speaking one at a time about the topics and texts under discussion).

- b. Build on others' talk in conversations by linking their comments to the remarks of others.
- c. Ask for clarification and further explanation as needed about the topics and texts under discussion.
- 2.SL.2 Recount or describe key ideas or details from a text read aloud or information presented orally or through other media.
- 2.SL.3 Ask and answer questions about what a speaker says in order to clarify comprehension, gather additional information, or deepen understanding of a topic or issue.

Presentation of Knowledge and Ideas:

- 2.SL.4 Tell a story or recount an experience with appropriate facts and relevant, descriptive details, speaking audibly in coherent sentences.
- 2.SL.5 Create audio recordings of stories or poems; add drawings or other visual displays to stories or recounts of experiences when appropriate to clarify ideas, thoughts, and feelings.
- **2.SL.6** Produce complete sentences when appropriate to task and situation in order to provide requested detail or clarification. (See grade 2 Language standards 1 and 3 on page 26 for specific expectations.)

SYNTAX, SEMANTICS AND LEXICON

Conventions of Standard English:

- 2.L.1 Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
 - a. Use collective nouns (e.g., group).
 - b. Form and use frequently occurring irregular plural nouns (e.g., feet, children, teeth. mice. fish).
 - c. Use reflexive pronouns (e.g., myself. ourselves).
 - d. Form and use the past tense of frequently occurring irregular verbs (e.g., sat, hid. told).
 - e. Use adjectives and adverbs, and choose between them depending on what is to be modified.
- f. Produce, expand, and rearrange complete simple and compound sentences (e.g., The boy watched the movie; The little boy watched the movie; The action movie was watched by the little boy).
- 2.L.2 Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.
 - a. Capitalize holidays, product names, and geographic names.
 - b. Use commas in greetings and closings of letters.
 - c. Use an apostrophe to form contractions and frequently occurring possessives.
 - d. Generalize learned spelling patterns when writing words (e.g., cage ? badge; boy ? boil).
 - e. Consult reference materials, including beginning dictionaries, as needed to check and correct spellings

Knowledge of Language:

2.L.3 Use knowledge of language and its conventions when writing, speaking, reading, or listening. Compare formal and informal uses of English.

Vocabulary Acquisition and Use:

- 2.L.4 Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 2 reading and content, choosing flexibly from an array of strategies.
 - a. Use sentence-level context as a clue to the meaning of a word or phrase.
 - b. Determine the meaning of the new word formed when a known prefix is added to a known word (e.g., happy/unhappy, tell/retell).
 - c. Use a known root word as a clue to the meaning of an unknown word with the same root (e.g., addition, additional).
- d. Use knowledge of the meaning of individual words to predict the meaning of compound words (e.g., birdhouse, lighthouse, housefly, bookshelf, notebook, bookmark).
 - e. Use glossaries and beginning dictionaries, both print and digital, to determine or clarify the meaning of words and phrases.
- 2.L.5 Demonstrate understanding of word relationships and nuances in word meanings.
 - a. Identify real-life connections between words and their use (e.g., describe foods that are spicy or juicy).
- b. Distinguish shades of meaning among closely related verbs (e.g., toss, throw, hurl) and closely related adjectives (e.g., thin, slender, skinny, scrawny).
- 2.L.6 Use words and phrases acquired through conversations, reading and being read to, and responding to texts, including using adjectives and adverbs to describe (e.g., When other kids are happy that makes me happy).

Third Grade / A.L.L. Language Arts Aligned to Meet or Exceed Common Core Grade Level Domains / Objectives to be mastered by year-end

Prerequisite Knowledge / Skill reactivation / Retention and Recall: Before providing instruction in the following objectives, the instructor shall assess students retention and skills relative to objectives articulated for prior grades; and review/ reteach if necessary. To satisfy Language Arts requirements for the current grade, students must demonstrate mastery of objectives articulated for prior grades along with those articulated for the current grade.

READING LITERATURE

Key Ideas and Details:

- 3.RL.1 Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.
- 3.RL.2 Recount stories, including fables, folktales, and myths from diverse cultures; determine the central message, lesson, or moral and explain how it is conveyed through key details in the text.
- 3.RL.3 Describe characters in a story (e.g., their traits, motivations, or feelings) and explain how their actions contribute to the sequence of events.

Craft and Structure:

- 3.RL.4 Determine the meaning of words and phrases as they are used in a text, distinguishing literal from nonliteral language.
- 3.RL.5 Refer to parts of stories, dramas, and poems when writing or speaking about a text, using terms such as chapter, scene, and stanza; describe how each successive part builds on earlier sections.
- 3.RL.6 Distinguish their own point of view from that of the narrator or those of the characters.

Integration of Knowledge and Ideas:

3.RL.7 Explain how specific aspects of a text's illustrations contribute to what is conveyed by the words in a story (e.g., create mood, emphasize aspects of a character or setting).

3.RL.9 Compare and contrast the themes, settings, and plots of stories written by the same author about the same or similar characters (e.g., in books from a series).

Range of Reading and Complexity of Text:

3.RL.10 10. By the end of the year, read and comprehend literature, including stories, dramas, and poetry, at the high end of the grades 2–3 text complexity band independently and proficiently.

READING FOR INFORMATION / READING COMPREHENSION

Key Ideas and Details:

- **3.RI.1** Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.
- 3.RI.2 Determine the main idea of a text; recount the key details and explain how they support the main idea.
- 3.RL3 Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect.

Craft and Structure:

- 3.RI.4 Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 3 topic or subject area.
- 3.RI.5: Use text features and search tools (e.g., key words, sidebars, hyperlinks) to locate information relevant to a given topic efficiently.
- 3.RI.6 Distinguish their own point of view from that of the author of a text.

Integration of Knowledge and Ideas:

- 3.RI.7 Use information gained from illustrations (e.g., maps, photographs) and the words in a text to demonstrate understanding of the text (e.g., where, when, why, and how key events occur).
- 3.RI.8 Describe the logical connection between particular sentences and paragraphs in a text (e.g., comparison, cause/effect, first/second/third in a sequence).
- 3.RI.9 Compare and contrast the most important points and key details presented in two texts on the same topic.

Range of Reading and Level of Text Complexity:

3.RI.10 By the end of the year, read and comprehend informational texts, including history/social studies, science, and technical texts, at the high end of the grades 2–3 text complexity band independently and proficiently.

READING FOUNDATIONS

Phonics and Word Recognition:

- 3.RF.3 Know and apply grade-level phonics and word analysis skills in decoding words.
 - a. Identify and know the meaning of the most common prefixes and derivational suffixes.
 - b. Decode words with common Latin suffixes.
 - c. Decode multisyllabic words.
 - d. Read grade-appropriate irregularly spelled words.

Fluency:

- 3.RF.4 Read with sufficient accuracy and fluency to support comprehension.
 - a. Read grade-level text with purpose and understanding.
 - b. Read grade-level prose and poetry orally with accuracy, appropriate rate, and expression.
 - c. Use context to confirm or self-correct word recognition and understanding, rereading as necessary.

WRITING COMPOSITION, RHETORIC AND PENMANSHIP

Text Types and Purposes:

- 3.W.1 Write opinion pieces on familiar topics or texts, supporting a point of view with reasons.
 - a. Introduce the topic or text they are writing about, state an opinion, and create an organizational structure that lists reasons.
 - **b.** Provide reasons that support the opinion.
 - c. Use linking words and phrases (e.g., because therefore since for example) to connect opinion and reasons.
 - **d**. Provide a concluding statement or section.
- 3.W.2 Write informative/explanatory texts to examine a topic and convey ideas and information clearly.
 - a. Introduce a topic and group related information together; include illustrations when useful to aiding comprehension.
 - b. Develop the topic with facts, definitions, and details.
 - c. Use linking words and phrases (e.g., also, another, and. more. but) to connect ideas within categories of information.
 - **d**. Provide a concluding statement or section.
- 3.W.3 Write narratives to develop real or imagined experiences or events using effective technique. descriptive details, and clear event sequences.
 - a. Establish a situation and introduce a narrator and/or characters; organize an event sequence that unfolds naturally.
- b. Use dialogue and descriptions of actions, thoughts, and feelings to develop experiences and events or show the response of characters to situations.
 - c. Use temporal words and phrases to signal event order.
 - d. Provide a sense of closure.

Production and Distribution of Writing:

- **3.W.4** With guidance and support from adults, produce writing in which the development and organization are appropriate to task and purpose. (Grade-specific expectations for writing types are defined in standards 1–3 above.)
- 3.W.5 With guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, and editing. (Editing for conventions should demonstrate command of Language standards 1–3 up to and including grade 3 on page 29.)
- 3.W.6 With guidance and support from adults, use technology to produce and publish writing (using keyboarding skills) as well as to interact and collaborate with others.

Research to Build and Present Knowledge:

3.W.7 Conduct short research projects that build knowledge about a topic.

3.W.8 Recall information from experiences or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories.

Range of Writing:

3.W.10 Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

ORAL COMMUNICATION, RHETORIC, AND PUBLIC SPEAKING

Comprehension and Collaboration:

- **3.SL.1**: Engage effectively in a range of collaborative discussions (one-on-one. in groups, and teacher-led) with diverse partners on grade 3 topics and texts, building on others' ideas and expressing their own clearly.
- a. Come to discussions prepared. having read or studied required material; explicitly draw on that preparation and other information known about the topic to explore ideas under discussion.
- b. Follow agreed-upon rules for discussions (e.g., gaining the floor in respectful ways, listening to others with care. speaking one at a time about the topics and texts under discussion).
 - c. Ask questions to check understanding of information presented, stay on topic, and link their comments to the remarks of others.
 - d. Explain their own ideas and understanding in light of the discussion.
- **3.SL.2** Determine the main ideas and supporting details of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.
- 3.SL.3 Ask and answer questions about information from a speaker, offering appropriate elaboration and detail.

Presentation of Knowledge and Ideas:

- **3.SL.4** Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details, speaking clearly at an understandable pace.
- 3.SL.5 Create engaging audio recordings of stories or poems that demonstrate fluid reading at an understandable pace; add visual displays when appropriate to emphasize or enhance certain facts or details.
- **3.SL.6** Speak in complete sentences when appropriate to task and situation in order to provide requested detail or clarification. (See grade 3 Language standards 1 and 3 on page 26 for specific expectations.)

SYNTAX, SEMANTICS, ORTHOGRAPHY AND LEXICON

Conventions of Standard English:

- 3.L.1 Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
 - a. Explain the function of nouns, pronouns, verbs, adjectives, and adverbs in general and their functions in particular sentences.
 - **b.** Form and use regular and irregular plural nouns.
 - c. Use abstract nouns (e.g., childhood).
 - d. Form and use regular and irregular verbs.
 - e. Form and use the simple (e.g., I walked; I walk; I will walk) verb tenses.
 - f. Ensure subject-verb and pronoun-antecedent agreement.*
 - g. Form and use comparative and superlative adjectives and adverbs, and choose between them depending on what is to be modified.
 - h. Use coordinating and subordinating conjunctions.
 - i, Produce simple, compound, and complex sentences.
- 3.L.2 Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.
 - a. Capitalize appropriate words in titles.
 - b. Use commas in addresses.
 - c. Use commas and quotation marks in dialogue.
 - **d.** Form and use possessives.
- e. Use conventional spelling for high-frequency and other studied words and for adding suffixes to base words (e.g., sitting. smiled. cries, happiness).
- f. Use spelling patterns and generalizations (e.g., word families, position-based spellings, syllable patterns, ending rules, meaningful word parts) in writing words.
 - g. Consult reference materials, including beginning dictionaries, as needed to check and correct spellings.

Knowledge of Language:

- 3.L.3 Use knowledge of language and its conventions when writing. Speaking, reading, or listening.
 - a. Choose words and phrases for effect.*
 - b. Recognize and observe differences between the conventions of spoken and written standard English.

Vocabulary Acquisition and Use:

- **3.L.4** Determine or clarify the meaning of unknown and multiple-meaning word and phrases based on grade 3 reading and content, choosing flexibly from a range of strategies.
 - a. Use sentence-level context as a clue to the meaning of a word or phrase.
- b. Determine the meaning of the new word formed when a known affix is added to a known word (e.g., agreeable/disagreeable. comfortable/uncomfortable. care/careless, heat/preheat).
 - c. Use a known root word as a clue to the meaning of an unknown word with the same root (e.g., company, companion).
 - d. Use glossaries or beginning dictionaries, both print and digital, to determine or clarify the precise meaning of key words and phrases.
- 3.L.5 Demonstrate understanding of word relationships and nuances in word meanings.
 - a. Distinguish the literal and nonliteral meanings of words and phrases in context (e.g., take steps).
 - b. Identify real-life connections between words and their use (e.g., describe people who are friendly or helpful).
- c. Distinguish shades of meaning among related words that describe states of mind or degrees of certainty (e.g., knew, believed. suspected. heard. wondered).
- **3.L.6** Acquire and use accurately grade-appropriate conversational, general academic, and domain-specific words and phrases, including those that signal spatial and temporal relationships (e.g., After dinner that night we went looking for them).

Fourth Grade / A.L.L. Language Arts Aligned to Meet or Exceed Common Core Grade Level Domains / Objectives to be mastered by year-end

<u>Prerequisite Knowledge / Skill reactivation / Retention and Recall:</u> Before providing instruction in the following objectives, the instructor shall assess students' retention and skills relative to objectives articulated for prior grades; and review/ reteach if necessary. To satisfy Language Arts requirements for the current grade, students must demonstrate mastery of objectives articulated for prior grades along with those articulated for the current grade.

READING LITERATURE

Key Ideas and Details:

- 4.RL.1 Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.
- 4.RL.2 Determine a theme of a story, drama, or poem from details in the text; summarize the text.
- 4.RL.3 Describe in depth a character, setting, or event in a story or drama, drawing on specific details in the text (e.g., a character's thoughts, words, or actions).

Craft and Structure:

- 4.RL.4 Determine the meaning of words and phrases as they are used in a text, including those that allude to significant characters found in mythology (e.g., Herculean).
- 4.RL.5 Explain major differences between poems, drama, and prose, and refer to the structural elements of poems (e.g., verse, rhythm, meter) and drama (e.g., casts of characters, setting descriptions, dialogue, stage directions) when writing or speaking about a text.
- 4.RL.6 Compare and contrast the point of view from which different stories are narrated, including the difference between first- and third-person narrations.

Integration of Knowledge and Ideas:

- 4.RL.7 Make connections between the text of a story or drama and a visual or oral presentation of the text, identifying where each version reflects specific descriptions and directions in the text.
- 4.RL.9 Compare and contrast the treatment of similar themes and topics (e.g., opposition of good and evil) and patterns of events (e.g., the quest) in stories, myths, and traditional literature from different cultures.

Range of Reading and Complexity of Text:

4.RL.10 By the end of the year, read and comprehend literature, including stories, dramas, and poetry, in the grades 4–5 text complexity band proficiently, with scaffolding as needed at the high end of the range.

READING FOR INFORMATION / READING COMPREHENSION

Key Ideas and Details:

- 4.RI.1 Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.
- 4.RI.2 Determine the main idea of a text and explain how it is supported by key details; summarize the text.
- **4.RI.3** Explain events, procedures, ideas, or concepts in a historical, scientific, or technical text, including what happened and why, based on specific information in the text.

Craft and Structure:

- 4.RI.4 Determine the meaning of general academic and domain-specific words or phrases in a text relevant to a grade 4 topic or subject area.
- 4.RL5 Describe the overall structure (e.g., chronology, comparison, cause/effect, problem/solution) of events, ideas, concepts, or information in a text or part of a text.
- 4.RI.6 Compare and contrast a firsthand and secondhand account of the same event or topic; describe the differences in focus and the information provided.

Integration of Knowledge and Ideas

- **4.RI.7** Interpret information presented visually, or quantitatively (e.g., in charts, graphs, diagrams, time lines, animations, or interactive elements on Web pages) and explain how the information contributes to an understanding of the text in which it appears.
- 4.RI.8 Explain how an author uses reasons and evidence to support particular points in a text.
- 4.RI.9 Integrate information from two texts on the same topic in order to write or speak about the subject knowledgeably.

Range of Reading and Complexity of Text:

4.RI.10 By the end of year, read and comprehend informational texts, including history/social studies, science, and technical texts, in the grades 4–5 text complexity band proficiently, with scaffolding as necessary at the high end of the range.

READING FOUNDATIONS

Phonics and Word Recognition:

4.RF.3 Know and apply grade-level phonics and word analysis skills in decoding words. Use combined knowledge of all letter-sound correspondences, syllabication patterns, and morphology (e.g., roots and affixes) to read accurately unfamiliar multisyllabic words in context and out of context.

Fluency:

- 4.RF.4 Read with sufficient accuracy and fluency to support comprehension.
 - a. Read grade-level text with purpose and understanding.
 - b. Read grade-level prose and poetry orally with accuracy, appropriate rate, and expression.
 - c. Use context to confirm or self-correct word recognition and understanding, rereading as necessary.

WRITING COMPOSITION, RHETORIC AND PENMANSHIP

Text Types and Purposes:

- 4.W.1 Write opinion pieces on topics or texts, supporting a point of view with reasons and information.
- a. Introduce a topic or text clearly, state an opinion, and create an organizational structure in which related ideas are grouped to support the writer's purpose.
 - b. Provide reasons that are supported by facts and details.
 - c. Link opinion and reasons using words and phrases (e.g., for instance, in order to, in addition).
 - d. Provide a concluding statement or section related to the opinion presented.

- 4.W.2 Write informative/explanatory texts to examine a topic and convey ideas and information clearly.
- a. Introduce a topic clearly and group related information in paragraphs and sections; include formatting (e.g., headings), illustrations, and multimedia when useful to aiding comprehension.
 - b. Develop the topic with facts, definitions, concrete details, quotations, or other information and examples related to the topic.
 - c. Link ideas within categories of information using words and phrases (e.g., another, for example, also, because).
 - d. Use precise language and domain-specific vocabulary to inform about or explain the topic.
 - e. Provide a concluding statement or section related to the information or explanation presented.
- 4.W.3 Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences.
- a. Orient the reader by establishing a situation and introducing a narrator and/or characters; organize an event sequence that unfolds naturally.
 - b. Use dialogue and description to develop experiences and events or show the responses of characters to situations.
 - c. Use a variety of transitional words and phrases to manage the sequence of events.
 - d. Use concrete words and phrases and sensory details to convey experiences and events precisely.
 - e. Provide a conclusion that follows from the narrated experiences or events.

Production and Distribution of Writing:

- **4.W.4** Produce clear and coherent writing in which the development and organization are appropriate to task, purpose, and audience. (Gradespecific expectations for writing types are defined in standards 1–3 above.)
- 4.W.5 With guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, and editing. (Editing for conventions should demonstrate command of Language standards 1–3up to and including grade 4 on page 29.)
- **4.W.6** With some guidance and support from adults, use technology, including the Internet, to produce and publish writing as well as to interact and collaborate with others; demonstrate sufficient command of keyboarding skills to type a minimum of one page in a single sitting.

Research to Build and Present Knowledge:

- **4.W.7** Conduct short research projects that build knowledge through investigation of different aspects of a topic.
- 4.W.8 Recall relevant information from experiences or gather relevant information from print and digital sources; take notes and categorize information, and provide a list of sources.
- 4.W.9 Draw evidence from literary or informational texts to support analysis, reflection, and research.
- a. Apply grade 4 Reading standards to literature (e.g., "Describe in depth a character, setting, or event in a story or drama, drawing on specific details in the text [e.g., a character's thoughts, words, or actions].").
- b. Apply grade 4 Reading standards to informational texts (e.g., "Explain how an author uses reasons and evidence to support particular points in a text").

Range of Writing:

4.W.10 Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

ORAL COMMUNICATION, RHETORIC, AND PUBLIC SPEAKING

Comprehension and Collaboration:

- **4.SL.1** Engage effectively in a range of collaborative discussions (one-on-one. in groups, and teacher-led) with diverse partners on grade 4 topics and texts, building on others' ideas and expressing their own clearly.
- a. Come to discussions prepared, having read or studied required material; explicitly draw on that preparation and other information known about the topic to explore ideas under discussion.
 - **b**. Follow agreed-upon rules for discussions and carry out assigned roles.
- **c.** Pose and respond to specific questions to clarify or follow up on information, and make comments that contribute to the discussion and link to the remarks of others.
 - d. Review the key ideas expressed and explain their own ideas and understanding in light of the discussion.
- **4.SL.2** Paraphrase portions of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.
- **4.SL.3** Identify the reasons and evidence a speaker provides to support particular points.

Presentation of Knowledge and Ideas:

- **4.SL.4** Report on a topic or text, tell a story, or recount an experience in an organized manner, using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace.
- 4.SL.5 Add audio recordings and visual displays to presentations when appropriate to enhance the development of main ideas or themes.
- 4.SL.6 Differentiate between contexts that call for formal English (e.g., presenting ideas) and situations where informal discourse is appropriate (e.g., small-group discussion); use formal English when appropriate to task and situation. (See grade 4 Language standards 1 and 3 for specific expectations.)

SYNTAX, SEMANTICS, ORTHOGRAPHY AND LEXICON

Conventions of Standard English:

- 4.L.1 Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
 - a. Use relative pronouns (who, whose. whom, which. that) and relative adverbs (where. when, why).
 - b. Form and use the progressive (e.g., I was walking; I am walking; I will be walking) verb tenses.
 - c. Use modal auxiliaries (e.g., can, may, must) to convey various conditions.
 - d. Order adjectives within sentences according to conventional patterns (e.g., a small red bag rather than a red small bag).
 - e. Form and use prepositional phrases.
 - f. Produce complete sentences, recognizing and correcting inappropriate fragments and run-ons.*
 - g. Correctly use frequently confused words (e.g., to, too, two; there. their).*
- 4.L.2 Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.
 - a. Use correct capitalization.

- b. Use commas and quotation marks to mark direct speech and quotations from a text.
- c. Use a comma before a coordinating conjunction in a compound sentence.
- d. Spell grade-appropriate words correctly, consulting references as needed.

Knowledge of Language:

- 4.L.3 Use knowledge of language and its conventions when writing, speaking, reading, or listening.
 - a. Choose words and phrases to convey ideas precisely.*
 - b. Choose punctuation for effect.*
- c. Differentiate between contexts that call for formal English (e.g., presenting ideas) and situations where informal discourse is appropriate (e.g., small-group discussion).

Vocabulary Acquisition and Use:

- **4.L.4** Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 4 reading and content, choosing flexibly from a range of strategies.
 - a. Use context (e.g., definitions, examples, or restatements in text) as a clue to the meaning of a word or phrase.
- b. Use common, grade-appropriate Greek and Latin affixes and roots as clues to the meaning of a word (e.g., telegraph, photograph, autograph).
- c. Consult reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation and determine or clarify the precise meaning of key words and phrases.
- 4.L.5 Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.
 - a. Explain the meaning of simple similes and metaphors (e.g., as pretty as a picture) in context.
 - b. Recognize and explain the meaning of common idioms, adages, and proverbs.
- c. Demonstrate understanding of words by relating them to their opposites (antonyms) and to words with similar but not identical meanings (synonyms).
- **4.L.6** Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases, including those that signal precise actions, emotions, or states of being (e.g., quizzed, whined, stammered) and that are basic to a particular topic (e.g., wildlife, conservation, and endangered when discussing animal preservation).

Fifth Grade / A.L.L. Language Arts Aligned to Meet or Exceed Common Core Grade Level Domains / Objectives to be mastered by year-end

<u>Prerequisite Knowledge / Skill reactivation / Retention and Recall:</u> Before providing instruction in the following objectives, the instructor shall assess students' retention and skills relative to objectives articulated for prior grades; and review/reteach if necessary. To satisfy Language Arts requirements for the current grade, students must demonstrate mastery of objectives articulated for prior grades along with those articulated for the current grade.

READING LITERATURE

Key Ideas and Details:

- 5.RL.1 Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text.
- 5.RL.2 Determine a theme of a story, drama, or poem from details in the text, including how characters in a story or drama respond to challenges or how the speaker in a poem reflects upon a topic; summarize the text.
- 5.RL.3 Compare and contrast two or more characters, settings, or events in a story or drama, drawing on specific details in the text (e.g., how characters interact).

Craft and Structure:

- 5.RL.4 Determine the meaning of words and phrases as they are used in a text, including figurative language such as metaphors, hyperbole, personification, anthropomorphism, and similes.
- 5.RL.5 Explain how a series of chapters, scenes, or stanzas fits together to provide the overall structure of a particular story, drama, or poem.
- **5.RL.6** Describe how a narrator's or speaker's point of view influences how events are described. Be able to accurately identify the basic differences between first, second, and third person narration.

Integration of Knowledge and Ideas:

- 5.RL.7 Analyze how visual and multimedia elements contribute to the meaning, tone, or beauty of a text (e.g., graphic novel; multimedia presentation of fiction, folktale, myth, poem).
- 5.RL.9 Compare and contrast stories in the same genre (e.g., mysteries and adventure stories) on their approaches to similar themes and topics.

Range of Reading and Complexity of Text:

5.RL.10 By the end of the year, read and comprehend literature, including stories, dramas, and poetry, at the high end of the grades 4–5 text complexity band independently and proficiently.

Reading Informational

Key Ideas and Details: 5.RI.1 Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text.

5.RI.2 Determine two or more main ideas of a text and explain how they are supported by key details; summarize the text. 5.RI.3 Explain the relationships or interactions between two or more individuals, events, ideas, or concepts in a historical, scientific, or technical text based on specific information in the text.

Craft and Structure: 5.RI.4 Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 5 topic or subject area. 5.RI.5 Compare and contrast the overall structure (e.g., chronology, comparison, classification, cause/effect, problem/solution) of events, ideas, concepts, or information in two or more texts. 5.RI.6 Analyze multiple accounts of the same event or topic, noting important similarities and differences in the point of view they represent.

Integration of Knowledge and Ideas: 5.RI.7 Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently. 5.RI.8 Explain how an author uses reasons and evidence (logos appeals) to support

particular points in a text, identifying which reasons and evidence support which point(s). **5.RI.9** Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably.

Range of Reading and Complexity of Text: 5.RI.10 By the end of the year, read and comprehend informational texts, including history/social studies, science, and technical texts, at the high end of the grades 4–5 text complexity band independently and proficiently.

Reading Foundational

Phonics and Word Recognition: 5.RF.3 Know and apply grade-level phonics and word analysis skills in decoding words. Use combined knowledge of all letter-sound correspondences, syllabication patterns, and morphology (e.g., roots and affixes) to read accurately unfamiliar multisyllabic words in context and out of context.

Fluency: 5.RF.4 Read with sufficient accuracy and fluency to support comprehension.

- a. Read grade-level text with purpose and understanding.
- b. Read grade-level prose and poetry orally with accuracy, appropriate rate and expression.
- c. Use context to confirm or self-correct word recognition and understanding, rereading as necessary.

WRITING COMPOSITION, RHETORIC AND PENMANSHIP

Text Types and Purposes: 5.W.1 Write opinion pieces on topics or texts, supporting a point of view with persuasive reasons and information.

- a. Introduce a topic or text clearly, state an opinion, and create an organizational structure in which ideas are logically grouped to support the writer's purpose.
- **b.** Provide logically ordered reasons that are supported by facts and details.
- c. Link opinion and reasons using words, phrases, and clauses (e.g., consequently, specifically).
- **d.** Provide a concluding statement or section related to the opinion presented.
- e. Demonstrate ability to adjust persuasive strategy, content, and/or tone for various audiences.
- 5.W.2 Write informative/explanatory texts to examine a topic and convey ideas and information clearly.
- a. Introduce a topic clearly, provide a general observation and focus, and group related information logically; include formatting (e.g., headings), illustrations, and multimedia when useful to aiding comprehension.
- b. Develop the topic with facts, definitions, concrete details, quotations, or other information and examples related to the topic.
- c. Link ideas within and across categories of information using words, phrases, and clauses (e.g., in contrast, especially).
- d. Use precise language and domain-specific vocabulary to inform about or explain the topic.
- e. Provide a concluding statement or section related to the information or explanation presented.
- 5.W.3 Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences.
- a. Orient the reader by establishing a situation and introducing a narrator and/or characters; organize an event sequence that unfolds naturally.
- b. Use narrative techniques, such as dialogue, description, and pacing, to develop experiences and events or show the responses of characters to situations.
- c. Use a variety of transitional words, phrases, and clauses to manage the sequence of events.
- d. Use concrete words and phrases and sensory details to convey experiences and events precisely.
- e. Provide a conclusion that follows from the narrated experiences or events.

Production and Distribution of Writing: 5.W.4 Produce clear and coherent writing in which the development and organization are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1–3 above.) 5.W.5 With guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach. (Editing for conventions should demonstrate command of Language standards 1–3up to and including grade 5 on page 29.) 5.W.6 With some guidance and support from adults, use technology, including the Internet, to produce and publish writing as well as to interact and collaborate with others; demonstrate sufficient command of keyboarding skills to type a minimum of two pages in a single sitting.

Research to Build and Present Knowledge: 5.W.7 Conduct short research projects that use several sources to build knowledge through investigation of different aspects of a topic. 5.W.8 Recall relevant information from experiences or gather relevant information from print and digital sources; summarize or paraphrase information in notes and finished work, and provide a list of sources. 5.W.9 Draw evidence from literary or informational texts to support analysis, reflection, and research.

- a. Apply grade 5 Reading standards to literature (e.g., "Compare and contrast two or more characters, settings, or events in a story or a drama. drawing on specific details in the text [e.g., how characters interact]").
- b. Apply grade 5 Reading standards to informational texts (e.g., "Explain how an author uses reasons and evidence to support particular points in a text, identifying which reasons and evidence support which point[s]").

Range of Writing: 5.W.10 Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

ORAL COMMUNICATION, RHETORIC, AND PUBLIC SPEAKING

Comprehension and Collaboration: 5.SL.1 Engage effectively in a range of collaborative discussions (one-on-one. in groups, and teacher-led) with diverse partners on grade 5 topics and texts, building on others' ideas and expressing their own clearly.

- a. Come to discussions prepared, having read or studied required material; explicitly draw on that preparation and other information known about the topic to explore ideas under discussion.
- b. Follow agreed-upon rules for discussions and carry out assigned roles.
- c. Pose and respond to specific questions by making comments that contribute to the discussion and elaborate on the remarks of others.
- d. Review the key ideas expressed and draw conclusions in light of information and knowledge gained from the discussions.
- 5.SL.2 Summarize written a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.
- 5.SL.3 Summarize the points a speaker makes and explain how each claim is supported by reasons and evidence.

Presentation of Knowledge and Ideas: 5.SL.4 Report on a topic or text or present an opinion, sequencing ideas logically and using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace. 5.SL.5 Include multimedia components (e.g., graphics, sound) and visual displays in presentations when appropriate to enhance the development of main ideas or themes. 5.SL.6 Adapt speech to a variety of contexts and tasks, using formal English when appropriate to task and situation. (See grade 5 Language standards 1 and 3 on for specific expectations.)

SYNTAX, SEMANTICS, ORTHOGRAPHY AND LEXICON

Conventions of Standard English: 5.L.1 Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.

- a. Explain the function of conjunctions, prepositions, and interjections in general and their function in particular sentences.
- b. Form and use the perfect (e.g., I had walked; I have walked; I will have walked) verb tenses.
- c. Use verb tense to convey various times, sequences, states, and conditions.
- d. Recognize and correct inappropriate shifts in verb tense.*
- e. Use correlative conjunctions (e.g., either/or, neither/nor).
- 5.L.2 Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.
- a. Use punctuation to separate items in a series.*
- b. Use a comma to separate an introductory element from the rest of the sentence.
- c. Use a comma to set off the words yes and no (e.g., Yes, thank you), to set off a tag question from the rest of the sentence (e.g., It's true. isn't it?), and to indicate direct address (e.g., Is that you, Steve?).
- d. Use underlining, quotation marks, or italies to indicate titles of works.
- e. Spell grade-appropriate words correctly, consulting references as needed.

Knowledge of Language: 5.L.3 Use knowledge of language and its conventions when writing, speaking, reading, or listening.

- a. Expand. Combine, and reduce sentences for meaning, reader/listener interest, and style.
- b. Compare and contrast the varieties of English (e.g., dialects, registers) used in stories, dramas, or poems.

Vocabulary Acquisition and Use: 5.L.4 Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 5 reading and content, choosing flexibly from a range of strategies.

- a. Use context (e.g., cause/effect relationships and comparisons in text) as a clue to the meaning of a word or phrase.
- b. Use common, grade-appropriate Greek and Latin affixes and roots as clues to the meaning of a word (e.g., photograph, photosynthesis).
- 5.L.5 Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.
- a. Interpret figurative language, including similes and metaphors, in context.
- b. Recognize and explain the meaning of common idioms, adages, and proverbs.
- c. Use the relationship between particular words (e.g., synonyms, antonyms, homographs) to better understand each of the words.
- 5.L.6 Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases, including those that signal contrast, addition, and other logical relationships (e.g., however, although, nevertheless, similarly, moreover, in addition).

Sixth Grade / A.L.L. Language Arts Aligned to Meet or Exceed Common Core Grade Level Domains / Objectives to be mastered by year-end

<u>Prerequisite Knowledge / Skill reactivation / Retention and Recall:</u> Before providing instruction in the following objectives, the instructor shall assess students' retention and skills relative to objectives articulated for prior grades; and review/ reteach if necessary. To satisfy Language Arts requirements for the current grade, students must demonstrate mastery of objectives articulated for prior grades along with those articulated for the current grade.

READING LITERATURE

Key Ideas and Details: 6.RL.1 Cite textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text. 6.RL.2 Determine a theme or central idea of a text and how it is conveyed through particular details; provide a summary of the text distinct from personal opinions or judgments. 6.RL.3 Describe how a particular story's or drama's plot unfolds in a series of episodes as well as how the characters respond or change as the plot moves toward a resolution.

Craft and Structure: 6.RL.4 Determine the meaning of words and phrases as they are used in a text, including figurative and connotative meanings; analyze the impact of a specific word choice on meaning and tone. 6.RL.5 Analyze how a particular sentence, chapter, scene, or stanza fits into the overall structure of a text and contributes to the development of the theme, setting, or plot. 6.RL.6 Explain how an author develops the point of view of the narrator or speaker in a text.

Integration of Knowledge and Ideas: 6.RL.7 Compare and contrast the experience of reading a story, drama, or poem to listening to or viewing an audio, video, or live version of the text, including contrasting what they "see" and "hear" when reading the text to what they perceive when they listen or watch. 6.RL.9 Compare and contrast texts in different forms or genres (e.g., stories and poems; historical novels and fantasy stories) in terms of their approaches to similar themes and topics.

Range of Reading and Level of Text Complexity: 6.RL.10 By the end of the year, read and comprehend literature, including stories, dramas, and poems, in the grades 6–8 text complexity band proficiently, with scaffolding as needed at the high end of the range.

READING FOR INFORMATION / READING COMPREHENSION

Key Ideas and Details: 6.RI.1 Cite textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text. 6.RI.2 Determine a central idea of a text and how it is conveyed through particular details; provide a summary of the text distinct from personal opinions or judgments. 6.RI.3 Analyze in detail how a key individual, event, or idea is introduced, illustrated, and elaborated in a text (e.g., through examples or anecdotes).

Craft and Structure: 6.RI.4 Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings. 6.RI.5 Analyze how a particular sentence, paragraph, chapter, or section fits into the overall structure of a text and contributes to the development of the ideas. 6.RI.6 Determine an author's point of view or purpose in a text and explain how it is conveyed in the text.

Integration of Knowledge and Ideas: 6.RI.7 Integrate information presented in different media or formats (e.g., visually, quantitatively) as well as in words to develop a coherent understanding of a topic or issue. 6.RI.8 Trace and evaluate the argument and specific claims in a text, distinguishing claims that are supported by reasons and evidence from claims that are not. 6.RI.9 Compare and contrast one author's presentation of events with that of another (e.g., a memoir written by and a biography on the same person).

Range of Reading and Level of Text Complexity: 6.RI.10 By the end of the year, read and comprehend literary nonfiction in the grades 6–8 text complexity band proficiently, with scaffolding as needed at the high end of the range.

WRITING COMPOSITION, AND RHETORIC

Text Types and Purposes: 6.W.1 Write arguments to support claims with clear reasons and relevant evidence.

- a. Introduce claim(s) and organize the reasons and evidence clearly.
- b. Support claim(s) with clear reasons and relevant evidence, using credible sources and demonstrating an understanding of the topic or text.
- c. Use words, phrases, and clauses to clarify the relationships among claim(s) and reasons.
- d. Establish and maintain a formal style.
- e. Provide a concluding statement or section that follows from the argument presented.
- f. Use a persuasive combination of ethos, pathos, and logos appeals for the selected audience
- 6.W.2 Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.
- a. Introduce a topic; organize ideas, concepts, and information, using strategies such as definition, classification, comparison/contrast, and cause/effect; include formatting (e.g., headings), graphics (e.g., charts, tables), and multimedia when useful to aiding comprehension.
- b. Develop the topic with relevant facts, definitions, concrete details, quotations, or other information and examples.
- c. Use appropriate transitions to clarify the relationships among ideas and concepts.
- d. Use precise language and domain-specific vocabulary to inform about or explain the topic.
- e. Establish and maintain a formal style.
- f. Provide a concluding statement or section that follows from the information or explanation presented.
- 6.W.3 Write narratives to develop real or imagined experiences or events using effective technique. relevant descriptive details, and well-structured event sequences.
- a. Engage and orient the reader by establishing a context and introducing a narrator and/or characters; organize an event sequence that unfolds naturally and logically.
- b. Use narrative techniques, such as dialogue, pacing, and description to develop experiences, events, and/or characters.
- c. Use a variety of transition words, phrases, and clauses to convey sequence and signal shifts from one time frame or setting to another.
- d. Use precise words and phrases, relevant descriptive details, and sensory language to convey experiences and events.
- e. Provide a conclusion that follows from the narrated experiences or events.
- f. Use figurative language, such as metaphors and simile, to add interest to the prose.

Production and Distribution of Writing: 6.W.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1–3 above.) 6.W.5 With some guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach. (Editing for conventions should demonstrate command of Language standards 1–3up to and including grade 6 on page53.) 6.W.6 Use technology, including the Internet, to produce and publish writing as well as to interact and collaborate with others; demonstrate sufficient command of keyboarding skills to type a minimum of three pages in a single sitting.

Research to Build and Present Knowledge: 6.W.7 Conduct short research projects to answer a question, drawing on several sources and refocusing the inquiry when appropriate. 6.W.8 Gather relevant information from multiple print and digital sources; assess the credibility of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and providing basic bibliographic information for sources

- 6.W.9 Draw evidence from literary or informational texts to support analysis, reflection, and research.
- **a.** Apply grade 6 Reading standards to literature (e.g., "Compare and contrast texts in different forms or genres [e.g., stories and poems; historical novels and fantasy stories] in terms of their approaches to similar themes and topics").
- **b.** Apply grade 6 Reading standards to literary nonfiction (e.g., "Trace and evaluate the argument and specific claims in a text, distinguishing claims that are supported by reasons and evidence from claims that are not").

Range of Writing: 6.W.10 Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

ORAL COMMUNICATION, RHETORIC, AND PUBLIC SPEAKING

Comprehension and Collaboration: 6.SL.1 Engage effectively in a range of collaborative discussions (one-on-one. in groups, and teacher-led) with diverse partners on grade 6 topics, texts, and issues, building on others' ideas and expressing their own clearly.

- a. Come to discussions prepared, having read or studied required material; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion.
- b. Follow rules for collegial discussions, set specific goals and deadlines, and define individual roles as needed.
- c. Pose and respond to specific questions with elaboration and detail by making comments that contribute to the topic. text, or issue under discussion
- d. Review the key ideas expressed and demonstrate understanding of multiple perspectives through reflection and paraphrasing.
- **6.SL.2** Interpret information presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how it contributes to a topic, text, or issue under study. **6.SL.3** Delineate a speaker's argument and specific claims, distinguishing claims that are supported by reasons and evidence from claims that are not.

Presentation of Knowledge and Ideas: 6.SL.4 Present claims and findings, sequencing ideas logically and using pertinent descriptions, facts, and details to accentuate main ideas or themes; use appropriate eye contact, adequate volume, and clear pronunciation. 6.SL.5 Include multimedia components (e.g., graphics, images, music, sound) and visual displays in presentations to clarify information. 6.SL.6 Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate. (See grade-6-Language standards 1 and 3 for specific expectations.)

SYNTAX, SEMANTICS, ORTHOGRAPHY AND LEXICON

Conventions of Standard English: 6.L.1 Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.

- a. Ensure that pronouns are in the proper case (subjective. objective. possessive).
- b. Use intensive pronouns (e.g., myself. ourselves).
- c. Recognize and correct inappropriate shifts in pronoun number and person.*

- d. Recognize and correct vague pronouns (i.e., ones with unclear or ambiguous antecedents).*
- e. Recognize variations from standard English in their own and others' writing and speaking, and identify and use strategies to improve expression in conventional language.*
- 6.L.2 Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.
- a. Use punctuation (commas, parentheses, dashes) to set off nonrestrictive/parenthetical elements.*
- b. Spell correctly.

Knowledge of Language: 6.L.3 Use knowledge of language and its conventions when writing, speaking, reading, or listening.

- a. Choose language that expresses ideas precisely and concisely, recognizing and eliminating wordiness and redundancy.*
- **b.** Maintain consistency in style and tone.*

Vocabulary Acquisition and Use: 6.L.4 Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 6 reading and content, choosing flexibly from a range of strategies.

- a. Use context (e.g., the overall meaning of a sentence or paragraph; a word's position or function in a sentence) as a clue to the meaning of a word or phrase.
- b. Use common, grade-appropriate Greek or Latin affixes and roots as clues to the meaning of a word (e.g., audience, auditory, audible).
- c. Consult reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation of a word or determine or clarify its precise meaning or its part of speech.
- d. Verify the preliminary determination of the meaning of a word or phrase (e.g., by checking the inferred meaning in context or in a dictionary).
- 6.L.5 Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.
- a. Interpret figures of speech (e.g., personification) in context.
- b. Use the relationship between particular words (e.g., cause/effect, part/whole. item/category) to better understand each of the words.
- c. Distinguish among the connotations (associations) of words with similar denotations (definitions) (e.g., stingy, scrimping. economical, unwasteful, thrifty).
- 6.L.6 Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases; gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.

READING HISTORY

Key Ideas and Details: 6-8.RH.1 Cite specific textual evidence to support analysis of primary and secondary sources. 6-8.RH.2 Determine the central ideas or information of a primary or secondary source; provide an accurate summary of the source distinct from prior knowledge or opinions. 6-8.RH.3

Identify key steps in a text's description of a process related to history/social studies (e.g., how a bill becomes law, how interest rates are raised or lowered).

Craft and Structure: 6-8.RH.4 Determine the meaning of words and phrases as they are used in a text, including vocabulary specific to domains related to history/social studies. 6-8.RH.5 Describe how a text presents information (e.g., sequentially, comparatively, causally). 6-8.RH.6 Identify aspects of a text that reveal an author's point of view or purpose (e.g., loaded language, inclusion or avoidance of particular facts).

Integration of Knowledge and Ideas: 6-8.RH.7 Integrate visual information (e.g., in charts, graphs, photographs, videos, or maps) with other information in print and digital texts. 6-8.RH.8 Distinguish among fact, opinion, and reasoned judgment in a text. 6-8.RH.9 Analyze the relationship between a primary and secondary source on the same topic.

Range of Reading and Level of Text Complexity: 6-8.RH.10 By the end of grade 8, read and comprehend history/social studies texts in the grades 6–8 text complexity band independently and proficiently.

READING SCIENCE AND TECHNICAL WRITING

Key Ideas and Details: 6-8.RST.1 Cite specific textual evidence to support analysis of science and technical texts. 6-8.RST.2 Determine the central ideas or conclusions of a text; provide an accurate summary of the text distinct from prior knowledge or opinions. 6-8.RST.3 Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.

Craft and Structure: 6-8.RST.4 Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6–8 texts and topics. 6-8.RST.5 Analyze the structure an author uses to organize a text, including how the major sections contribute to the whole and to an understanding of the topic. 6-8.RST.6 Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text.

Integration of Knowledge and Ideas: 6-8.RST.7 Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table). 6-8.RST.8 Distinguish among facts, reasoned judgment based on research findings, and speculation in a text. 6-8.RST.9 Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.

Range of Reading and Level of Text Complexity: 6-8.RST.10 By the end of grade 8, read and comprehend science/technical texts in the grades 6–8 text complexity band independently and proficiently.

Writing History

Text Types and Purposes: 6-8.WHST.1 Write arguments focused on discipline-specific content.

- a. Introduce claim(s) about a topic or issue. acknowledge and distinguish the claim(s) from alternate or opposing claims, and organize the reasons and evidence logically.
- b. Support claim(s) with logical reasoning and relevant, accurate data and evidence that demonstrate an understanding of the topic or text, using credible sources.
- c. Use words, phrases, and clauses to create cohesion and clarify the relationships among claim(s), counterclaims, reasons, and evidence.
- d. Establish and maintain a formal style.
- e. Provide a concluding statement or section that follows from and supports the argument presented.
- 6-8.WHST.2 Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.
- a. Introduce a topic clearly, previewing what is to follow; organize ideas, concepts, and information into broader categories as appropriate to achieving purpose; include formatting (e.g., headings), graphics (e.g., charts, tables), and multimedia when useful to aiding comprehension.

- b. Develop the topic with relevant, well-chosen facts, definitions, concrete details, quotations, or other information and examples.
- c. Use appropriate and varied transitions to create cohesion and clarify the relationships among ideas and concepts.
- d. Use precise language and domain-specific vocabulary to inform about or explain the topic.
- e. Establish and maintain a formal style and objective tone.
- f. Provide a concluding statement or section that follows from and supports the information or explanation presented.

Production and Distribution of Writing: 6-8.WHST.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. 6-8.WHST.5 With some guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on how well purpose and audience have been addressed. 6-8.WHST.6 Use technology, including the Internet, to produce and publish writing and present the relationships between information and ideas clearly and efficiently.

Research to Build and Present Knowledge: 6-8.WHST.7 Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration. 6-8.WHST.8 Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility, persuasive appeal, and accuracy of each source; quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation. 6-8.WHST.9 Draw evidence from informational texts to support analysis reflection, and research.

Range of Writing: 6-8.WHST.10 Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

Seventh Grade / A.L.L. Language Arts Aligned to Meet or Exceed Common Core Grade Level Domains / Objectives to be mastered by year-end

<u>Prerequisite Knowledge / Skill reactivation / Retention and Recall:</u> Before providing instruction in the following objectives, the instructor shall assess students' retention and skills relative to objectives articulated for prior grades; and review/ reteach if necessary. To satisfy Language Arts requirements for the current grade, students must demonstrate mastery of objectives articulated for prior grades along with those articulated for the current grade.

READING LITERATURE

Key Ideas and Details: 7.RL.1 Cite several pieces of textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text. 7.RL.2 Determine a theme or central idea of a text and analyze its development over the course of the text; provide an objective summary of the text. 7.RL.3 Analyze how particular elements of a story or drama interact (e.g., how setting shapes the characters or plot).

Craft and Structure: 7.RL.4 Determine the meaning of words and phrases as they are used in a text, including figurative and connotative meanings; analyze the impact of rhymes and other repetitions of sounds (e.g., alliteration, assonance, consonance, end rhyme, or meter) on a specific verse or stanza of a poem or section of a story or drama.

7.RL.5 Analyze how a drama's or poem's form or structure (e.g., soliloquy, sonnet) contributes to its meaning. 7.RL.6 Analyze how an author develops and contrasts the points of view of different characters or narrators in a text.

Integration of Knowledge and Ideas: 7.RL.7 Compare and contrast a story, drama, or poem to its audio, filmed, staged, or multimedia version, analyzing the effects of techniques unique to each medium (e.g., lighting, sound, color, or camera focus and angles in a film). 7.RL.9 Compare and contrast a fictional portrayal of a time, place, or character and a historical account of the same period as a means of understanding how authors of fiction use or alter history.

Range of Reading and Level of Text Complexity: 7.RL.10 By the end of the year, read and comprehend literature, including stories, dramas, and poems, in the grades 6–8 text complexity band proficiently, with scaffolding as needed at the high end of the range.

READING FOR INFORMATION / READING COMPREHENSION

Key Ideas and Details: 7.RI.1 Cite several pieces of textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text. 7. RI.2 Determine two or more central ideas in a text and analyze their development over the course of the text; provide an objective summary of the text. 7.RI.3 Analyze the interactions between individuals, events, and ideas in a text (e.g., how ideas influence individuals or events, or how individuals influence ideas or events).

Craft and Structure: 7.RI.4 Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze the impact of a specific word choice on meaning and tone. 7.RI.5 Analyze the structure an author uses to organize a text, including how the major sections contribute to the whole and to the development of the ideas. 7.RI.6 Determine an author's point of view or purpose in a text and analyze how the author distinguishes his or her position from that of others.

Integration of Knowledge and Ideas: 7.RI.7 Compare and contrast a text to an audio, video, or multimedia version of the text, analyzing each medium's portrayal of the subject (e.g., how the delivery of a speech affects the impact of the words). 7.RI.8 Trace and evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is relevant and sufficient to support the claims. 7.RI.9 Analyze how two or more authors writing about the same topic shape their presentations of key information by emphasizing different evidence or advancing different interpretations of facts.

Range of Reading and Level of Text Complexity: 7.RI.10 By the end of the year, read and comprehend literary nonfiction in the grades 6–8 text complexity band proficiently, with scaffolding as needed at the high end of the range.

WRITING COMPOSITION, AND RHETORIC

Text Types and Purposes: 7.W.1 Write arguments to support claims with clear reasons and relevant evidence.

- a. Introduce claim(s), acknowledge alternate or opposing claims, and organize the reasons and evidence logically.
- b. Support claim(s) with logical reasoning and relevant evidence, using accurate, credible sources and demonstrating an understanding of the topic or text.
- c. Use words, phrases, and clauses to create cohesion and clarify the relationships among claim(s), reasons, and evidence.
- d. Establish and maintain a formal style.
- e. Provide a concluding statement or section that follows from and supports the argument presented.
- f. Demonstrate an understanding of persuasive appeals by utilizing a combination of ethos, pathos, and logos appropriate for the selected audience.

- 7.W.2 Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.
- a. Introduce a topic clearly, previewing what is to follow; organize ideas, concepts, and information, using strategies such as definition, classification, comparison/contrast, and cause/effect; include formatting (e.g., headings), graphics (e.g., charts, tables), and multimedia when useful to aiding comprehension.
- b. Develop the topic with relevant facts, definitions, concrete details, quotations, or other information and examples.
- c. Use appropriate transitions to create cohesion and clarify the relationships among ideas and concepts.
- d. Use precise language and domain-specific vocabulary to inform about or explain the topic.
- e. Establish and maintain a formal style.
- f. Provide a concluding statement or section that follows from and supports the information or explanation presented.
- 7.W.3 Write narratives to develop real or imagined experiences or events using effective technique, relevant descriptive details, and well-structured event sequences.
- a. Engage and orient the reader by establishing a context and point of view and introducing a narrator and/or characters; organize an event sequence that unfolds naturally and logically.
- b. Use narrative techniques, such as dialogue, pacing, and description, to develop experiences, events, and/or characters.
- c. Use a variety of transition words, phrases, and clauses to convey sequence and signal shifts from one time frame or setting to another.
- d. Use precise words and phrases, relevant descriptive details, and sensory language to capture the action and convey experiences and events.
- e. Provide a conclusion that follows from and reflects on the narrated experiences or events.

Production and Distribution of Writing: 7.W.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1–3 above.) 7.W.5 With some guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on how well purpose and audience have been addressed. (Editing for conventions should demonstrate command of Language standards 1–3 up to and including grade 7 on page 53.) 7.W.6 Use technology, including the Internet, to produce and publish writing and link to and cite sources as well as to interact and collaborate with others, including linking to and citing sources.

Research to Build and Present Knowledge: 7.W.7 Conduct short research projects to answer a question, drawing on several sources and generating additional related, focused questions for further research and investigation. 7.W.8 Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation.

- 7.W.9 Draw evidence from literary or informational texts to support analysis, reflection, and research.
- a. Apply grade 7 Reading standards to literature (e.g., "Compare and contrast a fictional portrayal of a time, place, or character and a historical account of the same period as a means of understanding how authors of fiction use or alter history").
- b. Apply grade 7 Reading standards to literary nonfiction (e.g. "Trace and evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is relevant and sufficient to support the claims").

Range of Writing: 7.W.10 Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

ORAL COMMUNICATION, RHETORIC, AND PUBLIC SPEAKING

Comprehension and Collaboration: 7.SL.1 Engage effectively in a range of collaborative discussions (one-on-one. in groups, and teacher-led) with diverse partners on grade 7 topics, texts, and issues, building on others' ideas and expressing their own clearly.

- a. Come to discussions prepared, having read or researched material under study; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion.
- b. Follow rules for collegial discussions, track progress toward specific goals and deadlines, and define individual roles as needed.
- c. Pose questions that elicit elaboration and respond to others' questions and comments with relevant observations and ideas that bring the discussion back on topic as needed.
- d. Acknowledge new information expressed by others and, when warranted, modify their own views.
- **7.SL.2** Analyze the main ideas and supporting details presented in diverse media and formats (e.g., visually, quantitatively, and orally) and explain how the ideas clarify a topic, text, or issue under study. **7.SL.3** Delineate a speaker's argument and specific claims, evaluating the soundness of the reasoning and the relevance and sufficiency of the evidence.

Presentation of Knowledge and Ideas: 7.SL.4 Present claims and findings, emphasizing salient points in a focused, coherent manner with pertinent descriptions, facts, details, and examples; use appropriate eye contact, adequate volume, and clear pronunciation. 7.SL.6 Include multimedia components and visual displays in presentations to clarify claims and findings and emphasize salient points. 7.SL.6 Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate. (See grade 7 Language standards 1 and 3 on page 53 for specific expectations.)

SYNTAX, SEMANTICS, ORTHOGRAPHY AND LEXICON

Conventions of Standard English: 7.L.1 Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.

- **a.** Explain the function of phrases and clauses in general and their function in specific sentences.
- b. Choose among simple. compound. complex, and compound-complex sentences to signal differing relationships among ideas.
- c. Place phrases and clauses within a sentence, recognizing and correcting misplaced, squinting, and dangling modifiers.*
- 7.L.2 Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.
- a. Use a comma to separate coordinate adjectives (e.g., "It was a fascinating, enjoyable movie" but not "He wore an old[, green shirt").
- b. Spell correctly.

Knowledge of Language: 7.L.3 Use knowledge of language and its conventions when writing, speaking, reading, or listening. Choose language that expresses ideas precisely and concisely, recognizing and eliminating wordiness and redundancy.*

Vocabulary Acquisition and Use: 7.L.4 Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 7 reading and content, choosing flexibly from a range of strategies.

- a. Use context (e.g., the overall meaning of a sentence or paragraph; a word's position or function in a sentence) as a clue to the meaning of a word or phrase.
- b. Use common, grade-appropriate Greek or Latin affixes and roots as clues to the meaning of a word (e.g., belligerent, bellicose. rebel).
- c. Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation of a word or determine or clarify its precise meaning or its part of speech.
- d. Verify the preliminary determination of the meaning of a word or phrase (e.g., by checking the inferred meaning in context or in a dictionary).
- 7.L.5 Demonstrate understanding of figurative language. word relationships, and nuances in word meanings.
- a. Interpret figures of speech (e.g., literary, biblical, and mythological allusions) in context.
- b. Use the relationship between particular words (e.g., synonym/antonym, analogy) to better understand each of the words.
- c. Distinguish among the connotations (associations) of words with similar denotations (definitions) (e.g., refined. respectful, polite. diplomatic. condescending).
- 7.L.6 Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases; gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.

Reading History

Key Ideas and Details: 6-8.RH.1 Cite specific textual evidence to support analysis of primary and secondary sources. 6-8.RH.2 Determine the central ideas or information of a primary or secondary source; provide an accurate summary of the source distinct from prior knowledge or opinions. 6-8.RH.3

Identify key steps in a text's description of a process related to history/social studies (e.g., how a bill becomes law, how interest rates are raised or lowered).

Craft and Structure: 6-8.RH.4 Determine the meaning of words and phrases as they are used in a text, including vocabulary specific to domains related to history/social studies. 6-8.RH.5 Describe how a text presents information (e.g., sequentially, comparatively, causally). 6-8.RH.6 Identify aspects of a text that reveal an author's point of view or purpose (e.g., loaded language, inclusion or avoidance of particular facts).

Integration of Knowledge and Ideas: 6-8.RH.7 Integrate visual information (e.g., in charts, graphs, photographs, videos, or maps) with other information in print and digital texts. 6-8.RH.8 Distinguish among fact, opinion, and reasoned judgment in a text. 6-8.RH.9 Analyze the relationship between a primary and secondary source on the same topic.

Range of Reading and Level of Text Complexity: 6-8.RH.10 By the end of grade 8, read and comprehend history/social studies texts in the grades 6–8 text complexity band independently and proficiently.

Reading Science and Technical

Key Ideas and Details: 6-8.RST.1 Cite specific textual evidence to support analysis of science and technical texts. 6-8.RST.2 Determine the central ideas or conclusions of a text; provide an accurate summary of the text distinct from prior knowledge or opinions. 6-8.RST.3 Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.

Craft and Structure: 6-8.RST.4 Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6–8 texts and topics. 6-8.RST.5 Analyze the structure an author uses to organize a text, including how the major sections contribute to the whole and to an understanding of the topic. 6-8.RST.6 Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text.

Integration of Knowledge and Ideas: 6-8.RST.7 Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table). 6-8.RST.8 Distinguish among facts, reasoned judgment based on research findings, and speculation in a text. 6-8.RST.9 Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.

Range of Reading and Level of Text Complexity: 6-8.RST.10 By the end of grade 8, read and comprehend science/technical texts in the grades 6–8 text complexity band independently and proficiently.

Writing History

Text Types and Purposes: 6-8.WHST.1 Write arguments focused on discipline-specific content.

- **a.** Introduce claim(s) about a topic or issue, acknowledge and distinguish the claim(s) from alternate or opposing claims, and organize the reasons and evidence logically.
- b. Support claim(s) with logical reasoning and relevant, accurate data and evidence that demonstrate an understanding of the topic or text, using credible sources.
- c. Use words, phrases, and clauses to create cohesion and clarify the relationships among claim(s), counterclaims, reasons, and evidence.
- d. Establish and maintain a formal style.
- e. Provide a concluding statement or section that follows from and supports the argument presented.
- **6-8.WHST.2** Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.
- a. Introduce a topic clearly, previewing what is to follow; organize ideas, concepts, and information into broader categories as appropriate to achieving purpose; include formatting (e.g., headings), graphics (e.g., charts, tables), and multimedia when useful to aiding comprehension.
- b. Develop the topic with relevant, well-chosen facts, definitions, concrete details, quotations, or other information and examples.
- c. Use appropriate and varied transitions to create cohesion and clarify the relationships among ideas and concepts.
- d. Use precise language and domain-specific vocabulary to inform about or explain the topic.
- e. Establish and maintain a formal style and objective tone.
- f. Provide a concluding statement or section that follows from and supports the information or explanation presented.

Production and Distribution of Writing: 6-8.WHST.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. 6-8.WHST.5 With some guidance and support from peers and adults, develop and strengthen writing as

needed by planning, revising, editing, rewriting, or trying a new approach, focusing on how well purpose and audience have been addressed. 6-8.WHST.6 Use technology, including the Internet, to produce and publish writing and present the relationships between information and ideas clearly and efficiently.

Research to Build and Present Knowledge: 6-8.WHST.7 Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration. 6-8.WHST.8 Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation. 6-8.WHST.9 Draw evidence from informational texts to support analysis reflection, and research.

Range of Writing: 6-8.WHST.10 Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

Eighth Grade / A.L.L. Language Arts Aligned to Meet or Exceed Common Core Grade Level Domains / Objectives to be mastered by year-end

<u>Prerequisite Knowledge / Skill reactivation / Retention and Recall:</u> Before providing instruction in the following objectives, the instructor shall assess students' retention and skills relative to objectives articulated for prior grades; and review/ reteach if necessary. To satisfy Language Arts requirements for the current grade, students must demonstrate mastery of objectives articulated for prior grades along with those articulated for the current grade.

READING LITERATURE

Key Ideas and Details: 8.RL.1 Cite the textual evidence that most strongly supports an analysis of what the text says explicitly as well as inferences drawn from the text. 8.RL.2 Determine a theme or central idea of a text and analyze its development over the course of the text, including its relationship to the characters, setting, and plot; provide an objective summary of the text. 8.RL.3 Analyze how particular lines of dialogue or incidents in a story or drama propel the action, reveal aspects of a character, or provoke a decision.

Craft and Structure: 8.RL.4 Determine the meaning of words and phrases as they are used in a text, including figurative and connotative meanings; analyze the impact of specific word choices on meaning, atmosphere, mood, and tone, including analogies or allusions to other texts. 8.RL.5 Compare and contrast the structure of two or more texts and analyze how the differing structure of each text contributes to its meaning and style. 8.RL.6 Analyze how differences in the points of view of the characters and the audience or reader (e.g., created through the use of dramatic irony) create such effects as suspense or humor.

Integration of Knowledge and Ideas: 8.RL.7 Analyze the extent to which a filmed or live production of a story or drama stays faithful to or departs from the text or script, evaluating the choices made by the director or actors. 8.RL.9 Analyze how a modern work of fiction draws on themes, patterns of events, or character types from myths, traditional stories, or religious works such as the Bible, including describing how the material is rendered new.

Range of Reading and Level of Text Complexity: 8.RL.10 By the end of the year, read and comprehend literature, including stories, dramas, and poems, at the high end of grades 6–8 text complexity band independently and proficiently.

READING FOR INFORMATION / READING COMPREHENSION

Key Ideas and Details: 8.RI.1 Cite the textual evidence that most strongly supports an analysis of what the text says explicitly as well as inferences drawn from the text. 8.RI.2 Determine a central idea of a text and analyze its development over the course of the text, including its relationship to supporting ideas; provide an objective summary of the text. 8.RI.3 Analyze how a text makes connections among and distinctions between individuals, ideas, or events (e.g., through comparisons, analogies, or categories).

Craft and Structure: 8.RI.4 Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze the impact of specific word choices on meaning and tone, including analogies or allusions to other texts. 8.RI.5 Analyze in detail the structure of a specific paragraph in a text, including the role of particular sentences in developing and refining a key concept. 8.RI.6 Determine an author's point of view or purpose in a text and analyze how the author acknowledges and responds to conflicting evidence or viewpoints.

Integration of Knowledge and Ideas: 8.RI.7 Evaluate the advantages and disadvantages of using different mediums (e.g., print or digital text, video, multimedia) to present a particular topic or idea. 8.RI.8 Delineate and evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is relevant and sufficient; recognize when irrelevant evidence is introduced. 8.RI.9 Analyze a case in which two or more texts provide conflicting information on the same topic and identify where the texts disagree on matters of fact or interpretation. 8.RI.10 Identify the use of satire, sarcasm, and fallacy within a text. Evaluate how these devices impact the text's overall validity and persuasiveness.

Range of Reading and Level of Text Complexity: 8.RI.10 By the end of the year, read and comprehend literary nonfiction at the high end of the grades 6–8 text complexity band independently and proficiently.

WRITING COMPOSITION, AND RHETORIC

Text Types and Purposes: 8.W.1 Write arguments to support claims with clear reasons and relevant evidence.

- a. Introduce claim(s), acknowledge and distinguish the claim(s) from alternate or opposing claims, and organize the reasons and evidence logically.
- b. Support claim(s) with logical reasoning and relevant evidence, using accurate, credible sources and demonstrating an understanding of the topic or text.
- c. Use words, phrases, and clauses to create cohesion and clarify the relationships among claim(s), counterclaims, reasons, and evidence.
- d. Establish and maintain a formal style.
- e. Provide a concluding statement or section that follows from and supports the argument presented.
- 8.W.2 Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.
- a. Introduce a topic clearly, previewing what is to follow; organize ideas, concepts, and information into broader categories; include formatting (e.g., headings), graphics (e.g., charts, tables), and multimedia when useful to aiding comprehension.
- b. Develop the topic with relevant, well-chosen facts, definitions, concrete details, quotations, or other information and examples.
- c. Use appropriate and varied transitions to create cohesion and clarify the relationships among ideas and concepts.

- d. Use precise language and domain-specific vocabulary to inform about or explain the topic.
- e. Establish and maintain a formal style.
- f. Provide a concluding statement or section that follows from and supports the information or explanation presented.
- 8.W.3 Write narratives to develop real or imagined experiences or events using effective technique, relevant descriptive details, and well-structured event sequences.
- a. Engage and orient the reader by establishing a context and point of view and introducing a narrator and/or characters; organize an event sequence that unfolds naturally and logically.
- b. Use narrative techniques, such as dialogue, pacing, description, and reflection, to develop experiences, events, and/or characters.
- c. Use a variety of transition words, phrases, and clauses to convey sequence, signal shifts from one time frame or setting to another, and show the relationships among experiences and events.
- d. Use precise words and phrases, relevant descriptive details, and sensory language to capture the action and convey experiences and events.
- e. Provide a conclusion that follows from and reflects on the narrated experiences or events.
- f. Use parallelism to enhance the style of written prose.

Production and Distribution of Writing: 8.W.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1–3 above.) 8.W.5 With some guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on how well purpose and audience have been addressed. (Editing for conventions should demonstrate command of Language standards 1–3 up to and including grade 8 on page 53.) 8.W.6 Use technology, including the Internet, to produce and publish writing and present the relationships between information and ideas efficiently as well as to interact and collaborate with others.

Research to Build and Present Knowledge: 8.W.7 Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration. 8.W.8 Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation.

- 8.W.9 Draw evidence from literary or informational texts to support analysis, reflection, and research.
- a. Apply grade 8 Reading standards to literature (e.g., "Analyze how a modern work of fiction draws on themes, patterns of events, or character types from myths, traditional stories, or religious works such as the Bible, including describing how the material is rendered new").
- b. Apply grade 8 Reading standards to literary nonfiction (e.g., "Delineate and evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is relevant and sufficient; recognize when irrelevant evidence is introduced").

Range of Writing: 8.W.10 Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

ORAL COMMUNICATION, RHETORIC, AND PUBLIC SPEAKING

Comprehension and Collaboration: 8.SL.1 Engage effectively in a range of collaborative discussions (one-on-one. in groups, and teacher-led) with diverse partners on grade 8 topics, texts, and issues, building on others' ideas and expressing their own clearly.

- a. Come to discussions prepared, having read or researched material under study; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion.
- b. Follow rules for collegial discussions and decision-making, track progress toward specific goals and deadlines, and define individual roles as needed.
- c. Pose questions that connect the ideas of several speakers and respond to others' questions and comments with relevant evidence, observations, and ideas.
- d. Acknowledge new information expressed by others, and. when warranted, qualify or justify their own views in light of the evidence presented.
- **8.SL.2** Analyze the purpose of information presented in diverse media and formats (e.g., visually, quantitatively, orally) and evaluate the motives (e.g., social, commercial, political) behind its presentation. **8.SL.3** Delineate a speaker's argument and specific claims, evaluating the soundness of the reasoning and relevance and sufficiency of the evidence and identifying when irrelevant evidence is introduced.

Presentation of Knowledge and Ideas: 8.SL.4 Present claims and findings, emphasizing salient points in a focused, coherent manner with relevant evidence, sound valid reasoning, and well-chosen details; use appropriate eye contact, adequate volume, and clear pronunciation. 8.SL.5 Integrate multimedia and visual displays into presentations to clarify information, strengthen claims and evidence, and add interest. 8.SL.6 Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate. (See grade 8 Language standards 1 and 3 on page 53 for specific expectations.)

SYNTAX, SEMANTICS, ORTHOGRAPHY AND LEXICON

Conventions of Standard English: 8.L.1 Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.

- a. Explain the function of verbals (gerunds, participles, infinitives) in general and their function in particular sentences.
- **b**. Form and use verbs in the active and passive voice.
- c. Form and use verbs in the indicative, imperative, interrogative, conditional, and subjunctive mood.
- d. Recognize and correct inappropriate shifts in verb voice and mood.*
- 8.L.2 Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.
- a. Use punctuation (comma. ellipsis, dash) to indicate a pause or break.
- b. Use an ellipsis to indicate an omission.
- c. Spell correctly.

Knowledge of Language: 8.L.3 Use knowledge of language and its conventions when writing, speaking, reading, or listening. Use verbs in the active and passive voice and in the conditional and subjunctive mood to achieve particular effects (e.g., emphasizing the actor or the action; expressing uncertainty or describing a state contrary to fact). Demonstrate an awareness of parallelism, including the ability to create original passages that fit the specific pattern of chiasmus or antithesis.

Vocabulary Acquisition and Use: 8.L.4 Determine or clarify the meaning of unknown and multiple-meaning words or phrases based on grade 8 reading and content, choosing flexibly from a range of strategies.

- a. Use context (e.g., the overall meaning of a sentence or paragraph; a word's position or function in a sentence) as a clue to the meaning of a word or phrase.
- b. Use common, grade-appropriate Greek or Latin affixes and roots as clues to the meaning of a word (e.g., precede. recede. secede).
- c. Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation of a word or determine or clarify its precise meaning or its part of speech.
- d. Verify the preliminary determination of the meaning of a word or phrase (e.g., by checking the inferred meaning in context or in a dictionary).
- 8.L.5 Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.
- a. Interpret figures of speech (e.g. verbal irony, puns, synecdoche, metonymy) in context.
- b. Use the relationship between particular words to better understand each of the words.
- c. Distinguish among the connotations (associations) of words with similar denotations (definitions) (e.g., bullheaded. willful, firm, persistent, and resolute).
- **8.L.6** Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases; gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.

Reading History

Key Ideas and Details: 6-8.RH.1 Cite specific textual evidence to support analysis of primary and secondary sources. 6-8.RH.2 Determine the central ideas or information of a primary or secondary source; provide an accurate summary of the source distinct from prior knowledge or opinions. 6-8.RH.3

Identify key steps in a text's description of a process related to history/social studies (e.g., how a bill becomes law, how interest rates are raised or lowered).

Craft and Structure: 6-8.RH.4 Determine the meaning of words and phrases as they are used in a text, including vocabulary specific to domains related to history/social studies. 6-8.RH.5 Describe how a text presents information (e.g., sequentially, comparatively, causally). 6-8.RH.6 Identify aspects of a text that reveal an author's point of view or purpose (e.g., loaded language, inclusion or avoidance of particular facts).

Integration of Knowledge and Ideas: 6-8.RH.7 Integrate visual information (e.g., in charts, graphs, photographs, videos, or maps) with other information in print and digital texts. 6-8.RH.8 Distinguish among fact, opinion, and reasoned judgment in a text. 6-8.RH.9 Analyze the relationship between a primary and secondary source on the same topic.

Range of Reading and Level of Text Complexity: 6-8.RH.10 By the end of grade 8, read and comprehend history/social studies texts in the grades 6–8 text complexity band independently and proficiently.

Reading Science and Technical

Key Ideas and Details: 6-8.RST.1 Cite specific textual evidence to support analysis of science and technical texts. 6-8.RST.2 Determine the central ideas or conclusions of a text; provide an accurate summary of the text distinct from prior knowledge or opinions. 6-8.RST.3 Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.

Craft and Structure: 6-8.RST.4 Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6–8 texts and topics. 6-8.RST.5 Analyze the structure an author uses to organize a text, including how the major sections contribute to the whole and to an understanding of the topic. 6-8.RST.6 Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text.

Integration of Knowledge and Ideas: 6-8.RST.7 Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table). 6-8.RST.8 Distinguish among facts, reasoned judgment based on research findings, and speculation in a text. 6-8.RST.9 Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.

Range of Reading and Level of Text Complexity: 6-8.RST.10 By the end of grade 8, read and comprehend science/technical texts in the grades 6-8 text complexity band independently and proficiently.

Writing History

Text Types and Purposes: 6-8.WHST.1 Write arguments focused on discipline-specific content.

- a. Introduce claim(s) about a topic or issue, acknowledge and distinguish the claim(s) from alternate or opposing claims, and organize the reasons and evidence logically.
- b. Support claim(s) with logical reasoning and relevant, accurate data and evidence that demonstrate an understanding of the topic or text, using credible sources.
- c. Use words, phrases, and clauses to create cohesion and clarify the relationships among claim(s), counterclaims, reasons, and evidence.
- d. Establish and maintain a formal style.
- e. Provide a concluding statement or section that follows from and supports the argument presented.
- **6-8.WHST.2** Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.
- a. Introduce a topic clearly, previewing what is to follow; organize ideas, concepts, and information into broader categories as appropriate to achieving purpose; include formatting (e.g., headings), graphics (e.g., charts, tables), and multimedia when useful to aiding comprehension.
- b. Develop the topic with relevant, well-chosen facts, definitions, concrete details, quotations, or other information and examples.
- c. Use appropriate and varied transitions to create cohesion and clarify the relationships among ideas and concepts.
- d. Use precise language and domain-specific vocabulary to inform about or explain the topic.
- e. Establish and maintain a formal style and objective tone.
- f. Provide a concluding statement or section that follows from and supports the information or explanation presented.

Production and Distribution of Writing: 6-8.WHST.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. 6-8.WHST.5 With some guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on how well purpose and audience have been addressed. 6-8.WHST.6 Use technology, including the Internet, to produce and publish writing and present the relationships between information and ideas clearly and efficiently.

Research to Build and Present Knowledge: 6-8.WHST.7 Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration. 6-8.WHST.8 Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation. 6-8.WHST.9 Draw evidence from informational texts to support analysis reflection, and research.

Range of Writing: 6-8. WHST.10 Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

		9-10.RL.1	Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.
	Key Ideas and Details	9-10.RL.2	Determine a theme or central idea of a text and analyze in detail its development over the course of the text, including how it emerges and is shaped and refined by specific details; provide an objective summary of the text.
		9-10.RL.3	Analyze how complex characters (e.g., those with multiple or conflicting motivations) develop over the course of a text, interact with other characters, and advance the plot or develop the theme.
Reading Literature		9-10.RL.4	Determine the meaning of words and phrases as they are used in the text, including figurative and connotative meanings; analyze the cumulative impact of specific word choices on meaning and tone (e.g., how the language evokes a sense of time and place; how it sets a formal or informal tone).
	Craft and Structure	9-10.RL.5	Analyze how an author's choices concerning how to structure a text, order events within it (e.g., parallel plots), and manipulate time (e.g., pacing, flashbacks) create such effects as mystery, tension, or surprise.
		9-10.RL.6	Analyze a particular point of view or cultural experience reflected in a work of literature from outside the United States, drawing on a wide reading of world literature.
	Integration of	9-10.RL.7	Analyze the representation of a subject or a key scene in two different artistic mediums, including what is emphasized or absent in each treatment (e.g., Auden's "Musée des Beaux Arts" and Breughel's Landscape with the Fall of Icarus).
	Knowledge and Ideas	9-10.RL.9	Analyze how an author draws on and transforms source material in a specific work (e.g., how Shakespeare treats a theme or topic from Ovid or the Bible or how a later author draws on a play by Shakespeare).

	Range of Reading and Level of Text Complexity	9-10.RL.10	By the end of grade 9, read and comprehend literature, including stories, dramas, and poems, in the grades 9–10 text complexity band proficiently, with scaffolding as needed at the high end of the range. By the end of grade 10, read and comprehend literature, including stories, dramas, and poems, at the high end of the grades 9–10 text complexity band independently and proficiently.
		9-10.RI.1	Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.
	Key Ideas and Details	9-10.RI.2	Determine a central idea of a text and analyze its development over the course of the text, including how it emerges and is shaped and refined by specific details; provide an objective summary of the text.
		9-10.RI.3	Analyze how the author unfolds an analysis or series of ideas or events, including the order in which the points are made, how they are introduced and developed, and the connections that are drawn between them.
	Craft and Structure	9-10.RI.4	Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze the cumulative impact of specific word choices on meaning and tone (e.g., how the language of a court opinion differs from that of a newspaper).
		9-10.RI.5	Analyze in detail how an author's ideas or claims are developed and refined by particular sentences, paragraphs, or larger portions of a text (e.g., a section or chapter).
Reading Informational		9-10.RI.6	Determine an author's point of view or purpose in a text and analyze how an author uses rhetoric to advance that point of view or purpose.
	Integration of Knowledge and Ideas	9-10.RI.7	Analyze various accounts of a subject told in different mediums (e.g., a person's life story in both print and multimedia), determining which details are emphasized in each account.
		9-10.RI.8	Delineate and evaluate the argument and specific claims in a text, assessing whether the reasoning is valid and the evidence is relevant and sufficient; identify false statements and fallacious reasoning.
		9-10.RI.9	Analyze seminal U.S. documents of historical and literary significance (e.g., Washington's Farewell Address, the Gettysburg Address, Roosevelt's Four Freedoms speech, King's "Letter From Birmingham Jail"), including how they address related themes and concepts.
	Range of Reading and Level of Text Complexity	9-10.RI.10	By the end of grade 9, read and comprehend literary nonfiction in the grades 9–10 text complexity band proficiently, with scaffolding as needed at the high end of the range. By the end of grade 10, read and comprehend literary nonfiction at the high end of the grades 9–10 text complexity band independently and proficiently.

		9-10.W.1	Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence. a. Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among claim(s), counterclaims, reasons, and evidence. b. Develop claim(s) and counterclaims fairly, supplying evidence for each while pointing out the strengths and limitations of both in a manner that anticipates the audience's knowledge level and concerns. c. Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence. and between claim(s) and counterclaims. d. Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing. e. Provide a concluding statement or section that follows from and supports the argument presented.
Writing	Text Types and Purposes	9-10.W.2	Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content. a. Introduce a topic; organize complex ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension. b. Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic. c. Use appropriate and varied transitions to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts. d. Use precise language and domain-specific vocabulary to manage the complexity of the topic. e. Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing. f. Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).
		9-10.W.3	Write narratives to develop real or imagined experiences or events using effective technique. well-chosen details, and well-structured event sequences. a. Engage and orient the reader by setting out a problem, situation, or observation, establishing one or multiple point(s) of view, and introducing a narrator and/or characters; create a smooth progression of experiences or events. b. Use narrative techniques, such as dialogue. pacing. description, reflection, and multiple plot lines, to develop experiences, events, and/or characters. c. Use a variety of techniques to sequence events so that they build on one another to create a coherent whole. d. Use precise words and phrases, telling details, and sensory language to convey a vivid picture of the experiences, events, setting. and/or characters. e. Provide a conclusion that follows from and reflects on what is experienced. observed. or resolved over the course of the narrative.
		9-10.W.4	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and

			audience. (Grade-specific expectations for writing types are defined in standards 1–3 above.)
	Production and Distribution of Writing	9-10.W.5	Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience. (Editing for conventions should demonstrate command of Language standards 1–3 on up to and including grades 9-10 page 55.)
		9-10.W.6	Use technology, including the Internet, to produce, publish, and update individual or shared writing products, taking advantage of technology's capacity to link to other information and to display information flexibly and dynamically.
		9-10.W.7	Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.
	Research to Build and Present Knowledge	9-10.W.8	Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the usefulness of each source in answering the research question; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and following a standard format for citation.
		9-10.W.9	Draw evidence from literary or informational texts to support analysis, reflection, and research. a. Apply grades 9–10 Reading standards to literature(e.g., "Analyze how an author draws on and transforms source material in a specific work [e.g., how Shakespeare treats a theme or topic from Ovid or the Bible or how a later author draws on a play by Shakespeare]"). b. Apply grades 9–10 Reading standards to literary nonfiction (e.g., "Delineate and evaluate the argument and specific claims in a text, assessing whether the reasoning is valid and the evidence is relevant and sufficient; identify false statements and fallacious reasoning").
	Range of Writing	9-10.W.10	Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of tasks, purposes, and audiences.
Speaking and Listening	Comprehension and Collaboration	9-10.SL.1	Initiate and participate effectively in a range of collaborative discussions (one-on-one. in groups, and teacher-led) with diverse partners on grades 9–10 topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively. a. Come to discussions prepared. having read and researched material under study; explicitly draw on that preparation by referring to evidence from texts and other research on the topic or issue to stimulate a thoughtful, well-reasoned exchange of ideas. b. Work with peers to set rules for collegial discussions and decision-making (e.g., informal consensus, taking votes on key issues, presentation of alternate views), clear goals and deadlines, and individual roles as needed. c. Propel conversations by posing and responding to questions that relate the current discussion to broader themes or larger ideas; actively incorporate others into the discussion; and clarify, verify, or challenge ideas and conclusions. d. Respond thoughtfully to diverse perspectives, summarize points

<u>Language</u>	Conventions of Standard English	9-10.L.2	dependent; noun, relative. adverbial) to convey specific meanings and add variety and interest to writing or presentations. Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing. a. Use a semicolon (and perhaps a conjunctive adverb) to link two or more closely related independent clauses. b. Use a colon to introduce a list or quotation. c. Spell correctly.
		9-10.L.1	Demonstrate command of the conventions of standard English grammar and usage when writing or speaking. a. Use parallel structure.* b. Use various types of phrases (noun, verb. adjectival, adverbial, participial, prepositional, absolute) and clauses (independent, dependent, noun, relative, adverbial) to convey specific meanings.
		9-10.SL.6	Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate. (See grades 9-10 Language standards 1 and 3 on pages 54 for specific expectations.)
	Presentation of Knowledge and Ideas	9-10.SL.5	Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence and to add interest.
		9-10.SL.4	Present information, findings, and supporting evidence clearly, concisely, and logically such that listeners can follow the line of reasoning and the organization, development, substance, and style are appropriate to purpose, audience, and task.
		9-10.SL.3	Evaluate a speaker's point of view, reasoning, and use of evidence and rhetoric, identifying any fallacious reasoning or exaggerated or distorted evidence.
		9-10.SL.2	Integrate multiple sources of information presented in diverse media or formats (e.g., visually, quantitatively, orally) evaluating the credibility and accuracy of each source.
			of agreement and disagreement, and. when warranted, qualify or justify their own views and understanding and make new connections in light of the evidence and reasoning presented.

			dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation of a word or determine or clarify its precise meaning. its part of speech. or its etymology. d. Verify the preliminary determination of the meaning of a word or phrase (e.g., by checking the inferred meaning in context or in a dictionary).
		9-10.L.5	Demonstrate understanding of figurative language. word relationships, and nuances in word meanings. a. Interpret figures of speech (e.g., satire. sarcasm) in context and analyze their role in the text. b. Analyze nuances in the meaning of words with similar denotations.
		9-10.L.6	Acquire and use accurately general academic and domain-specific words and phrases, sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression
		9-10.RH.1	Cite specific textual evidence to support analysis of primary and secondary sources, attending to such features as the date and origin of the information.
	Key Ideas and Details	9-10.RH.2	Determine the central ideas or information of a primary or secondary source; provide an accurate summary of how key events or ideas develop over the course of the text.
		9-10.RH.3	Analyze in detail a series of events described in a text; determine whether earlier events caused later ones or simply preceded them.
		9-10.RH.4	Determine the meaning of words and phrases as they are used in a text, including vocabulary describing political, social, or economic aspects of history/social science.
Reading History	Craft and Structure	9-10.RH.5	Analyze how a text uses structure to emphasize key points or advance an explanation or analysis
		9-10.RH.6	Compare the point of view of two or more authors for how they treat the same or similar topics, including which details they include and emphasize in their respective accounts.
		9-10.RH.7	Integrate quantitative or technical analysis (e.g., charts, research data) with qualitative analysis in print or digital text.
	Integration of Knowledge and Ideas	9-10.RH.8	Assess the extent to which the reasoning and evidence in a text support the author's claims.
		9-10.RH.9	Compare and contrast treatments of the same topic in several primary and secondary sources.

	Range of Reading and Level of Text Complexity	9-10.RH.10	By the end of grade 10, read and comprehend history/social studies texts in the grades 9–10 text complexity band independently and proficiently.
		9-10.RST.1	Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.
	Key Ideas and Details	9-10.RST.2	Determine the central ideas or conclusions of a text; trace the text's explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text.
		9-10.RST.3	Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks attending to special cases or exceptions defined in the text.
		9-10.RST.4	Determine the meaning of symbols, key terms, and other domain- specific words and phrases as they are used in a specific scientific or technical context relevant to grades 9–10 texts and topics.
Reading	Craft and Structure	9-10.RST.5	Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy).
Science and Technical		9-10.RST.6	Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, defining the question the author seeks to address.
	Integration of Knowledge and Ideas	9-10.RST.7	Translate quantitative or technical information expressed in words in a text into visual form (e.g., a table or chart) and translate information expressed visually or mathematically (e.g., in an equation) into words.
		9-10.RST.8	Assess the extent to which the reasoning and evidence in a text support the author's claim or a recommendation for solving a scientific or technical problem.
		9-10.RST.9	Compare and contrast findings presented in a text to those from other sources (including their own experiments), noting when the findings support or contradict previous explanations or accounts.
	Range of Reading and Level of Text Complexity	9-10.RST.10	By the end of grade 10, read and comprehend science/technical texts in the grades 9–10 text complexity band independently and proficiently
Writing History	Text Types and Purposes	9- 10.WHST.1	Write arguments focused on discipline-specific content. a. Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence. b. Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and

			concerns. c. Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence. and between claim(s) and counterclaims. d. Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing. e. Provide a concluding statement or section that follows from or supports the argument presented.
		9- 10.WHST.2	Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes. a. Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension. b. Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic. c. Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts. d. Use precise language and domain-specific vocabulary to manage the complexity of the topic and convey a style appropriate to the discipline and context as well as to the expertise of likely readers. e. Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing. f. Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).
		9- 10.WHST.4	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
	Production and Distribution of Writing	9- 10.WHST.5	Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.
		9- 10.WHST.6	Use technology, including the Internet, to produce, publish, and update individual or shared writing products, taking advantage of technology's capacity to link to other information and to display information flexibly and dynamically.
	Research to Build and Present Knowledge	9- 10.WHST.7	Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.
		9- 10.WHST.8	Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the usefulness of each source in answering the research question; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and following a standard format for citation.

	9- 10.WHST.9	Draw evidence from informational texts to support analysis, reflection, and research.
Range of Writing	9- 10.WHST.10	Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

		11-12.RL.1	Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text, including determining where the text leaves matters uncertain.
	Key Ideas and Details	11-12.RL.2	Determine two or more themes or central ideas of a text and analyze their development over the course of the text, including how they interact and build on one another to produce a complex account; provide an objective summary of the text.
		11-12.RL.3	Analyze the impact of the author's choices regarding how to develop and relate elements of a story or drama (e.g., where a story is set, how the action is ordered, how the characters are introduced and developed).
		11-12.RL.4	Determine the meaning of words and phrases as they are used in the text, including figurative and connotative meanings; analyze the impact of specific word choices on meaning and tone, including words with multiple meanings or language that is particularly fresh, engaging, or beautiful. (Include Shakespeare as well as other authors.)
Reading Literature	Craft and Structure	11-12.RL.5	Analyze how an author's choices concerning how to structure specific parts of a text (e.g., the choice of where to begin or end a story, the choice to provide a comedic or tragic resolution) contribute to its overall structure and meaning as well as its aesthetic impact.
		11-12.RL.6	Analyze a case in which grasping point of view requires distinguishing what is directly stated in a text from what is really meant (e.g., satire, sarcasm, irony, or understatement).
	Integration of Knowledge and Ideas	11-12.RL.7	Analyze multiple interpretations of a story, drama, or poem (e.g., recorded or live production of a play or recorded novel or poetry), evaluating how each version interprets the source text. (Include at least one play by Shakespeare and one play by an American dramatist.)
		11-12.RL.9	Demonstrate knowledge of eighteenth-, nineteenth- and early-twentieth-century foundational works of American literature, including how two or more texts from the same period treat similar themes or topics.
	Range of Reading and Level of Text Complexity	11-12.RL.10	By the end of grade 11, read and comprehend literature, including stories, dramas, and poems, in the grades 11–CCR text complexity band proficiently, with scaffolding as needed at the high end of the range. By the end of grade 12, read and comprehend literature, including stories, dramas, and poems, at the high end of the grades 11–CCR text complexity band independently and proficiently.
Reading Informational		11-12.RI.1	Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text, including determining where the text leaves matters uncertain.
	Key Ideas and Details	11-12.RI.2	Determine two or more central ideas of a text and analyze their development over the course of the text, including how they interact and build on one another to provide a complex analysis; provide an objective summary of the text.
		11-12.RI.3	Analyze a complex set of ideas or sequence of events and explain how specific individuals, ideas, or events interact and develop over the course of the text.
	Craft and Structure	11-12.RI.4	Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze how an author uses and refines the meaning of a key term or terms over the course of a text (e.g., how Madison defines faction in Federalist No. 10).

		11-12.RI.5	Analyze and evaluate the effectiveness of the structure an author uses in his or her exposition or argument, including whether the structure makes points clear, convincing, and engaging.
		11-12.RI.6	Determine an author's point of view or purpose in a text in which the rhetoric is particularly effective, analyzing how style and content contribute to the power, persuasiveness, or beauty of the text.
		11-12.RI.7	Integrate and evaluate multiple sources of information presented in different media or formats (e.g., visually, quantitatively) as well as in words in order to address a question or solve a problem.
	Integration of Knowledge and Ideas	11-12.RI.8	Delineate and evaluate the reasoning in seminal U.S. texts, including the application of constitutional principles and use of legal reasoning (e.g., in U.S. Supreme Court majority opinions and dissents) and the premises, purposes, and arguments in works of public advocacy (e.g., The Federalist, presidential addresses).
		11-12.RI.9	Analyze seventeenth-, eighteenth-, and nineteenth-century foundational U.S. documents of historical and literary significance (including The Declaration of Independence, the Preamble to the Constitution, the Bill of Rights, and Lincoln's Second Inaugural Address) for their themes, purposes, and rhetorical features.
	Range of Reading and Level of Text Complexity	11-12.RI.10	By the end of grade 11, read and comprehend literary nonfiction in the grades 11–CCR text complexity band proficiently, with scaffolding as needed at the high end of the range. By the end of grade 12, read and comprehend literary nonfiction at the high end of the grades 11–CCR text complexity band independently and proficiently. 1, Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text. 2, Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas. 3, Analyze how and why individuals, events, and ideas develop and interact over the course of a text. 4, Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone. 5, Analyze the structure of texts, including how specific sentences, paragraphs, and larger portions of the text (e.g., a section, chapter, scene, or stanza) relate to each other and the whole. 6, Assess how point of view or purpose shapes the content and style of a text. 7, Integrate and evaluate content presented in diverse formats and media, including visually and quantitatively, as well as in words. 8, Delineate and evaluate the argument and specific claims in a text, including the validity of the reasoning as well as the relevance and sufficiency of the evidence. 9, Analyze how two or more texts address similar themes or topics in order to build knowledge or to compare the approaches the authors take. 10, Read and comprehend complex literary and informational texts independently and proficiently.
Writing	Text Types and Purposes	11-12.W.1	Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence. a. Introduce precise. knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences claim(s), counterclaims, reasons, and evidence. b. Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant evidence for each while pointing out the strengths and limitations of both in a manner that anticipates the audience's knowledge level, concerns, values, and possible biases. c. Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence. and between claim(s) and counterclaims. d. Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing. e. Provide a concluding statement or section that follows from and supports the argument presented.
		11-12.W.2	Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content. a. Introduce a topic; organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g.,

			headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension. b. Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic. c. Use appropriate and varied transitions and syntax to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts. d. Use precise language. domain-specific vocabulary, and techniques such as metaphor, simile. and analogy to manage the complexity of the topic. e. Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing.
		11-12.W.3	Write narratives to develop real or imagined experiences or events using effective technique. well-chosen details, and well-structured event sequences. a. Engage and orient the reader by setting out a problem, situation, or observation and its significance. establishing one or multiple point(s) of view, and introducing a narrator and/or characters; create a smooth progression of experiences or events. b. Use narrative techniques, such as dialogue. pacing. description, reflection, and multiple plot lines, to develop experiences, events, and/or characters. c. Use a variety of techniques to sequence events so that they build on one another to create a coherent whole and build toward a particular tone and outcome (e.g., a sense of mystery, suspense. growth. or resolution). d. Use precise words and phrases, telling details, and sensory language to convey a vivid picture of the experiences, events, setting. and/or characters. e. Provide a conclusion that follows from and reflects on what is experienced. observed. or resolved over the course of the narrative.
	Production and Distribution of Writing	11-12.W.4	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1–3 above.)
		11-12.W.5	Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience. (Editing for conventions should demonstrate command of Language standards 1–3 up to and including grades 11-12 on page 55.)
		11-12.W.6	Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.
	Research to Build and Present Knowledge	11-12.W.7	Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.
		11-12.W.8	Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.
		11-12.W.9	Draw evidence form literary or informational texts to support analysis, reflection, and research. a. Apply grades 11–12 Reading standards to literature (e.g., "Demonstrate knowledge of eighteenth-, nineteenth- and early-twentieth-century foundational works of American literature. including how two or more texts from the same period treat similar themes or topics"). b. Apply grades 11–12 Reading standards to literary nonfiction (e.g., "Delineate and evaluate the reasoning in seminal U.S. texts, including the application of constitutional principles and use of legal reasoning [e.g., in U.S. Supreme Court Case majority opinions and dissents) and the premises, purposes, and arguments in works of public advocacy (e.g., The Federalist, presidential addresses]").
	Range of Writing	11-12.W.10	Write routinely over extended time frames (time for research. reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of tasks, purposes, and audiences. 1, Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence. 2, Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content.

Language	Conventions of Standard English	11-12.L.1	Demonstrate command of the conventions of standard English grammar and usage when writing or speaking. a. Apply the understanding that usage is a matter of convention, can change over time. and is
	Presentation of Knowledge and Ideas	11-12.SL.6	Adapt speech to a variety of contexts and tasks, demonstrating a command of formal English when indicated or appropriate. (See grades 11-12 Language standards 1 and 3 on page 54 for specific expectations.) 1, Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own clearly and persuasively. 2, Integrate and evaluate information presented in diverse media and formats, including visually, quantitatively, and orally. 3, Evaluate a speaker's point of view, reasoning, and use of evidence and rhetoric. 4, Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience. 5, Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations. 6, Adapt speech to a variety of contexts and communicative tasks, demonstrating command of formal English when indicated or appropriate.
Speaking and Listening		11-12.SL.5	Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence and to add interest.
		11-12.SL.4	Present information, findings, and supporting evidence, conveying a clear and distinct perspective, such that listeners can follow the line of reasoning, alternative or opposing perspectives are addressed, and the organization, development, substance, and style are appropriate to purpose, audience, and a range or formal and informal tasks.
		11-12.SL.3	Evaluate a speaker's point of view, reasoning, and use of evidence and rhetoric, assessing the stance, premises, links among ideas, word choice, points of emphasis, and tone used.
		11-12.SL.2	Integrate multiple sources of information presented in diverse formats and media (e.g., visually, quantitatively, orally) in order to make informed decisions and solve problems, evaluating the credibility and accuracy of each source and noting any discrepancies among the data.
	Comprehension and Collaboration	11-12.SL.1	Initiate and participate effectively in a range of collaborative discussions (one-on-one. in groups, and teacher-led) with diverse partners on grades 11–12 topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively. a. Come to discussions prepared. having read and researched material under study; explicitly draw on that preparation by referring to evidence from texts and other research on the topic or issue to stimulate a thoughtful, well-reasoned exchange of ideas. b. Work with peers to promote civil, democratic discussions and decision-making. set clear goals and deadlines, and establish individual roles as needed. c. Propel conversations by posing and responding to questions that probe reasoning and evidence; ensure a hearing for a full range of positions on a topic or issue; clarify, verify, or challenge ideas and conclusions; and promote divergent and creative perspectives. d. Respond thoughtfully to diverse perspectives; synthesize comments, claims, and evidence made on all sides of an issue; resolve contradictions when possible; and determine what additional information or research is required to deepen the investigation or complete the task.
			3, Write narratives to develop real or imagined experiences or events using effective technique. well-chosen details, and well-structured event sequences. 4, Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. 5, Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach. 6, Use technology, including the Internet, to produce and publish writing and to interact and collaborate with others. 7, Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation. 8, Gather relevant information from multiple print and digital sources, assess the credibility and accuracy of each source, and integrate the information while avoiding plagiarism. 9, Draw evidence from literary or informational texts to support analysis, reflection, and research. 10, Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of tasks, purposes, and audiences.

			sometimes contested. b. Resolve issues of complex or contested usage. consulting references (e.g., Merriam-Webster's Dictionary of English Usage. Garner's Modern American English) as needed.
		11-12.L.2	Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing. a. Observe hyphenation conventions. b. Spell correctly.
	Knowledge of Language	11-12.L.3	Apply knowledge of language to understand how language functions in different contexts, to make effective choices for meaning or style. and to comprehend more fully when reading or listening. a. Vary syntax for effect, consulting references (e.g., Tufte's Artful Sentences) for guidance as needed; apply an understanding of syntax to the study of complex texts when reading.
		11-12.L.4	Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grades 11–12 reading and content, choosing flexibly from a range of strategies. a. Use context (e.g., the overall meaning of a sentence. paragraph. or text; a word's position or function in a sentence) as a clue to the meaning of a word or phrase. b. Identify and correctly use patterns of word changes that indicate different meanings or parts of speech (e.g., conceive. conception, conceivable). c. Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation of a word or determine or clarify its precise meaning. its part of speech. its etymology, or its standard usage. d. Verify the preliminary determination of the meaning of a word or phrase (e.g., by checking the inferred meaning in context or in a dictionary).
		11-12.L.5	Demonstrate understanding of figurative language. word relationships, and nuances in word meanings. a. Interpret figures of speech (e.g., hyperbole. paradox) in context and analyze their role in the text. b. Analyze nuances in the meaning of words with similar denotations.
	Vocabulary Acquisition and Use	11-12.L.6	Acquire and use accurately general academic and domain-specific words and phrases, sufficient for reading. writing. speaking. and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression. 1, Demonstrate command of the conventions of standard English grammar and usage when writing or speaking. 2, Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing. 3, Apply knowledge of language to understand how language functions in different contexts, to make effective choices for meaning or style. and to comprehend more fully when reading or listening. 4, Determine or clarify the meaning of unknown and multiple-meaning words and phrases by using context clues, analyzing meaningful word parts, and consulting general and specialized reference materials, as appropriate. 5, Demonstrate understanding of word relationships and nuances in word meanings. 6, Acquire and use accurately a range of general academic and domain-specific words and phrases sufficient for reading. writing. speaking. and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression.
Reading History	Key Ideas and Details	11-12.RH.1	Cite specific textual evidence to support analysis of primary and secondary sources, connecting insights gained from specific details to an understanding of the text as a whole.
		11-12.RH.2	Determine the central ideas or information of a primary or secondary source; provide an accurate summary that makes clear the relationships among the key details and ideas.
		11-12.RH.3	Evaluate various explanations for actions or events and determine which explanation best accords with textual evidence, acknowledging where the text leaves matters uncertain.
	Craft and Structure	11-12.RH.4	Determine the meaning of words and phrases as they are used in a text, including analyzing how an author uses and refines the meaning of a key term over the course of a text (e.g., how Madison defines faction in Federalist No. 10).

		11-12.RH.5	Analyze in detail how a complex primary source is structured, including how key sentences, paragraphs, and larger portions of the text contribute to the whole.
		11-12.RH.6	Evaluate authors' differing points of view on the same historical event or issue by assessing the authors' claims, reasoning, and evidence.
	Integration of Knowledge and Ideas	11-12.RH.7	Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., visually, quantitatively, as well as in words) in order to address a question or solve a problem.
		11-12.RH.8	Evaluate an author's premises, claims, and evidence by corroborating or challenging them with other information.
		11-12.RH.9	Integrate information from diverse sources, both primary and secondary, into a coherent understanding of an idea or event, noting discrepancies among sources.
	Range of Reading and Level of Text Complexity	11-12.RH.10	By the end of grade 12, read and comprehend history/social studies texts in the grades 11–12 text complexity band independently and proficiently.
	Key Ideas and Details	11-12.RST.1	Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account.
		11-12.RST.2	Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.
		11-12.RST.3	Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.
	Craft and Structure	11-12.RST.4	Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11–12 texts and topics.
		11-12.RST.5	Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas.
Reading Science and Technical		11-12.RST.6	Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, identifying important issues that remain unresolved.
	Integration of Knowledge and Ideas	11-12.RST.7	Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.
		11-12.RST.8	Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information.
		11-12.RST.9	Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.
	Range of Reading and Level of Text Complexity	11- 12.RST.10	By the end of grade 12, read and comprehend science/technical texts in the grades 11–12 text complexity band independently and proficiently.
Writing History	Text Types and Purposes	11- 12.WHST.1	Write arguments focused on discipline-specific content. a. Introduce precise. knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence. b. Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience's knowledge level,

			concerns, values, and possible biases. c. Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence. and between claim(s) and counterclaims. d. Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing. e. Provide a concluding statement or section that follows from or supports the argument presented.
		11- 12.WHST.2	Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes. a. Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension. b. Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic. c. Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts. d. Use precise language. domain-specific vocabulary and techniques such as metaphor, simile. and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers. e. Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic).
		11- 12.WHST.4	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
Γ	Production and Distribution of Vriting	11- 12.WHST.5	Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.
		11- 12.WHST.6	Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.
		11- 12.WHST.7	Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.
a	Research to Build and Present Knowledge	11- 12.WHST.8	Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.
		11- 12.WHST.9	Draw evidence from informational texts to support analysis, reflection, and research.
R	Range of Writing	11- 12.WHST.10	Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.



<u>Penmanship</u>/ <u>Letter Recognition</u>/ <u>Letter-Sound Association Series</u>: The Penmanship Series is typically introduced in preschool or kindergarten and completion is expected by the middle of second grade, if not sooner. Over forty percent of students who begin the series in kindergarten will likely finish the ball-and-stick portion by the end of first grade. Entering students are assessed for proficiency and placed at the appropriate level. Within the first week of kindergarten most students should be reading (with cadence), writing, and comprehending sentences similar to, "The fat rat sat on the cat in the flat hat."

Exercises are designed to: improve fine motor skills, develop ability in calligraphic techniques; improve discrimination recognition between similar graphic symbols; automatize students' handwriting (by "chunking" letter strings into phonetic units and encoding high frequency letter combinations into "muscle memory" gestural movements); and develop letter-sound associations as well as letter-symbol associations. Fine motor skill dexterity are targeted, with an emphasis on producing legible and appealing graphic symbols in print using modified ball-and-stick model and in cursive using simplified D'Nealian script as a model.

This series is heavily layered (previously learned skills are reinforced in the process of acquiring new skills); includes whole class writing activities joined with individualized untimed Expert Trials and Challenge Exercises. The Penmanship Series may overlap with the Orthography Series (see following section).

It is generally accepted that motor learning is easily automatized yet difficult to extinguish even if dysfunctional to a goal (that is, bad habits are hard to break). Thus, throughout this series, great care is taken to introduce constructs in a manner that enhances retention and recall while decreasing interference. Exercises target specific skills (e.g. visual discrimination or motor skills) by holding as many variables constant as possible while specific visual cues or tasks are varied. For example, during whole-class symbol discrimination and writing exercises, students are instructed to study the organization of letters presented (e.g. oad-oce-ocu-dbpq-gy-uy-oadg-ft-vr-új-whk-uwww-sz vwmnz-kxy-hffeba-itu-ucoag-dppr-zs 62-5380-17-94). Other targeted procedural skills include alphabetization of words and initial sound recognition. Initial sound recognition is accomplished by requesting students to read and write words that vary across initial sounds while ending sounds are held constant (pattern words) thereby reducing cognitive load and promoting generalization (e.g., at, bat, cat, fat, hat, pat, rat, sat; an, ban, can, Dan, fan, man, pan, ran, tan, van; etc.).

SCIENCE STANDARDS

Kindergarten / A.L.L. Science Objectives, Aligned to Meet or Exceed Next Generation Science Grade Level Standards / Mastered by or before year-end

<u>Next Generation Science Standards:</u> In addition to the objectives below, students must demonstrate competence and/or mastery in all objectives articulated in the Next Generation Science Standards:

NGSS Physical Sciences

K. Forces and Interactions: Pushes and Pulls: K-PS2-1. Plan and conduct an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of an object. K-PS2-2. Analyze data to determine if a design solution works as intended to change the speed or direction of an object with a push or a pull.

K. Interdependent Relationships in Ecosystems: Animals, Plants, and Their Environment. K-LS1-1. Use observations to describe patterns of what plants and animals (including humans) need to survive. K-ESS2-2. Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs. K-ESS3-1. Use a model to represent the relationship between the needs of different plants or animals (including humans) and the places they live. K-ESS3-3. Communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment.

K. Weather and Climate: K-PS3-1. Make observations to determine the effect of sunlight on Earth's surface. K-PS3-2. Use tools and materials to design and build a structure that will reduce the warming effect of sunlight on an area. K-ESS2-1. Use and share observations of local weather conditions to describe patterns over time. K-ESS3-2. Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather.

NGSS Life Sciences

K.Interdependent Relationships in Ecosystems: Animals, Plants, and Their Environment. K-LS1-1. Use observations to describe patterns of what plants and animals (including humans) need to survive. K-ESS2-2. Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs. K-ESS3-1. Use a model to represent the relationship between the needs of different plants or animals (including humans) and the places they live. K-ESS3-3. Communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment.

<u>Oral Exercises and Skills:</u> 1. Seamlessly respond to the instructor's "choral call" with a "choral response." 2. Discriminate between "whole group" and "individual" cues. 3. Fluidly recognize the target (individual or group) and respond when nonverbally instructed to do so.

Physical Sciences

K-PS1 Mechanics

K-PS1-1. Motion: Speed, Velocity. Understand the ways that pushing or pulling on an object can change both its speed and velocity (exceeds NGSS K-PS2-1). Make observations of an object in free-fall to test the hypothesis that it accelerates. Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object (NGSS 3-PS2-1). Make observations and/or measurements of an object's motion to provide evidence that a pattern can be used to predict future motion (NGSS 3-PS2-2). Analyze data to determine if a design solution works as intended to change the speed or direction of an object with a push or a pull (NGSS K-PS2-2).

K-PS2 Earth Science

K-PS2-1. Weather and Climate. Discuss the effect of sunlight on Earth's surface (NGSS K-PS3-1). Make observations at different times of year to relate the amount of daylight to the time of year (NGSS 1-ESS1-2). Use and share observations of local weather conditions to describe patterns over time (NGSS K-ESS2-1). Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather (NGSS K-ESS3-2). Use tools and materials to design and build a structure that will reduce the warming effect of sunlight on an area (NGSS K-ESS2-1).

K-PS2-2. The Atmosphere, the Oceans, and Their Interactions. Obtain information to identify where water is found on Earth and that it can be solid or liquid (NGSS 2-ESS2-3). Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact (NGSS 5-ESS2-1).

K-PS2-3. Phases of the Moon. Develop and use a model of the Earth-sun-moon system to describe the cyclic patterns of lunar phases, eclipses of the sun and moon, and seasons (NGSS MS-ESS1-1).

K-PS3 Astronomy

K-PS3-1. The Solar System. Use observations of the sun, moon, and stars to describe patterns that can be predicted (NGSS 1-ESS1-1).

K-PS3-2. The Stars. Understand the historical use of stars for navigation.

Life Sciences

K-LS1 Ecology

K-LS1-1. Interdependent Relationships in Ecosystems. Discuss the relationships that exist between animals including predator-prey interactions, mutualism, parasitism, and commensalism. Give examples of strategies plants and animals use to deter predation. Use observations to describe patterns of what plants and animals (including humans) need to survive (NGSS K-LS1-1). Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs (NGSS K-ESS2-2). Use a model to represent the relationship between the needs of different plants or animals (including humans) and the places they live (NGSS K-ESS2-2). Communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment (NGSS K-ESS3-3).

Grade 1 / A.L.L. Science Objectives, Aligned to Meet or Exceed Next Generation Science Grade Level Standards / Mastered by or before year-end

<u>Prior Knowledge / Prerequisite Comprehension / Skill Retention-reactivation:</u> Before providing instruction in the following objectives, the instructor shall assess students' retention and facility with objectives articulated for prior grades and review or reteach where indicated. To satisfy science requirements for the current grade, students shall demonstrate mastery in objectives articulated for prior grades along with those articulated for the current grade. In addition, students must demonstrate competence and/or mastery in all objectives articulated in the Next Generation Science Standards:

NGSS Physical Sciences

1. Waves: Light and Sound. 1-PS4-1. Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate. 1-PS4-2. Make observations to construct an evidence-based account that objects can be seen only when illuminated. 1-PS4-3. Plan and conduct an investigation to determine the effect of placing objects made with different materials in the path of a beam of light. 1-PS4-4. Use tools and materials to design and build a device that uses light or sound to solve the problem of communicating over a distance.

1.Structure, Function, and Information Processing: 1-LS1-1. Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs. 1-LS1-2. Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive. 1-LS3-1. Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents.

1.Space Systems: Patterns and Cycles.1-ESS1-1. Use observations of the sun, moon, and stars to describe patterns that can be predicted. 1-ESS1-2. Make observations at different times of year to relate the amount of daylight to the time of year.

NGSS Life Science

1.Structure, Function, and Information Processing. 1-LS1-1. Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs. 1-LS1-2. Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive. 1-LS3-1. Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents.

<u>Oral Exercises:</u> 1. Seamlessly respond to the instructor's "choral call" with a "choral response." 2. Discriminate between "whole group" and "individual" cues. 3. Fluidly recognize the target (individual or group) and respond when nonverbally instructed to do so.

Physical Sciences

1-PS1 Mechanics

1-PS1-1. Momentum. Understand at a conceptual level the law of the conservation of momentum. Describe how impulse changes momentum. Use evidence to construct an explanation relating the speed of an object to the energy of that object (NGSS 4-PS3-1). Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents (NGSS 4-PS3-2). Ask questions and predict outcomes about the changes in energy that occur when objects collide (NGSS 4-PS3-3). Apply scientific ideas to design, test, and refine a device that converts energy from one form to another (NGSS 4-PS3-4). Obtain and combine information to describe that energy and fuels are derived from natural resources and their uses affect the environment (NGSS 4-ESS3-1).

1-PS1-2. Energy. List various sources of energy and forms of mechanical energy. Know the scientific definitions of the following terms: power, energy, work, and conservation of energy. Understand how machines do work.

1-PS2 The Atom

1-PS2-1. Structure of the Atom. Know the basic structure of the atom (i.e. Bohr's Planetary Model of the atom), and be able to label the electron, neutron, proton, and atomic nucleus on a given diagram of an atom. Conceptualize the electron wave-cloud model of the atom. Understand how different elements have different atomic structures, and what differentiates one element from another. List the fundamental particles recognized by the quantum model.

1-PS2-2. The Atomic Nucleus. Understand the use of radiation in everyday technologies (e.g. smoke detectors), and the health implications of radiation exposure for humans. Explain the different properties and effects of alpha, beta, and gamma rays.

1-PS3 Waves: Sound and Light

1-PS3-1. Sound Waves. Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate (NGSS 1-PS4-1).

1-PS3-2. Light Waves. Make observations to construct an evidence-based account that objects can be seen only when illuminated (NGSS 1-PS4-2). Plan and conduct an investigation to determine the effect of placing objects made with different materials in the path of a beam of light (NGSS 1-PS4-3). Use tools and materials to design and build a device that uses light or sound to solve the problem of communicating over a distance (NGSS 1-PS4-4).

Life Sciences

1-LS1 Plants and Animals

1-LS1-1. Structure, Function, and Information Processing. Understand the basic principle of evolution, including how differences between individuals of a species acts as the raw material for evolution. List, from specific to general and vise versa, the taxa of the Linnaean classification system of organisms (i.e. domain, kingdom, phylum, class, order, family, genus, species. Give the binomial classifications for a number of sample species, including humans, bears, cats, dogs, and earthworms. Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs (NGSS 1-LS1-1). Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive 1-LS1-2). Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents (NGSS 1-LS1-2).

Grade 2 / A.L.L. Science Objectives, Aligned to Meet or Exceed Next Generation Science Grade Level Standards / Mastered by or before year-end

<u>Prior Knowledge / Prerequisite Comprehension / Skill Retention-reactivation:</u> Before providing instruction in the following objectives, the instructor shall assess students' retention and facility with objectives articulated for prior grades and review or reteach where indicated. To satisfy science requirements for the current grade, students shall demonstrate mastery in objectives articulated for prior grades along with those articulated for the current grade. In addition, students must demonstrate competence and/or mastery in all objectives articulated in the Next Generation Science Standards:

NGSS Physical Sciences

- 2.Structure and Properties of Matter: 2-PS1-1. Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties. 2-PS1-2. Analyze data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose. 2-PS1-3. Make observations to construct an evidence-based account of how an object made of a small set of pieces can be disassembled and made into a new object. 2-PS1-4. Construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot.
- 2.Interdependent Relationships in Ecosystems: 2-LS2-1. Plan and conduct an investigation to determine if plants need sunlight and water to grow. 2-LS2-2. Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants. 2-LS4-1. Make observations of plants and animals to compare the diversity of life in different habitats.
- 2.Earth's Systems: Processes that Shape the Earth: 2-ESS1-1. Use information from several sources to provide evidence that Earth events can occur quickly or slowly. 2-ESS2-1. Compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land. 2-ESS2-2. Develop a model to represent the shapes and kinds of land and bodies of water in an area. 2-ESS2-3. Obtain information to identify where water is found on Earth and that it can be solid or liquid.

NGSS Life Sciences

2.Interdependent Relationships in Ecosystems. 2-LS2-1. Plan and conduct an investigation to determine if plants need sunlight and water to grow. 2-LS2-2. Develop a simple model that mimics the function of an animal in

dispersing seeds or pollinating plants. 2-LS4-1. Make observations of plants and animals to compare the diversity of life in different habitats.

<u>Oral Exercises:</u> Seamlessly respond to the instructor's "choral call" with a "choral response." Discriminate between "whole group" and "individual" cues; Fluidly recognize the target (individual or group) and respond when nonverbally instructed to do so.

Physical Sciences

2-PS1 Forces and Interactions

2-PS1-1. Magnetism. Conceptually understand magnetic fields, magnetic domains magnetic poles, and the connection between electric currents and magnetic fields. Ask questions to determine cause and effect relationships of electric or magnetic interactions between two objects not in contact with each other (NGSS 3-PS2-3). Define a simple design problem that can be solved by applying scientific ideas about magnets (NGSS 3-PS2-4).

2-PS2 Earth Science

2-PS2-1. A Brief History of the Earth. Awareness of Precambrian time and some of the events believed to have occurred. Understand how Earth's past is grouped into different time periods including the Paleozoic era, the Mesozoic era, and the Cenozoic era. Use information from several sources to provide evidence that Earth events can occur quickly or slowly (NGSS 2-ESS1-1). Compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land (NGSS 2-ESS2-1). Develop a model to represent the shapes and kinds of land and bodies of water in an area (NGSS 2-ESS2-2). Construct a scientific explanation based on evidence from rock strata for how the geologic time scale is used to organize Earth's 4.6-billion-year-old history (NGSS MS-ESS1-4). Construct an explanation based on evidence for how geoscience processes have changed Earth's surface at varying time and spatial scales (NGSS MS-ESS2-2). Analyze and interpret data on the distribution of fossils and rocks, continental shapes, and seafloor structures to provide evidence of the past plate motions (NGSS MS-ESS2-3). Name different methods for dating materials, including relative dating and radiometric dating.

2-PS3 Chemistry

- **2-PS3-1.** The Elements of Chemistry. Understand the molecular basis for different phases of matter. Describe the terms: metals, nonmetals, metalloids, Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties (NGSS 2-PS1-1). Analyze data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose (NGSS 2-PS1-2). Make observations to construct an evidence-based account of how an object made of a small set of pieces can be disassembled and made into a new object (NGSS 2-PS1-3). Construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot (NGSS 2-PS1-4).
- **2-PS3-2.** The Periodic Table. Understand the organizational rationale of the periodic table, including atomic groups and periods. Describe the properties across periodic trends, such as properties of the noble gases. Develop a model to describe that matter is made of particles too small to be seen (NGSS 5-PS1-1). Measure and graph quantities to provide evidence

that regardless of the type of change that occurs when heating, cooling, or mixing substances, the total weight of matter is conserved (NGSS 5-PS1-2). Make observations and measurements to identify materials based on their properties (NGSS 5-PS1-3). Conduct an investigation to determine whether the mixing of two or more substances results in new substances (NGSS 5-PS1-4).

Life Sciences

2-LS1 Ecology

2-LS1-1. Interdependent Relationships in Ecosystems. Plan and conduct an investigation to determine if plants need sunlight and water to grow (NGSS 1-LS1-2). Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants (NGSS 2-LS2-2). Make observations of plants and animals to compare the diversity of life in different habitats (NGSS 2-LS2-2).



3.Inheritance and Variation of Traits: Life Cycles and Traits. 3-LS1-1. Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death. 3-LS3-1.

Analyze and interpret data to provide evidence that plants and animals have traits inherited from parents and that variation of these traits exists in a group of similar organisms. 3-LS3-2. Use evidence to support the explanation that traits can be influenced by the environment. 3-LS4-2. Use evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing.

3. Weather and Climate: 3-ESS2-1. Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season. 3-ESS2-2. Obtain and combine information to describe climates in different regions of the world. 3-ESS3-1. Make a claim about the merit of a design solution that reduces the impacts of a weather-related hazard.

NGSS Life Sciences

3.Interdependent Relationships in Ecosystems. 3-LS2-1. Construct an argument that some animals form groups that help members survive. 3-LS4-1. Analyze and interpret data from fossils to provide evidence of the organisms and the environments in which they lived long ago. 3-LS4-3. Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all. 3-LS4-4. Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.

3.Inheritance and Variation of Traits: Life Cycles and Traits. 3-LS1-1. Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death. 3-LS3-1. Analyze and interpret data to provide evidence that plants and animals have traits inherited from parents and that variation of these traits exists in a group of similar organisms. 3-LS3-2. Use evidence to support the explanation that traits can be influenced by the environment. 3-LS4-2. Use evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing.

<u>Oral Exercises:</u> Seamlessly respond to the instructor's "choral call" with a "choral response." Discriminate between "whole group" and "individual" cues; Fluidly recognize the target (individual or group) and respond when nonverbally instructed to do so.

Physical Sciences

3-PS1 Astronomy

3-PS1-1. The Big Bang. Demonstrate a conceptual understanding of the Big Bang, the expansion of the universe, and how this process could ultimately lead to the formation of galaxies. Support an argument that differences in the apparent brightness of the sun compared to other stars is due to their relative distances from Earth (NGSS 5-ESS1-1).

3-PS2 Earth Science

- **3-PS2-1.** The Earth's Internal Properties. Describe how seismic waves can lead to earthquakes and tsunamis. Build a model of Earth's internal layers. Understand the theories of continental drift and plate tectonics.
- **3-PS2-2.** Weather, Water and Surface Processes. Form a model of cloud development and identify various cloud formations and classes of clouds. Understand the fundamentals of weather forecasting. Articulate the connection between air behavior and atmospheric stability. Describe the terms: air masses, fronts, and storms. Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season (NGSS 3-ESS2-1). Obtain and combine information to describe climates in different regions of the world (NGSS 3-ESS2-2). Make a claim about the merit of a design solution that reduces the impacts of a weather-related hazard (NGSS 3-ESS2-2). Describe and graph the amounts and percentages of water and fresh water in various reservoirs to provide evidence about the distribution of water on Earth (NGSS 5-ESS2-2). Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment (NGSS 5-ESS3-1).

3-PS3 Chemistry

- **3-PS3-1.** Chemical Bonding. Define the terms: metals, alloys, and molecular polarity. Understand the differences and similarities between ionic bonds, covalent bonds, and hydrogen bonds. Give examples of how molecular polarity can alter chemical processes. Develop models to describe the atomic composition of simple molecules and extended structures (NGSS MS-PS1-1). Develop and use a model to describe how the total number of atoms does not change in a chemical reaction and thus mass is conserved (NGSS MS-PS1-5).
- **3-PS3-2.** Molecular Mixing. Describe the role of molecular interactions in molecular mixing. Understand the differences between solutions and solubility. Explain how soap works. Understand the chemical basis of how hard water leads to soap scum. Describe how surface tension and capillary action contribute to life processes. Gather and make sense of information to describe that synthetic materials come from natural resources and impact society MS-PS1-3). Analyze and interpret data on the properties of substances before and after the substances interact to determine if a chemical reaction has occurred (NGSS MS-PS1-2).

Life Sciences

3-LS1 Ecology

3-LS1-1. Interdependent Relationships in Ecosystems. Construct an argument that some animals form groups that help members survive (NGSS 3-LS2-1). Analyze and interpret data from fossils to provide evidence of the organisms and the environments in which they lived long ago (NGSS 3-LS4-1). Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all (NGSS 3-LS4-3). Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change (NGSS 3-LS4-4).

3-LS2 Inheritance and Variation of Traits

3-LS2-1. Life Cycles and Traits. Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death (NGSS 3-LS1-1). Analyze and interpret data to provide evidence that plants and animals have traits inherited from parents and that variation of these traits exists in a group of similar organisms (NGSS 3-LS3-1). Use evidence to support the explanation that traits can be influenced by the environment (NGSS 3-LS3-2). Use evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing (NGSS 3-LS4-2).

<u>Prior Knowledge / Prerequisite Comprehension / Skill Retention-reactivation:</u> Before providing instruction in the following objectives, the instructor shall assess students' retention and facility with objectives articulated for prior grades and review or reteach where indicated. To satisfy science requirements for the current grade, students shall demonstrate mastery in objectives articulated for prior grades along with those articulated for the current grade. In addition, students must demonstrate competence and/or mastery in all objectives articulated in the Next Generation Science Standards:

NGSS Physical Sciences

- 4. Energy: 4-PS3-1. Use evidence to construct an explanation relating the speed of an object to the energy of that object. 4-PS3-2. Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents. 4-PS3-3. Ask questions and predict outcomes about the changes in energy that occur when objects collide. 4-PS3-4. Apply scientific ideas to design, test, and refine a device that converts energy from one form to another. 4-ESS3-1. Obtain and combine information to describe that energy and fuels are derived from natural resources and their uses affect the environment.
- 4. Waves: Waves and Information: 4-PS4-1. Develop a model of waves to describe patterns in terms of amplitude and wavelength and that waves can cause objects to move. 4-PS4-3. Generate and compare multiple solutions that use patterns to transfer information.
- 4.Structure, Function, and Information Processing: 4-PS4-2. Develop a model to describe that light reflecting from objects and entering the eye allows objects to be seen. 4-LS1-1. Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction. 4-LS1-2. Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways.
- 4.Earth's Systems: Processes that Shape the Earth:4-ESS1-1. Identify evidence from patterns in rock formations and fossils in rock layers to support an explanation for changes in a landscape over time. 4-ESS2-1. Make observations and/or measurements to provide evidence of the effects of weathering or the rate of erosion by water, ice, wind, or vegetation. 4-ESS2-2. Analyze and interpret data from maps to describe patterns of Earth's features. 4-ESS3-2. Generate and compare multiple solutions to reduce the impacts of natural Earth processes on humans.

NGSS Life Sciences

4.Structure, Function, and Information Processing. 4-PS4-2. Develop a model to describe that light reflecting from objects and entering the eye allows objects to be seen. 4-LS1-1. Construct an argument that plants and

animals have internal and external structures that function to support survival, growth, behavior, and reproduction. 4-LS1-2. Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways.

<u>Oral Exercises:</u> Seamlessly respond to the instructor's "choral call" with a "choral response." Discriminate between "whole group" and "individual" cues; Fluidly recognize the target (individual or group) and respond when nonverbally instructed to do so.

Physical Sciences

4-PS1 Astronomy

4-PS1-1. Space Systems. Explain the causes of lunar eclipses and solar eclipses. Develop and use a model to describe the role of gravity in the motions within galaxies and the solar system (NGSS MS-ESS1-2). Explain the conceptual difference between temperature and heat. Analyze and interpret data to determine scale properties of objects in the solar system (NGSS MS-ESS1-3).

4-PS2 Heat

- **4-PS2-1.** Temperature and Heat. Describe, compare, and convert between Fahrenheit, Celsius, and Kelvin temperature scales. Explain why the heat units between the different scales vary. Demonstrate knowledge of absolute zero.
- **4-PS2-2.** Thermal Energy and Changes of Phase. Define thermal energy. Relate specific heat capacity to thermal expansion and give examples of each from everyday life. Name the changes of phase, the factors that can cause phase changes, and how it relates to energy. Undertake a design project to construct, test, and modify a device that either releases or absorbs thermal energy by chemical processes (NGSS MS-PS1-6). Apply scientific principles to design, construct, and test a device that either minimizes or maximizes thermal energy transfer (NGSS MS-PS3-2).

4-PS3 Earth Science

- **4-PS3-1.** Rocks and Minerals. Define the differences between, and give examples of, rocks and minerals. Form a model of the building blocks of rock-forming minerals. Describe the formation processes of igneous rocks, sedimentary rocks, and metamorphic rocks. Understand the rock cycle.
- **4-PS3-2.** Processes that Shape the Earth. Identify evidence from patterns in rock formations and fossils in rock layers to support an explanation for changes in a landscape over time (NGSS 4-ESS1-1). Make observations and/or measurements to provide evidence of the effects of weathering or the rate of erosion by water, ice, wind, or vegetation (NGSS 4-ESS2-1). Analyze and interpret data from maps to describe patterns of Earth's features (NGSS 4-ESS2-2). Generate and compare multiple solutions to reduce the impacts of natural Earth processes on humans (NGSS 4-ESS3-2). Represent data in graphical displays to reveal patterns of daily changes in length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky (NGSS 5-ESS1-2.).

Life Sciences

4-LS1 Anatomy and Physiology

4-LS1-1. Structure, Function, and Information Processing. Label a given diagram of: the human skeletal system, the human muscular system, and the human circulatory system. Develop a model to describe that light reflecting from objects and entering the eye allows objects to be seen (NGSS 4-PS4-2). Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction (NGSS 4-LS1-1). Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways (NGSS 4-LS1-1).

<u>Prior Knowledge / Prerequisite Comprehension / Skill Retention-reactivation:</u> Before providing instruction in the following objectives, the instructor shall assess students' retention and facility with objectives articulated for prior grades and review or reteach where indicated. To satisfy science requirements for the current grade, students shall demonstrate mastery in objectives articulated for prior grades along with those articulated for the current grade. In addition, students must demonstrate competence and/or mastery in all objectives articulated in the Next Generation Science Standards:

NGSS Physical Sciences

- 5.Structure and Properties of Matter: 5-PS1-1. Develop a model to describe that matter is made of particles too small to be seen. 5-PS1-2. Measure and graph quantities to provide evidence that regardless of the type of change that occurs when heating, cooling, or mixing substances, the total weight of matter is conserved. 5-PS1-3. Make observations and measurements to identify materials based on their properties. 5-PS1-4. Conduct an investigation to determine whether the mixing of two or more substances results in new substances.
- 5.Matter and Energy in Organisms and Ecosystems: 5-PS3-1. Use models to describe that energy in animals' food (used for body repair, growth, motion, and to maintain body warmth) was once energy from the sun. 5-LS1-1. Support an argument that plants get the materials they need for growth chiefly from air and water. 5-LS2-1. Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.
- 5.Earth's Systems: 5-ESS2-1. Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact. 5-ESS2-2. Describe and graph the amounts and percentages of water and fresh water in various reservoirs to provide evidence about the distribution of water on Earth. 5-ESS3-1. Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment.
- 5.Space Systems: Stars and the Solar System: 5-PS2-1. Support an argument that the gravitational force exerted by Earth on objects is directed down. 5-ESS1-1. Support an argument that differences in the apparent brightness of the sun compared to other stars is due to their relative distances from Earth. 5-ESS1-2. Represent data in graphical displays to reveal patterns of daily changes in length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky.

NGSS Life Sciences

5.Matter and Energy in Organisms and Ecosystems. 5-PS3-1. Use models to describe that energy in animals' food (used for body repair, growth, motion, and to maintain body warmth) was once energy from the sun. 5-LS1-1. Support an argument that plants get the materials they need for growth chiefly from air and water. 5-LS2-1. Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.

<u>Oral Exercises:</u> Seamlessly respond to the instructor's "choral call" with a "choral response." Discriminate between "whole group" and "individual" cues; Fluidly recognize the target (individual or group) and respond when nonverbally instructed to do so.

Physical Sciences

5-PS1 Chemistry

5-PS1-1. Chemical Reactions. Read and interpret chemical equations. Understand the role energy plays in driving and preventing chemical reactions from occurring, as well as in maintaining chemical equilibrium. General understanding of the relative masses of various atoms and molecules. Conceptualize Avogadro's number and the mole as a unit of measurement

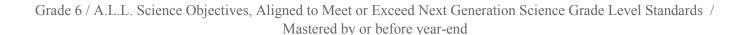
5-PS2 Heat

- **5-PS2-1**. Heat Transfer. Apply knowledge of heat transfer to concepts including conduction, convection, and radiation. Distinguish between conduction, convection, and radiation. Provide examples of how each can be used to cook food, and the benefits and drawbacks each method provides.
- **5-PS2-2.** Thermodynamics. Conceptually understand the First Law of Thermodynamics and the Second Law of Thermodynamics. Demonstrate knowledge of entropy, that order tends to disorder, and what this implies for everyday life and the universe more generally.

5-PS3 Mechanics

- **5-PS3-1.** Gravity. Understand and describe the law of universal gravitation. Recognize the role played by gravity in the ties of the ocean. Conceptualize weight and weightlessness in relation to mass. Support an argument that the gravitational force exerted by Earth on objects is directed down (NGSS 5-PS2-1). Construct and present arguments using evidence to support the claim that gravitational interactions are attractive and depend on the masses of interacting objects (NGSS MS-PS2-4).
- **5-PS3-2.** Satellite Motion. Understand the relationship between satellite motion and projectile motion. Conceptualize the role conservation of energy plays in satellite motion. Define escape speed and describe the implications this has for massive space ships and astronauts wishing to leave the Earth.

5-LS1 Ecology
5-LS1-1. Matter and Energy in Organisms and Ecosystems. Use models to describe that energy in animals' food (used for body repair, growth, motion, and to maintain body warmth) was once energy from the sun (NGSS 5-PS3-1). Support an argument that plants get the materials they need for growth chiefly from air and water (NGSS 5-LS1-1). Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment (NGSS 5-LS1-1).



<u>Prior Knowledge / Prerequisite Comprehension / Skill Retention-reactivation:</u> Before providing instruction in the following objectives, the instructor shall assess students' retention and facility with objectives articulated for prior grades and review or reteach where indicated. To satisfy science requirements for the current grade, students shall demonstrate mastery in objectives articulated for prior grades along with those articulated for the current grade. In addition, students must demonstrate competence and/or mastery in all objectives articulated in the Next Generation Science Standards for middle school students by the end of Grade 8:

MS.Structure and Properties of Matter: MS-PS1-1. Develop models to describe the atomic composition of simple molecules and extended structures. MS-PS1-3. Gather and make sense of information to describe that synthetic materials come from natural resources and impact society. MS-PS1-4. Develop a model that predicts and describes changes in particle motion, temperature, and state of a pure substance when thermal energy is added or removed.

MS.Chemical Reactions: MS-PS1-2. Analyze and interpret data on the properties of substances before and after the substances interact to determine if a chemical reaction has occurred. MS-PS1-5. Develop and use a model to describe how the total number of atoms does not change in a chemical reaction and thus mass is conserved. MS-PS1-6. Undertake a design project to construct, test, and modify a device that either releases or absorbs thermal energy by chemical processes.

MS.Forces and Interactions: MS-PS2-1. Apply Newton's Third Law to design a solution to a problem involving the motion of two colliding objects. MS-PS2-2. Plan an investigation to provide evidence that the change in an object's motion depends on the sum of the forces on the object and the mass of the object. MS-PS2-3. Ask questions about data to determine the factors that affect the strength of electric and magnetic forces. MS-PS2-4. Construct and present arguments using evidence to support the claim that gravitational interactions are attractive and depend on the masses of interacting objects. MS-PS2-5. Conduct an investigation and evaluate the experimental design to provide evidence that fields exist between objects exerting forces on each other even though the objects are not in contact.

MS.Energy: MS-PS3-1. Construct and interpret graphical displays of data to describe the relationships of kinetic energy to the mass of an object and to the speed of an object. MS-PS3-2. Develop a model to describe that when the arrangement of objects interacting at a distance changes, different amounts of potential energy are stored in the system. MS-PS3-3. Apply scientific principles to design, construct, and test a device that either minimizes or maximizes thermal energy transfer. MS-PS3-4. Plan an investigation to determine the relationships among the energy transferred, the type of matter, the mass, and the change in the average kinetic energy of the particles as measured by the temperature of the sample. MS-PS3-5. Construct, use, and present arguments to support the claim that when the kinetic energy of an object changes, energy is transferred to or from the object.

MS. Waves and Electromagnetic Radiation: MS-PS4-1. Use mathematical representations to describe a simple model for waves that includes how the amplitude of a wave is related to the energy in a wave. MS-PS4-2. Develop and use a model to describe that waves are reflected, absorbed, or transmitted through various materials. MS-PS4-3. Integrate qualitative scientific and technical information to support the claim that digitized signals are a more reliable way to encode and transmit information than analog signals.

MS.Structure, Function, and Information Processing: MS-LS1-1. Conduct an investigation to provide evidence that living things are made of cells; either one cell or many different numbers and types of cells. MS-LS1-2. Develop and use a model to describe the function of a cell as a whole and ways parts of cells contribute to the function. MS-LS1-3. Use argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells. MS-LS1-8. Gather and synthesize information that sensory receptors respond to stimuli by sending messages to the brain for immediate behavior or storage as memories.

MS.Matter and Energy in Organisms and Ecosystems: MS-LS1-6. Construct a scientific explanation based on evidence for the role of photosynthesis in the cycling of matter and flow of energy into and out of organisms. MS-LS1-7. Develop a model to describe how food is rearranged through chemical reactions forming new molecules that support growth and/or release energy as this matter moves through an organism. MS-LS2-1. Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem. MS-LS2-3. Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem. MS-LS2-4. Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.

MS.Interdependent Relationships in Ecosystems: MS-LS2-2. Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems. MS-LS2-5. Evaluate competing design solutions for maintaining biodiversity and ecosystem services.

MS.Growth, Development, and Reproduction of Organisms: MS-LS1-4. Use argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants respectively. MS-LS1-5. Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms. MS-LS3-1. Develop and use a model to describe why structural changes to genes (mutations) located on chromosomes may affect proteins and may result in harmful, beneficial, or neutral effects to the structure and function of the organism. MS-LS3-2. Develop and use a model to describe why asexual reproduction results in offspring with identical genetic information and sexual reproduction results in

offspring with genetic variation. MS-LS4-5. Gather and synthesize information about the technologies that have changed the way humans influence the inheritance of desired traits in organisms.

MS.Natural Selection and Adaptations: MS-LS4-1. Analyze and interpret data for patterns in the fossil record that document the existence, diversity, extinction, and change of life forms throughout the history of life on Earth under the assumption that natural laws operate today as in the past. MS-LS4-2. Apply scientific ideas to construct an explanation for the anatomical similarities and differences among modern organisms and between modern and fossil organisms to infer evolutionary relationships. MS-LS4-3. Analyze displays of pictorial data to compare patterns of similarities in the embryological development across multiple species to identify relationships not evident in the fully formed anatomy. MS-LS4-4. Construct an explanation based on evidence that describes how genetic variations of traits in a population increase some individuals' probability of surviving and reproducing in a specific environment. MS-LS4-6. Use mathematical representations to support explanations of how natural selection may lead to increases and decreases of specific traits in populations over time.

MS.Space Systems: MS-ESS1-1. Develop and use a model of the Earth-sun-moon system to describe the cyclic patterns of lunar phases, eclipses of the sun and moon, and seasons. MS-ESS1-2. Develop and use a model to describe the role of gravity in the motions within galaxies and the solar system. MS-ESS1-3. Analyze and interpret data to determine scale properties of objects in the solar system.

MS.History of Earth: MS-ESS1-4. Construct a scientific explanation based on evidence from rock strata for how the geologic time scale is used to organize Earth's 4.6-billion-year-old history. MS-ESS2-2. Construct an explanation based on evidence for how geoscience processes have changed Earth's surface at varying time and spatial scales. MS-ESS2-3. Analyze and interpret data on the distribution of fossils and rocks, continental shapes, and seafloor structures to provide evidence of the past plate motions.

MS.Earth's Systems: MS-ESS2-1. Develop a model to describe the cycling of Earth's materials and the flow of energy that drives this process. MS-ESS2-4. Develop a model to describe the cycling of water through Earth's systems driven by energy from the sun and the force of gravity. MS-ESS3-1. Construct a scientific explanation based on evidence for how the uneven distributions of Earth's mineral, energy, and groundwater resources are the result of past and current geoscience processes.

MS. Weather and Climate: MS-ESS2-5. Collect data to provide evidence for how the motions and complex interactions of air masses results in changes in weather conditions. MS-ESS2-6. Develop and use a model to describe how unequal heating and rotation of the Earth cause patterns of atmospheric and oceanic circulation that determine regional climates. MS-ESS3-5. Ask questions to clarify evidence of the factors that have caused the rise in global temperatures over the past century.

MS.Human Impacts: MS-ESS3-2. Analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects. MS-ESS3-3. Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment. MS-ESS3-4. Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth's systems.

Science Olympiad / Model Building / Authentic Experiments: All Grade 6 students will participate in one of ALL's Science Olympiad teams, and are expected to compete in the state-level Science Olympiad competition held every late February/early March. Each year, the Science Olympiad organization designates 20-30 modules ranging from robotbuilding to ornithology (the study of birds); teams of two students prepare for, and then compete in, each module. Students typically participate in multiple modules. The motivation behind compulsory participation in what is typically considered an extracurricular activity is two fold: 1. Benefits to the community: Both across and within grades, and between students and teachers, school-wide (for the upper grades) participation the Science Olympiad competition creates a cohesion in the community that would be difficult, if not impossible, to build otherwise. By framing the learning and practice of STEM subjects as a competition with other schools, we are able to harness the type of goal-directed "all-in" mentality (often seen in sports) in a rigorous academic setting. 2. Benefits to individual students: As a supplement to classroom-taught science courses, Science Olympiad offers a number of benefits including the ability to select the modules (i.e. subjects) of study for him or herself, skills associated in working in a team for an extended period of time, and an understanding of science and engineering as processes that require patience, persistence, and creative problem solving. Importantly, as compare to classroom teaching, this experience is closer to what professional scientists and engineers do on a daily basis. For instance, rather than students performing an assigned experiment to which the answer is known (e.g. the force of gravity on Earth), students must design, refine, and test their own experiments, for which the answer or outcome is unknown. This is especially true to the engineering modules (e.g. building an ultra-light rubber band powered plane that stays aloft for the longest amount of time). In addition, students will learn self-motivation since each, along with his or her teammate, is largely responsible for their ultimate performance at the yearly competition.

Physical Sciences

6-PS1 Electricity and Magnetism

6-PS1-1. Electricity. In written and oral presentation, define the terms: electric current, electrical resistance, electric circuits, and electric power. Conduct an investigation and evaluate the experimental design to provide evidence that fields exist between objects exerting forces on each other even though the objects are not in contact (NGSS MS-PS2-5). Ask questions about data to determine the factors that affect the strength of electric and magnetic forces (NGSS MS-PS2-3).

6-PS1-2. Magnetism. Understand the mathematic basis for the connection between magnetic fields and electric currents. Conceptualize field induction and power production. Define Generators and alternating current. Use mathematical representations to describe a simple model for waves that includes how the amplitude of a wave is related to the energy in a wave (NGSS MS-PS4-1). Develop and use a model to describe that waves are reflected, absorbed, or transmitted through various materials (NGSS MS-PS4-2). Integrate qualitative scientific and technical information to support the claim that digitized signals are a more reliable way to encode and transmit information than analog signals (NGSS MS-PS4-3).

6-PS2 Earth Science

6-PS2-1. Earth's Systems. Describe the hydrologic cycle. Understand why topography is important in looking for groundwater, and what determines the quality of water. Design a model of a city drainage system that utilizes surface water. Define the following terms: glaciers, glaciation, and topography. Name the oceans of the world and how their

currents shape shorelines. Develop a model to describe the cycling of Earth's materials and the flow of energy that drives this process (NGSS MS-ESS2-1). Develop a model to describe the cycling of water through Earth's systems driven by energy from the sun and the force of gravity (NGSS MS-ESS2-4). Construct a scientific explanation based on evidence for how the uneven distributions of Earth's mineral, energy, and groundwater resources are the result of past and current geoscience processes (NGSS MS-ESS2-4).

6-PS3 Chemistry

6-PS3-1. Acid, Base, and Redox Reactions. Be able to define of acids and bases at the molecular level, as well as their properties. Understand the chemical basis for, and societal concern over, acid rain and basic oceans. Construct a scientific explanation based on evidence for the oxidizing power of oxygen. Gather and make sense of pH tests to describe the properties of a given substance. In written form and oral presentation, demonstrate comprehension of the terms: electrochemistry, buffers, and oxidation-reduction reactions.

Life Sciences

6-LS1 Cell Biology

6-LS1-1. Structure, Function, and Information Processing. Label the various organelles on a given diagram of a eukaryotic cell. State the role of each of the major organelles including: mitochondria, nucleus, lysosome, chloroplast, endoplasmic reticulum, Golgi apparatus, and nucleolus. Conduct an investigation to provide evidence that living things are made of cells; either one cell or many different numbers and types of cells (NGSS MS-LS1-1). Develop and use a model to describe the function of a cell as a whole and ways parts of cells contribute to the function (NGSS MS-LS1-2). Use argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells (NGSS MS-LS1-3). Gather and synthesize information that sensory receptors respond to stimuli by sending messages to the brain for immediate behavior or storage as memories (NGSS MS-LS1-3).

Grade 7 / A.L.L. Science Objectives, Aligned to Meet or Exceed Next Generation Science Grade Level Standards /
Mastered by or before year-end
Prior Knowledge / Prerequisite Comprehension / Skill Retention-reactivation: Before providing instruction in the following objectives, the instructor shall assess students' retention and facility with objectives articulated for prior grades and review or reteach where indicated. To satisfy science requirements for the current grade, students shall demonstrate mastery in objectives articulated for prior grades along with those articulated for the current grade. In addition, students must demonstrate competence and/or mastery in all objectives articulated in the Next Generation Science Standards for middle school students by the end of Grade 8:
MS.Structure and Properties of Matter: MS-PS1-1. Develop models to describe the atomic composition of simple molecules and extended structures. MS-PS1-3. Gather and make sense of information to describe that synthetic materials come from natural resources and impact society. MS-PS1-4. Develop a model that predicts and
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describes changes in particle motion, temperature, and state of a pure substance when thermal energy is added or removed.

MS.Chemical Reactions: MS-PS1-2. Analyze and interpret data on the properties of substances before and after the substances interact to determine if a chemical reaction has occurred. MS-PS1-5. Develop and use a model to describe how the total number of atoms does not change in a chemical reaction and thus mass is conserved. MS-PS1-6. Undertake a design project to construct, test, and modify a device that either releases or absorbs thermal energy by chemical processes.

MS.Forces and Interactions: MS-PS2-1. Apply Newton's Third Law to design a solution to a problem involving the motion of two colliding objects. MS-PS2-2. Plan an investigation to provide evidence that the change in an object's motion depends on the sum of the forces on the object and the mass of the object. MS-PS2-3. Ask questions about data to determine the factors that affect the strength of electric and magnetic forces. MS-PS2-4. Construct and present arguments using evidence to support the claim that gravitational interactions are attractive and depend on the masses of interacting objects. MS-PS2-5. Conduct an investigation and evaluate the experimental design to provide evidence that fields exist between objects exerting forces on each other even though the objects are not in contact.

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interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem. MS-LS2-3. Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem. MS-LS2-4. Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.

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MS.History of Earth: MS-ESS1-4. Construct a scientific explanation based on evidence from rock strata for how the geologic time scale is used to organize Earth's 4.6-billion-year-old history. MS-ESS2-2. Construct an explanation based on evidence for how geoscience processes have changed Earth's surface at varying time and spatial scales. MS-ESS2-3. Analyze and interpret data on the distribution of fossils and rocks, continental shapes, and seafloor structures to provide evidence of the past plate motions.

MS.Earth's Systems: MS-ESS2-1. Develop a model to describe the cycling of Earth's materials and the flow of energy that drives this process. MS-ESS2-4. Develop a model to describe the cycling of water through Earth's

systems driven by energy from the sun and the force of gravity. MS-ESS3-1. Construct a scientific explanation based on evidence for how the uneven distributions of Earth's mineral, energy, and groundwater resources are the result of past and current geoscience processes.

MS. Weather and Climate: MS-ESS2-5. Collect data to provide evidence for how the motions and complex interactions of air masses results in changes in weather conditions. MS-ESS2-6. Develop and use a model to describe how unequal heating and rotation of the Earth cause patterns of atmospheric and oceanic circulation that determine regional climates. MS-ESS3-5. Ask questions to clarify evidence of the factors that have caused the rise in global temperatures over the past century.

MS.Human Impacts: MS-ESS3-2. Analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects. MS-ESS3-3. Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment. MS-ESS3-4. Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth's systems.

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Physical Sciences

7-PS1 Mechanics

7-PS1-1. Newton's Laws of Motion. In written form and oral presentation, be able to define and explain Newton's First Law of Motion, Newton's Second Law of Motion, and Newton's Third Law of Motion. Use equations derived from Newton's laws of motion to solve for speed, force, distance, and acceleration. Apply Newton's Third Law to design a solution to a problem involving the motion of two colliding objects (NGSS MS-PS2-1). Plan an investigation to provide evidence that the change in an object's motion depends on the sum of the forces on the object and the mass of the object (NGSS MS-PS2-2).

7-PS2 Chemistry

- **7-PS2-1.** Organic Chemistry. Understand the role played by hydrocarbons in life processes. Discriminate between hydrocarbons and unsaturated hydrocarbons at the molecular level. Demonstrate awareness of noncarbon atoms in organic molecules and carbonyl-containing organic molecules. In written form and oral presentation, demonstrate comprehension of the terms: alcohols, phenols, ethers, and amines. Describe and compare the creation of modified natural polymers and synthetic polymers.
- **7.PS2-2.** The Atomic Nucleus. Understand the role of radiation in both natural and artificial transmutation of elements, and describe how each occurs. Understand how the concept of "half-life" is used by scientists in isotopic dating of materials. In written and oral presentation, describe the difference between nuclear fission and nuclear fusion. Understand the mass-energy relationship with regards to nuclear decay.

7-PS3 Earth Science

7-PS3-1. Earth's Climate and Weather. Perform calculations commonly utilized in weather forecasting. Conceptualize the current scientific consensus on how human activity has lead to global climate change. Understand how air behavior contributes to atmospheric stability. Collect data to provide evidence for how the motions and complex interactions of air masses results in changes in weather conditions (NGSS MS-ESS2-5). Develop and use a model to describe how unequal heating and rotation of the Earth cause patterns of atmospheric and oceanic circulation that determine regional climates (NGSS MS-ESS2-6). Ask questions to clarify evidence of the factors that have caused the rise in global temperatures over the past century (NGSS MS-ESS3-5).

Life Sciences

7-LS1 Ecology

7-LS1-1. Matter and Energy in Organisms and Ecosystems. Construct a scientific explanation based on evidence for the role of photosynthesis in the cycling of matter and flow of energy into and out of organisms (NGSS MS-LS1-6). Develop a model to describe how food is rearranged through chemical reactions forming new molecules that support growth and/or release energy as this matter moves through an organism (NGSS MS-LS1-7). Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem (NGSS MS-LS2-1). Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem (NGSS MS-LS2-3). Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations (NGSS MS-LS2-4).

7-LS1-2. Interdependent Relationships in Ecosystems. Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems (NGSS MS-LS2-2). Evaluate competing design solutions for maintaining biodiversity and ecosystem services (NGSS MS-LS2-5).



Grade 8 / A.L.L. Science Objectives, Aligned to Meet or Exceed Next Generation Science Grade Level Standards / Mastered by or before year-end

<u>Prior Knowledge / Prerequisite Comprehension / Skill Retention-reactivation:</u> Before providing instruction in the following objectives, the instructor shall assess students' retention and facility with objectives articulated for prior grades and review or reteach where indicated. To satisfy science requirements for the current grade, students shall demonstrate mastery in objectives articulated for prior grades along with those articulated for the current grade. In addition, students must demonstrate competence and/or mastery in all objectives articulated in the Next Generation Science Standards for middle school students by the end of Grade 8:

MS.Structure and Properties of Matter: MS-PS1-1. Develop models to describe the atomic composition of simple molecules and extended structures. MS-PS1-3. Gather and make sense of information to describe that synthetic materials come from natural resources and impact society. MS-PS1-4. Develop a model that predicts and describes changes in particle motion, temperature, and state of a pure substance when thermal energy is added or removed.

MS.Chemical Reactions: MS-PS1-2. Analyze and interpret data on the properties of substances before and after the substances interact to determine if a chemical reaction has occurred. MS-PS1-5. Develop and use a model to describe how the total number of atoms does not change in a chemical reaction and thus mass is conserved. MS-PS1-6. Undertake a design project to construct, test, and modify a device that either releases or absorbs thermal energy by chemical processes.

MS.Forces and Interactions: MS-PS2-1. Apply Newton's Third Law to design a solution to a problem involving the motion of two colliding objects. MS-PS2-2. Plan an investigation to provide evidence that the change in an object's motion depends on the sum of the forces on the object and the mass of the object. MS-PS2-3. Ask questions about data to determine the factors that affect the strength of electric and magnetic forces. MS-PS2-4. Construct and present arguments using evidence to support the claim that gravitational interactions are attractive and depend on the masses of interacting objects. MS-PS2-5. Conduct an investigation and evaluate the experimental design to provide evidence that fields exist between objects exerting forces on each other even though the objects are not in contact.

MS.Energy: MS-PS3-1. Construct and interpret graphical displays of data to describe the relationships of kinetic energy to the mass of an object and to the speed of an object. MS-PS3-2. Develop a model to describe that when the arrangement of objects interacting at a distance changes, different amounts of potential energy are stored in the system. MS-PS3-3. Apply scientific principles to design, construct, and test a device that either minimizes or maximizes thermal energy transfer. MS-PS3-4. Plan an investigation to determine the relationships among the energy transferred, the type of matter, the mass, and the change in the average kinetic energy of the particles as

measured by the temperature of the sample. MS-PS3-5. Construct, use, and present arguments to support the claim that when the kinetic energy of an object changes, energy is transferred to or from the object.

MS. Waves and Electromagnetic Radiation: MS-PS4-1. Use mathematical representations to describe a simple model for waves that includes how the amplitude of a wave is related to the energy in a wave. MS-PS4-2. Develop and use a model to describe that waves are reflected, absorbed, or transmitted through various materials. MS-PS4-3. Integrate qualitative scientific and technical information to support the claim that digitized signals are a more reliable way to encode and transmit information than analog signals.

MS.Structure, Function, and Information Processing: MS-LS1-1. Conduct an investigation to provide evidence that living things are made of cells; either one cell or many different numbers and types of cells. MS-LS1-2. Develop and use a model to describe the function of a cell as a whole and ways parts of cells contribute to the function. MS-LS1-3. Use argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells. MS-LS1-8. Gather and synthesize information that sensory receptors respond to stimuli by sending messages to the brain for immediate behavior or storage as memories.

MS.Matter and Energy in Organisms and Ecosystems: MS-LS1-6. Construct a scientific explanation based on evidence for the role of photosynthesis in the cycling of matter and flow of energy into and out of organisms. MS-LS1-7. Develop a model to describe how food is rearranged through chemical reactions forming new molecules that support growth and/or release energy as this matter moves through an organism. MS-LS2-1. Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem. MS-LS2-3. Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem. MS-LS2-4. Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.

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MS.Growth, Development, and Reproduction of Organisms: MS-LS1-4. Use argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants respectively. MS-LS1-5. Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms. MS-LS3-1. Develop and use a model to describe why structural changes to genes (mutations) located on chromosomes may affect proteins and may result in harmful, beneficial, or neutral effects to the structure and function of the organism. MS-LS3-2. Develop and use a model to describe why asexual reproduction results in offspring with identical genetic information and sexual reproduction results in offspring with genetic variation. MS-LS4-5. Gather and synthesize information about the technologies that have changed the way humans influence the inheritance of desired traits in organisms.

MS.Natural Selection and Adaptations: MS-LS4-1. Analyze and interpret data for patterns in the fossil record that document the existence, diversity, extinction, and change of life forms throughout the history of life on Earth under the assumption that natural laws operate today as in the past. MS-LS4-2. Apply scientific ideas to construct an explanation for the anatomical similarities and differences among modern organisms and between modern and

fossil organisms to infer evolutionary relationships. MS-LS4-3. Analyze displays of pictorial data to compare patterns of similarities in the embryological development across multiple species to identify relationships not evident in the fully formed anatomy. MS-LS4-4. Construct an explanation based on evidence that describes how genetic variations of traits in a population increase some individuals' probability of surviving and reproducing in a specific environment. MS-LS4-6. Use mathematical representations to support explanations of how natural selection may lead to increases and decreases of specific traits in populations over time.

MS.Space Systems: MS-ESS1-1. Develop and use a model of the Earth-sun-moon system to describe the cyclic patterns of lunar phases, eclipses of the sun and moon, and seasons. MS-ESS1-2. Develop and use a model to describe the role of gravity in the motions within galaxies and the solar system. MS-ESS1-3. Analyze and interpret data to determine scale properties of objects in the solar system.

MS.History of Earth: MS-ESS1-4. Construct a scientific explanation based on evidence from rock strata for how the geologic time scale is used to organize Earth's 4.6-billion-year-old history. MS-ESS2-2. Construct an explanation based on evidence for how geoscience processes have changed Earth's surface at varying time and spatial scales. MS-ESS2-3. Analyze and interpret data on the distribution of fossils and rocks, continental shapes, and seafloor structures to provide evidence of the past plate motions.

MS.Earth's Systems: MS-ESS2-1. Develop a model to describe the cycling of Earth's materials and the flow of energy that drives this process. MS-ESS2-4. Develop a model to describe the cycling of water through Earth's systems driven by energy from the sun and the force of gravity. MS-ESS3-1. Construct a scientific explanation based on evidence for how the uneven distributions of Earth's mineral, energy, and groundwater resources are the result of past and current geoscience processes.

MS. Weather and Climate: MS-ESS2-5. Collect data to provide evidence for how the motions and complex interactions of air masses results in changes in weather conditions. MS-ESS2-6. Develop and use a model to describe how unequal heating and rotation of the Earth cause patterns of atmospheric and oceanic circulation that determine regional climates. MS-ESS3-5. Ask questions to clarify evidence of the factors that have caused the rise in global temperatures over the past century.

MS.Human Impacts: MS-ESS3-2. Analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects. MS-ESS3-3. Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment. MS-ESS3-4. Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth's systems.

Science Olympiad / Model Building / Authentic Experiments: All Grade 8 students will participate in one of ALL's Science Olympiad teams, and are expected to compete in the state-level Science Olympiad competition held every late February/early March. Each year, the Science Olympiad organization designates 20-30 modules ranging from robot-building to ornithology (the study of birds); teams of two students prepare for, and then compete in, each module. Students typically participate in multiple modules. The motivation behind compulsory participation in what is typically considered an extracurricular activity is two fold: 1. Benefits to the community: Both across and within grades, and between students and teachers, school-wide (for the upper grades) participation the Science Olympiad competition creates a cohesion in the community that would be difficult, if not impossible, to build otherwise. By framing the learning and

practice of STEM subjects as a competition with other schools, we are able to harness the type of goal-directed "all-in" mentality (often seen in sports) in a rigorous academic setting. 2. Benefits to individual students: As a supplement to classroom-taught science courses, Science Olympiad offers a number of benefits including the ability to select the modules (i.e. subjects) of study for him or herself, skills associated in working in a team for an extended period of time, and an understanding of science and engineering as processes that require patience, persistence, and creative problem solving. Importantly, as compare to classroom teaching, this experience is closer to what professional scientists and engineers do on a daily basis. For instance, rather than students performing an assigned experiment to which the answer is known (e.g. the force of gravity on Earth), students must design, refine, and test their own experiments, for which the answer or outcome is unknown. This is especially true to the engineering modules (e.g. building an ultra-light rubber band powered plane that stays aloft for the longest amount of time). In addition, students will learn self-motivation since each, along with his or her teammate, is largely responsible for their ultimate performance at the yearly competition.

Physical Sciences

8-PS1 Waves: Sound and Light

8-PS1-1. Light Waves. In written and oral presentation, demonstrate comprehension of the electromagnetic spectrum. Understand the physical differences between transparent and opaque materials. Be able to define the terms "color, diffraction, interference, and polarization" scientifically. Recognize and accurately name reflection, refraction, and dispersion as properties of light. Be able to define "total internal reflection." Understand the optical properties of lenses. Demonstrate cognitive awareness of the wave-particle duality of light.

8-PS1-2. Sound Waves. In written form and oral presentation, demonstrate comprehension of the terms: vibrations, waves, sound waves, reflection of sound, refraction of sound, forced vibrations, resonance, and interference. Discriminate between transverse and longitudinal waves. Understand the physics behind shock waves and the sonic boom. Articulate why a single instrument is able to produce different notes.

8-PS2 Astronomy

8-PS2-1. Relativity and Space-time. Demonstrate a conceptual understanding of space-time, and special relativity. Develop a model of time dilation, length contraction, and relativistic momentum. Conceptually describe and compare special relativity and general relativity. Understand how the equation E=mc^2 relates to mass and energy. Identify the implications of relativity on the expanding universe.

8-PS3 Mechanics

8-PS3-1. Potential Energy and Kinetic Energy. Understand the relationship between potential energy and kinetic energy. Design and perform an experiment that demonstrates the conservation of energy with regards to potential energy and kinetic energy. Construct and interpret graphical displays of data to describe the relationships of kinetic energy to the mass of an object and to the speed of an object (NGSS MS-PS3-1). Develop a model to describe that when the arrangement of objects interacting at a distance changes, different amounts of potential energy are stored in the system (NGSS MS-PS3-2). Plan an investigation to determine the relationships among the energy transferred, the type of matter, the mass, and the change in the average kinetic energy of the particles as measured by the temperature of the sample MS-

PS3-4). Construct, use, and present arguments to support the claim that when the kinetic energy of an object changes, energy is transferred to or from the object (NGSS MS-PS3-5).

8-PS3-2. Fluid Mechanics. Differentiate between pressure in a gas, buoyancy in a liquid, and buoyancy in a gas. Define and provide and illustrative example of the following terms: density, pressure, flotation, and atmospheric pressure. Develop and use a model to describe Archimedes' Principle and Bernoulli's Principle.

Life Sciences

8-LS1 Organismal Biology

8-LS1-1. Growth, Development, and Reproduction of Organisms. Use argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants respectively (NGSS MS-LS1-4). Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms (NGSS MS-LS1-5). Develop and use a model to describe why structural changes to genes (mutations) located on chromosomes may affect proteins and may result in harmful, beneficial, or neutral effects to the structure and function of the organism (NGSS MS-LS3-1). Develop and use a model to describe why asexual reproduction results in offspring with identical genetic information and sexual reproduction results in offspring with genetic variation (NGSS MS-LS3-2). Gather and synthesize information about the technologies that have changed the way humans influence the inheritance of desired traits in organisms (NGSS MS-LS3-2).

8-LS2 Evolutionary Biology

8-LS2-1. Natural Selection and Adaptations. Analyze and interpret data for patterns in the fossil record that document the existence, diversity, extinction, and change of life forms throughout the history of life on Earth under the assumption that natural laws operate today as in the past (NGSS MS-LS3-2). Apply scientific ideas to construct an explanation for the anatomical similarities and differences among modern organisms and between modern and fossil organisms to infer evolutionary relationships (NGSS MS-LS4-2). Analyze displays of pictorial data to compare patterns of similarities in the embryological development across multiple species to identify relationships not evident in the fully formed anatomy (NGSS MS-LS4-2). Construct an explanation based on evidence that describes how genetic variations of traits in a population increase some individuals' probability of surviving and reproducing in a specific environment (NGSS MS-LS4-2). Use mathematical representations to support explanations of how natural selection may lead to increases and decreases of specific traits in populations over time (NGSS MS-LS4-6).

	MATHEMATICS STANDARDS
74 ALL-Hawaii Attachment D:	List of Course & Grade Standards

Kindergarten / A.L.L. Mathematics Objectives, Aligned to Meet or Exceed Common Core Grade Level Standards / Mastered by or before year-end

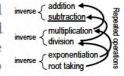
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0	10	20	30	40	50	60	70	80	90
1	11	21	31	41	51	61	71	81	91
2	12	22	32	42	52	62	72	82	92
3	13	23	33	43	53	63	73	83	93
4	14	24	34	44	54	64	74	84	94
5	15	25	35	45	55	65	75	85	95
6	16	26	36	46	56	66	76	86	96
7	17	27	37	47	57	67	77	87	97
8	18	28	38	48	58	68	78	88	98
9	19	29	39	49	59	69	79	89	99
0	10	20	30	40	50	60	70	80	90
1	11	21	31	41	51	61	71	81	91
2	12	22	32	42	52	62	72	82	92
3	13	23	33	43	53	63	73	83	93
4	14	24	34	44	54	64	74	84	94
5	15	25	35	45	55	65	75	85	95
6	16	26	36	46	56	66	76	86	96
7	17	27	37	47	57	67	77	87	97
8	18	28	38	48	58	68	78	88	98
9	19	29	39	49	59	69	79	89	99
0	10	20	30	40	50	60	70	80	90
1	11	21	31	41	51	61	71	81	91
2	12	22	32	42	52	62	72	82	92
3	13	23	33	43	53	63	73	83	93
4	14	24	34	44	54	64	74	84	94
5	15	25	35	45	55	65	75	85	95
6	16	26	36	46	56	66	76	86	96
7	17	21	37	47	57	67	H	87	97
8	18	28	38	48	58	68	78	88	98
9	19	29	39	49	59	69	79	89	99

Oral Exercises: Number Recognition / One-to-one Correspondence / Counting / Enumeration: Count objects and recite number names in sequential order. Use cardinal numbers and ordinal numbers and understand the difference. Demonstrate cognitive awareness of one-to-one correspondence, conservation of quantity, and quantity-number permanence. Understand that for every number there is a number that is one larger; for every number there is one that is one smaller. Discriminate between odd and even numbers. Count up to ten then countdown to negative ten. In written form and oral presentation, demonstrate comprehension of the terms: greater than; less than; equal to. Seamlessly respond to the instructor's "choral call" with a "choral response." Discriminate between "whole group" and "individual" cues; Fluidly recognize the target (individual or group) and respond when nonverbally instructed to do so. Respond to choral calls including: Call any random number 1-50, respond next counting number (e.g., call "4" respond 5; call "2" respond "3"; call "7" respond "8" ...); Call-any random number 1-50, respond next number 2 greater (e.g., call "5" respond "7"; call "2" respond "4"; call "9" respond "11" ...); Call any random number 1-50,, respond next counting number, one less; Call random number 1-50, respond next counting number, two less. Understand the differences and similarities between numbers, numerals, and digits. Recognize and accurately name one and two digit numbers, 0-99 (see: 1-99 place value matrix). Understand that the one in the number 10 indicates that 0-9 has been counted through one time, 20 indicates that 0-9 has been counted through 2 times. Understand that 7 in the number 74 indicates that 0-9 has been counted through 7 times and the 4 indicates that the counting is 4 units (5digits) through the 70's. Understand that the numeral "0" is an initializer representing an empty set. Understand that 80 represents that 0-9 has been counted through 8 times and 0 parts (fractional times) whereas 85 represents that 0-9 has been counted through 8 and one half times. COUNT: by ones 1-10; 1-20; 1-50; 1-100; 1-100. Skip count by 10's to 100; by 100's to 1000; by 1000's to 20,000;

by 5's to 100; by 2's to 100; by 4's to 100; by 11's to 99; by 9's to 99; by 3's to 99; by 6's to 96; by 8's to 96; by 7's to 98. Using a number matrix (0-99), identify counting patterns for each of skip-counting (multiplication) exercise (e.g., 9's count from bottom left diagonally to top right. 11's count from top left diagonally to bottom right. etc.). Count forward and backward from any given number in sequence. From 10 count down to negative 10. Count up beginning with any given number between 0-100. Call-and-response: Call any number between 0-99, respond next higher number. Call-any number between 0-99, respond next lower number. Call any number between 0-99, respond next number two higher. Call any number between 0-99, respond next number two lower. Understand multiplication as repeated addition. Mastery recall single digit multiplication facts including the 5's, 2's, 1's, 0's, 10's, 11's, and 9's. Call-and-respond (using numeric exercises) observations including: One times any quantity is that same quantity; 10 times any whole number is that same number with a zero; Zero times any quantity is zero; 2 times any quantity is that quantity added to its self; 11 times any single digit number is that digit repeated; 11 times any multi-digit whole number, is that same number added to itself with an offset; the product of 5 and any whole number ends in a zero or 5. During choral call-and-respond exercises: Call any number between 0-10, respond with the addend that sums to 10 (e.g., call "4: / respond "6." Call any number between 0-100, respond with the addend that sums to 100 (e.g., call 43, respond 57). Read and write numbers from 0 to 99. Using the Hindu-Arabic place value numeral system, choral read numbers up to the hundred decillions. Decompose multi-period whole numbers into their place value equivalents. Using the Six Arithmetic Operations cognitive map, recite relationships between operations including: Inverse operations; Repeated operations; addition counts forward, subtraction counts in the reverse; multiplication counts faster than addition and exponentiation faster than multiplication; exponentiation is repeated, repeated addition, etc.

Numeric Operations: Arithmetic Operations: Understand addition as combining groups (combining sets).

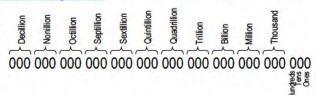
Understand subtraction as removing a smaller group (or set) from a larger group (or set). Represent addition and subtraction with concrete objects, mental constructions, and common experiences including: fingers, mental images, drawings, sounds, real-world situations, verbal explanations, numeric expressions, or equations K.OA.A.1. Solve addition and subtraction word problems. Add and subtract using objects or drawings to represent the problems K.OA.A.2. Decompose numbers into place value equivalents in more



than one way K.OA.A.3. For any number 0-5, flash-recall the number it takes to add to 5. For any number 1-9, flash-recall the number it takes to add to ten. K.OA.A.4. Flash-recall add and subtract within 20 K.OA.A.5. Represent a quantity of objects with a written number 0-20. Understand the relationship between numbers and quantities. Understand differences and similarities between cardinal and ordinal numbers. Represent a number of objects with a written numeral, 0-20. Calculate all addition and subtractions facts with high fidelity. Add all permutations of single digit numbers in two rows (i.e., addends = 0-9, augends = 0-9). Subtraction Facts: Inverse Addition Facts; From the addition fact sums (0-9+0-9) subtract numbers 0-9 where the resulting differences are equal to or greater than 0. Add two rows of numbers, with and without regrouping. Solve simple addition and subtraction linear equations with one variable (e.g., a = b + c, x = 20 + 5, 5 = x + 3). Represent addition and subtraction with objects, fingers, mental images, drawings, sounds, verbal explanations, expressions, and equations. For simple addition and subtraction word problems, write a linear equation representing the unknown as a variable and solve. Identify groupings of objects of twos, fives, etc. FRACTIONS: Read, write, and identify simple common fractions, using drawings and physical objects, including: 1/2, 1/4, 2/4, 3/4, 1/8, 2/8, 3/8, 4/8, 5/8, 6/8, 7/8. Identify equivalent fractions in drawing and physical objects including: 2/4 = 1/2, 4/8 = 2/4 = 1/2, 2/8 = 1/4, 6/8 = 3/4. Add and subtract simple common fraction with like denominators.

Place Value / Base Ten Positional Notation / Hindu-Arabic numeral system: Read and write whole numbers:

one digit numbers (0-9), two digit numbers (10-99); three digit numbers (100-999); and four through six digit numbers (1,000-999,999) using standard place-value nomenclature (see illustration). Read whole numbers to the hundred-decillions (decillion, nonillion, octillion, septillion, sextillion, quintillion, quadrillion, trillion, billion, million,



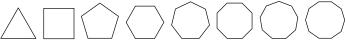
thousand) with each period place filled with digits 1-9. Decompose (e.g., 1,357 = 1,000+300+50+7): two digit numbers (10-99); three digit numbers (100-999); and six digit numbers (1,000-9,999). Understand how to decompose any whole number to the decillions. Use objects, drawings, or a counting frame (abacus) to represent the concept of base ten, place -value. Pedagogical Note: Use a recursive-iteration instructional strategy to instill procedural-fixed-pattern-recall, high motivation and high confidence. Know period names (...octillion, septillion, sextillion ...), and cyclic sub-period names (ones, tens, hundreds) in sequential order. Count by tens, hundreds, thousands, ten thousands K.CC.A.1. Count forward beginning from a given number K.CC.A.2. From an instructor's oral call, write numbers from 0 to 20; Write numbers from 0 to 999. Represent a quantity of objects with a written numeral K.CC.A.3. Count the number of objects in groups of 1, 2, and 5. Understand the relationship between numbers and quantities. Compare and contrast counting with cardinality K.CC.B.4. Demonstrate cognitive awareness of one-to-one correspondence: When counting objects, say the number names in sequential order, pairing each object with one and only one number name and each number name with one and only one object K.CC.B.4.a. Demonstrate cognitive awareness of conservation of quantity: the number of objects is the same regardless of arrangement or order counted K.CC.B.4.b. Understand that each successive number name refers to a quantity that is one larger K.CC.B.4.c. Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1-20, count out that many objects K.CC.B.5. Compare numbers. Identify whether the number of objects in one group is greater than, less than, or equal to the number

of objects in another group. K.CC.C.6. Compare two numbers between 1 and 10 presented as written numerals K.CC.C.7. Decompose numbers into hundreds, tens, and ones. Utilizing a standard addition matrix, compose given hundreds, tens, and ones into numbers. Understand that the value numeral is dependent on the place it occupies; this concept to the ones, tens, hundreds and so on. Understand that as place positions become filled the value of the number increases. Understand that each place value increases by a factor of ten. Apply the pattern of decomposition to progressively larger numbers. Decompose given numbers into addends; And Compose given addends into numbers by using objects or drawings. Record compositions and decompositions with drawings or equations K.NBT.A.1.

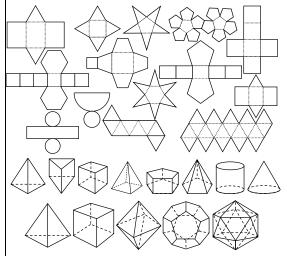
Systems of Measurement / Denominate Numbers: Describe and compare measurable attributes of one, two, and three dimensional objects, such as length (height, width, and depth), area, volume, weight, or temperature using SI and US customary units. Describe several measurable attributes of a single object K.MD.A.1. Compare two objects with a measurable attribute in common; determine which object has more or less of the attribute, and describe the difference. K.MD.A.2. Classify objects into given categories; count the numbers of objects in each category and sort the categories by count. Name numeric categories such as gross or dozen K.MD.B.3. Using common containers (milk cartons) identify liquid measurements orally: gallon, half-gallon, quart, pint, and cup (name number of: gallons, half-gallons, quarts, pints, cups; ounces in each). Exhibit a sense of length / approximate the linear measures (height, length, width) in terms of: feet, yards, inches, centimeters, meters, and kilometers. Measure height, width, depth of one, two, and three dimensional objects. Compare denominate measurements of objects. Demonstrate understanding of conservation of volume regardless of container shape. Recall: inches in a foot; feet in a yard; feet in a mile. Understand signed numbers in relationship to familiar uses (e.g., above and below freezing, above and below sea level, etc.) Demonstrate mastery-recall: Name the months of the year (i.e., January, February, March ...); Name days of the week (i.e., Sunday, Monday, Tuesday ...); Number of days in a; week, month, year; Number of seconds in a minute, minutes in an hour, hours in a day; days in a week; years in a century. Name the seasons; summer, fall, winter, spring in order. Using an analog clock discriminate between the second, minute, and hour hands. Tell time in hours, half-hours, and minutes using analog and digital clocks. Recognize and know the value of a: penny, nickel, dime, quarter, and dollar. Use the symbols: \$ (dollars) and ¢ (cents.)

Geometry: Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using

formal language to contrast their similarities and differences. Use standard nomenclature to refer to the first, second, and third dimension: line, shape, form,



etc. Locate positive and negative whole numbers on a number line. Describe two dimensional shapes. Identify regular polygons using standard nomenclature, regardless of orientation or size (trigon, tetragon, pentagon, hexagon, heptagon, octagon, nonagon, and decagon). Identify generalized plane figures including: circles, triangles, squares, rectangles. Name relative positions of objects (above, below, beside, in front, behind, and



next to). Identify three-dimensional generalizations such as: cylinder, sphere, cube, cone, etc. Identify shapes and forms of objects in the environment referring to geometric similarities and relative positions. K.G.A.1. Fold given shape patterns into polyhedra. Correctly name polygons and polyhedra regardless of orientation or size K.G.A.2. Identify shapes as two-dimensional (lying in a plane, "flat") or three-dimensional ("solid") K.G.A.3. Analyze, compare, create, and compose shapes. Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/"corners") and other attributes (e.g., having sides of equal length) K.G.B.4. Model shapes in the world by building shapes from cutout and drawn shapes K.G.B.5. Model internal star

polygons by drawing straight lines connecting all vertices. Decompose regular polygons into simpler shapes. Compose simple shapes to form larger shapes K.G.B.6.

First Grade Students / A.L.L. Mathematics Objectives, Aligned to Meet or Exceed Common Core Grade Level
Standards / Mastered by or before year-end

Prior Knowledge / Prerequisite Knowledge / Skill Retention-reactivation: Prior to providing instruction in the following, the instructor shall review, assess, and reteach the Kindergarten Math Standards articulated above. To satisfy the First Grade Math Standards, Students must demonstrate competence and/or mastery in all objectives articulated in the Kindergarten Math Standards as well as all operator and a sum operator and a

Oral Exercises / Counting / Mental Calculation Strategies/ Natural Numbers: Chunking addends: chunk addends of 10 (1+9, 2+8, 3+7, 4+6, 5+5, 6+4, 7+3, 8+2, 9+1); addends of 5 (1+4, 2+3, 3+2, 4+1). During choral exercises and in written problem solving exercises: Chunk columns of single digit numbers with six or more rows into 5's then sum by skip counting; Chunk columns of single digit numbers operator with six or more rows into 10's then sum by skip counting; Chunk columns of single digit equals barnumbers with six or more rows into 5's with residuals then sum by skip counting; Chunk columns of single digit numbers with six or more rows into 10's with residuals then sum by skip counting. Mentally add two numbers with four periods, arranged in a column, while simultaneously reading the sum with the correct place value names (without regrouping and with regrouping.) Mentally subtract two numbers with four periods, arranged in a column, while simultaneously reading the sum with the correct place value names (without regrouping and with regrouping.) Use counting on strategies with single column addition. Use counting up-to strategies with single column subtraction. Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count. Add all permutations of one and two digit augends and addends within 100. Subtract all permutations of one and two digit minuends and subtrahends with differences zero or greater, within 100. Add, subtract (including subtrahends that are larger than minuends; positive and negative differences), and multiply with single digit multipliers and two digit multiplicands; with and without regrouping. Demonstrate concrete and abstract manipulation of mathematical reasoning and calculations; predict the outcome of mathematical actions (e.g., If a=b and b=c then a=c). Illustrate multiplication as repeated addition with abstract concepts and concrete objects including: familiar objects, polygons, drawings, and equations.) Demonstrate mastery recall of multiplication using single digit multipliers including tables: 0's (Zero times is any quantity zero); 1's (One 1 2 3 4 5 6 times any quantity is that same quantity); 10's (Ten times any number is that same number with a zero appended); 5's (all end in 0 or 5, regular, first digit repeats. Read and write common fractions with single digit numerators and denominators. In whole group choral exercises, exhibit deductive and inferential mathematical reasoning. Add and subtract common fractions with the same denominators (e.g., 4/5 - 2/5 = 1/5). Add and subtract common fractions with different denominators in which one denominator can be renamed to the other (e.g., 3/4 + 1/8 = 6/8 + 1/8). Using a place-value cognitive map, mastery-recall unit-period names. Call (0 times any quantity) response (is 0); Call (1 times any quantity) response is (that same quantity); Call (ten times and single digit number) response (the digit with a 0)... 11, 100, 1000.

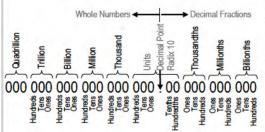
Numeric Operations: Construct the Six Arithmetic Operations cognitive map including graphic and numeric representations of inverse operations and repeated operations (e.g., subtraction will undo addition and addition

will ... exponentiation is repeated multiplication) (See: 6-Arithmetic Operations Graphic: Kindergarten Objectives). Demonstrate relationships between addition and subtraction using strategies 171

such as: a number-line, analog clock, relationships in a number sequence (such as: odd number sequence, even number sequence; sequence of alternating odd, even), etcetera. Using a various graphics, or equations demonstrate the relationships between: addition and subtraction; repeated addition and repeated subtraction; and repeated addition and



repeated, repeated division, multiplication and division, exponentiation and root taking). Skip count forward and backward 1-11. Recognize and note numerical relationships between numbers and expressions using: <, =, and >. Use counting-on to solve subtraction problems. Demonstrate cyclical patterns of multiplication using the 0-



99 number matrix. Flash-recall addition, subtraction, and multiplication facts, involving all permutations of single digit operands 0-9. Recognize numeric sequences using a conventional analog wall clock and numeric arrays including a multiplication matrix and the 1-99 place value matrix (See; 1-99 Place Value Matrix: Kindergarten Objectives.) Understand and apply properties of operations to problems involving addition (commutative, associative, additive identity, distributive, and reflexive) and subtraction (identity, equality, distributive, and reflexive). Apply properties of operations as strategies to add and

subtract 1.OA.B.3. Understand subtraction as its inverse (addition) with and unknown addend (e.g., 5-2=X, X+2=5). Understand the mathematical logic in "counting-on" to solve subtraction problems. Understand addition as its inverse (subtraction) with and unknown subtrahend (3+2=X, X-2=5) 1.OA.B.4. Relate counting to addition and subtraction (e.g., by counting on 2 to add 2) 1.OA.C.5. Demonstrating fluency with addition and subtraction. Add and subtract whole numbers consisting of any number of digits with and without regrouping, where the sums or differences are whole numbers. Use strategies such as counting on; making tens or fives, decomposing a number leading to a tens or fives, counting by fives or tens, strategies using multiplication to solve addition, chunking like pairs strategies, strategies of residuals, strategies of redistribution, strategies involving the relationship between addition and subtraction, and creating equivalent but easier or known sums 1.OA.C.6. Identify: even and odd numbers. Use and understand standard mathematical notation, nomenclature and symbols including: the equals bar, addition, subtraction, multiplication signs, >, <, and \neq. Determine if equations containing addition, subtraction, and multiplication are true or false. Solve simple equations containing one variable and operations including: addition, subtraction, multiplication, and division. Understand basic concepts related to sets and use Venn diagrams to visually order sets of objects based on attributes.

WORD-PROBLEMS AND EQUATIONS: Represent the numeric relationships within word problems with objects, drawings, and equations. Translate simple word-problems into linear equations containing one variable that represent the relationships in the word-problem. Solve problems with unknown addends, subtrahends, products, and multiplicands. Use symbols (that are consistent with standard numeric conventions) to represent unknown numbers (variables). Solve word-problems and linear equations with one variable involving adding, subtraction, multiplication, and division. Solve word-problem equations with an unknown in all operand positions 1.OA.A.1. Solve word problems (individually and in group activities) that call for: addition, subtraction, multiplication, and division of whole numbers. Evaluate word problems that call for an operation to be carried out up to three times within the same problem. Evaluate word problems that call for one, two, or three different operations to be carried out in the same word-problem 1.OA.A.2. Work with addition and subtraction equations. Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false 1.OA.D.7. Determine the unknown whole number in an addition or subtraction equation relating three whole numbers 1.OA.D.8.

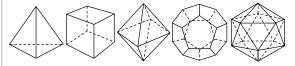
Place-Value / Numeration: Read and write numbers to the hundred decillions with random periods filled with 0's (decillion, nonillion, octillion, septillion, sextillion, quintillion, quadrillion, trillion, billion, million, thousand, and units). Decompose any number from decillions to decillionths (e.g., 1,357 = 1,000+300+50+7). Identify the value of each place/period in whole numbers up to the hundred decillions, (e.g., in the number 632,547 there are 7 ones, 4 tens, 5 hundreds, 2 thousands, 3 ten-thousands, and 6 hundred-thousands) by decomposing them with subtraction and/or recomposing them with addition. Read decimal fractions with the proper place value up to thirty-five places to the right of the decimal point. Count by two's to 50, three's to 39, four's to 48, five's to 50, tens to 100, hundreds to 1,000. Count on starting with any number; by one's and multiples. Read and write numerals representing any number of objects up to the decillions 1,NBT.A.1. Understand decimal place value notation, that is; the Hindu-Arabic base-10 positional notation system in common use today. Recognize that the system utilizes a decimal point marking the transition between the whole part of mixed number and its fractional part. Recognize that the numeral system utilizes ten unique glyphs (digits, 0-9) that cycle, without end, through positions of increasing value left to right by factors of ten. Recognize that in a two digit numeral the digit on the left represents the number of times 0-9 has been counted and the digit on the right represents the progress (in units of one) within 0-9. Recognize that in a three digit numeral, the two digits on the left represent the number of times 0-9 has been counted and in a four digit numeral the three digits on the left, represent the number of times 0-9 has been counted 1.NBT.B.2: Recognize that although 10 can be thought of as a bundle of ten ones — called a "ten;" a numeral system is properly described by the number of glyphs used (i.e., digits 0-9 equals ten digits); and by viewing zero as an initializer with the property of defining the counting space empty and defining the end of one cycle and beginning of another (See: 1-99 Place Value Matrix: Kindergarten Objectives) 1.NBT.B.2.a. Recognize that the numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones 1.NBT.B.2.b. Recognize that the numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones) 1.NBT.B.2.c. Compare numbers based on meanings of the hundreds, tens and one's place value. Compare the place value of digits with symbols >, =, and < (e.g., 120>99) 1.NBT.B.3. Use understanding of place value and properties of operations to add and subtract. Add whole numbers with any number of digits in the addends and augends. Add two-digit numbers with one-digit numbers, and adding a two-digit numbers with multiples of 10. Use concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. Understand that in adding three-digit numbers, the column on the left represents the addition of hundreds; the one in the middle represents addition of tens; and the column on the right represent addition of ones; And when the addition one column adds to a two digit number, the two digit number can be easily regrouped by writing the digit on the left above the next place value column and the number on the right beneath the column just added 1.NBT.C.4. Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the numeric justification 1.NBT.C.5. Subtract multiples of 10 from multiples of 10 that have a whole number difference. Use concrete models, drawings and strategies based on place value, properties of operations, and/or the relationships between addition, subtraction, multiplication, and division to enhance understanding of these constructs; compose written descriptions of place value strategies and explain the numeric justification 1.NBT.C.6.

Systems of Measurement / Denominate Numbers: Order three objects by length; compare the lengths of two objects indirectly by using a third object. Measure lengths directly and indirectly. Measure the length of one object using a standard unit of measurement (e.g., inch, foot, yard, centimeter, and meter.) Order the measured object with two other objects by length; compare the lengths of two objects indirectly by using measured object. Express the length of an object as a whole number of length units one the basis of the object length as the standard and the denominate number as the standard; express both measures following standard conventions 1.MD.A.1. Visually estimate distances, heights of objects and lengths of objects in inches, feet, yards, meters, and centimeters. Compare the lengths of objects measure in SI and US customary units (e.g., feet with meters, inches with centimeters, etc.) Estimate the lengths of objects in both the SI and US customary units with reasonable accuracy. Informally convert between systems by "feel" by approximation (develop a sense for length in both

systems). Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps 1.MD.A.2. Flash-recall inches in a foot; feet in a yard; feet in a mile; millimeters in a centimeter; centimeters in a meter; millimeters in a meter; meters in a kilometer. Ounces in a pound, pounds in a ton (short ton), grams in a kilogram, liters. Freezing-boiling point °F and °C room temp/ degrees above and below. Number of items in a: dozen (dz), half dozen, Baker's dozen, pair, gross, great gross, small gross. Represent and interpret data. Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another 1.MD.C.4.

<u>TIME</u>: Flash-recall: number of months in a year, number of days in a week, approximate number of weeks in a month, approximate number of days in a month, number of days in a year; weeks in a year; years in a century; years in a decade; decades in a century; years in a millennium; centuries in a millennium; decades in a millennium; seconds in a minute; minutes in an hour; hours in a day. Name: months of the year; days of the week in order. Name the seasons: summer; fall; winter; spring. Tell and write time (using common and standard notation) in terms of: AM, PM; half hours; quarter hours; hours-minutes-seconds using analog and digital clocks and laps-time stop watches 1.MD.B.3.

Geometry/ Graphing: Reason with shapes and identify their attributes. Distinguish between defining attributes (e.g., triangles are closed and three-sided) and non-defining attributes (e.g., color, orientation, overall size); build and draw shapes that exhibit defining attributes. Identify and name the five platonic solids (tetrahedron, hexahedron, octahedron, dodecahedron, and icosahedron.) Distinguish the defining attributes of regular polygons and platonic solids. Identify and name regular and irregular polygons. Identify two-dimensional shapes and their properties (e.g., radius, dimeter, circumference, diagonals, etc.) including: rectangles, squares,



trapezoids, triangles, half-circles, and quarter-circles. Identify three-dimensional shapes including: cubes, right rectangular prisms, right circular cones, and right circular cylinders. Locate positive and negative numbers on a number line (whole and

fractional) 1.G.A.1. Draw two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape 1.G.A.2. Partition groups of circles, rectangles, and triangles into two, four, or more equal parts. Refer to the whole and fractional parts using standard common fraction nomenclature (e.g., numerator-denominator: four-fifths, two-thirds, one-fourth.) Name mixed numbers when presented with concrete examples (e.g., three quarters and two nickels; three and two-fifths quarters; eight and one-half dimes.) Understand the process of dividing whole units into subunits which can themselves represent whole units, which can themselves by further be decomposed (one day can be divided by hours, hours can be divided by minutes; one dollar can be divided by quarters, one quarter can be divided by nickels 1.G.A.3.

Second Grade / A.L.L. Mathematics Objectives, Aligned to Meet or Exceed Common Core Grade Level Standards / Mastered by or before year-end

Prior Knowledge / Prerequisite Knowledge / Skill Retention-reactivation: Prior to providing instruction in the following, the instructor shall review, assess, and reteach the Kindergarten and/or First Grade Math Objectives if indicated. To meet the second grade math objectives, students must demonstrate facility/mastery in the objectives articulated in the Kindergarten, First Grade, and Second Grade Math Objectives.

Oral Exercises: Counting/ Choral Stream / Call and Response (C&R) / Choral Review: Count by 1/2's, 1/3, 1/4's, 1/5's, 1/6's 1/7's, 1/8's, 1/9's to 5 (e.g., $\frac{1}{2}$, 1, $1\frac{1}{2}$, 2, $2\frac{1}{2}$... and $\frac{1}{8}$, $\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$, $\frac{7}{8}$, 1...). Name the parts of a common fraction (i.e., denominator, numerator, and vinculum.) Mentally, add, subtract, multiply, divide stings of terms in left to right order (e.g., $5 + 3 - 6 * 9 \div 3$). Mentally add from left-to-right, numbers containing three periods or more, arranged in columns and rows, while fluidly reading the sum using the correct place-value nomenclature (with regrouping). Recall from memory all products of all permutations of one-digit numbers (multiplication facts). Mentally subtract from left-to-right two numbers each containing three periods or more, while fluidly reading the correct place-value (with regrouping / positive differences only.) Identify perfect squares and perfect square roots to 100 with exponential and radical sign notation. Mentally calculate all single digits numbers with exponents of 2 (e.g., 12, 22, 32...102) mentally calculate their roots of their products (e.g., $\sqrt{1} = 1$, $\sqrt{4} = 2$, $\sqrt{9} = 2$... $\sqrt{100} = 10$). Express the differences and similarities between numbers and numerals. Zero times is any quantity zero. Any quantity time zero is zero. One times any quantity is that same quantity. Any quantity times one is that same quantity. Compare simple fractions with like and unlike denominators (unit fraction) using <, >, and =.

Natural Numbers/ Properties of numbers / Nomenclature / Notation: Discriminate between odd and even

numbers. Write/solve equations expressing: the sum or difference of two even numbers is an even number; the sum or difference of two odd numbers is an even number; the sum or difference of and even and an odd number is an odd number.) Using place

	gallon	nalt- gallon	quart	pint	cup
cup	16	8	4	2	1
pint	8	4	2	1.	1/2
quart	4	2	1	1/2	1/4
half-gallon	2	1	1/2	1/4	1/8
gallon	1	1/2	1/4	1/8	1/16

Or difference of and even and an odd finance is written form, demonstrate comprehension of the terms and symbols including: greater than; less than; equal to, not equal to, greater than or equal to, less than or equal to, approximately equal to $(>, <, =, \neq, \geq, \leq, \approx)$.

Numeric Operations: Fluently add and subtract using mental strategies. Add and subtract whole numbers (right to left and left to right) with six digit or more; augends, addends, minuends, subtrahends; with and without 5-Multiplicand regrouping; that have sums and differences that are whole numbers Multiply and divide whole numbers with up to six digit dividends and multiplicands and single digit divisors and multipliers with and without regrouping. Express remainders in "R" format, common fractional format, or decimal fraction format. Use knowledge of simple multiplication and skip counting to solve column addition problems. Flash-recall sums for all addend and augend permutations of all single digit numbers (i.e., know from memory all sums of two, one-digit numbers.) Flash-recall differences of simple subtraction facts using all the permutations of; two, one digit numbers added together; used as minuends and all one digit numbers used as subtrahends 2.OA.B.2. Flash-recall multiplication fact: products of all permutations of one digit multipliers and multiplicands. Flash-recall division facts (i.e., one digit divisors and quotients) where all the dividends are products of one digit multipliers and multiplicands (i.e., inverse multiplication facts), with division operators expressed as: a vinculum of an improper fractions (35/7 =5), as a vertical vinculum and horizontal equals bar (-); and as an obelus in linear form (35 ÷ 7 = 5). Flash recall basic multiplication facts 0-12 times tables. Flash-calculate multiplication with multipliers of 1, 10, 100, 1,000, 10,000 and multiplicands of any whole numbers. Understand, any quantity divided by one is that same quantity; any quantity multiplied by one is that same quantity; any quantity multiplied by zero is zero. Any quantity divided

by zero is undefined. Divide quantities using the three remainder types ("R" remainder, common fractional remainder, decimal remainder).

ALPHANUMERIC EXPRESSIONS AND EQUATIONS: Write and solve alphanumeric equations. Translate one and two step word-problems, with and without "noise" (irrelevant information), containing one unknown (variable); into simple linear equations (representing relations between known quantities and variables) that involve simple addition, subtraction, multiplication, and division; And solve. Understand, in alphanumeric expressions, a variables is a letter that represents a quantity that can take a range of values; a constant is a number or letter that represents a fixed number; when letters are used in place of numbers, for constants, they often come from the beginning of the alphabet (a, b, c); when letters are used to represent variables, they usually come from the end of the alphabet (x, y, z); when a letter is used to represent an unknown quantity, it usually comes from the end of the alphabet (x, y, z). Use symbols that follow alphanumeric conventions. Solve wordproblems with variables in all operand positions and that include multiple, different operations 2.OA.A.1. Determine the parity property of an integer; Recognize even and odd numbers. Understand that an even integer is evenly divisible by two; and odd integer is not. Understand that zero is an even number. Understand that fractions do not have parity. Determine whether a group of objects has an odd or even number of members. Write an equation to express that: two equal addends produce an even sum regardless of whether they are even or odd; two even numbers added, subtracted or multiplied result in an even number; two numbers, one even and the other odd added or subtracted produce an odd result; two odd numbers added or subtracted produce an even number; two numbers, one even and the other odd multiplied produce an even product; two odd numbers multiplied produce an odd product 2.OA.C.3. Use a matrix to demonstrate that multiplication is repeated addition and provide insight into division. Use addition to find the total number of objects arranged in rectangular arrays with rows and columns; write an equation to express totals as a sum of equal addends 2.OA.C.4. Understand and use problem solving strategies related to "order of operations" in simple linear expressions containing multiple operations. Read, write, and solve linear expressions that use parentheses and brackets. Use addition, subtraction, and multiplication and division to solve word problems involving measures that are given in different units. Solve two and three step word problems involving addition, subtraction, multiplication, division, simple inequalities, and single variables.

Place-value: Understand Hindu-Arabic base-10 positional notation. Using the standard place value nomenclature, read mixed numbers up to the hundred decillions with decimal fractions. Read decimal fractions with the standard place-value nomenclature up to twenty places to the right of the decimal point. Identify the value each place and period represents for whole and decimal numbers. Using the standard nomenclature, read and write common fractions with up to three digit numerators and denominators. Compare the relative magnitude of whole numbers, simple common fractions, decimal fractions, using symbols including >, =, and < . Understand and read Roman numerals using standard additive and subtractive forms from 1-1,000 (I, II, III, IV, V, VII, VIII, IX, X, L, C, D, M). Understand decimal place value notation, that is; the Hindu-Arabic base-10 positional notation system in common use today. Recognize that the system utilizes a decimal point marking the transition between the whole part of a mixed number and its fractional part. Recognize that the numeral system utilizes ten unique glyphs (digits, 0-9) that cycle, without end, through positions of increasing value left to right by factors of ten. Recognize that in a three digit numeral, the two digits to the left represent the number of times 0-9 has been counted and the digit on the right represents the progress (in units of one) within 0-9; And in a four digit numeral the three digits on the left, represent the number of times 0-9 has been counted and so on to infinity. Understand that the Hindu-Arabic place value system provides for infinitely larger numbers. Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones (e.g., 706) equals 7 hundreds, 0 tens, and 6 ones) 2.NBT.A.1. Understand that although one can view "100 as a bundle of ten tens" as a "special case". It may be more productive to understand the special property of zero as an initializer, as the normal property of a cycle. It may be productive to view zero as an initializer with the property of defining the counting place empty such as by initializing (rendering the position empty) the beginning of each new cycle (N+0 cycles) with the counted value of the position "regrouped" by factors of 10 to the next positional value

(See; 1-99 Place Value: Matrix Kindergarten Objectives) 2.NBT.A.1.a. Understand that the numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four, five, six, seven, eight, or nine hundreds (and 0 tens and 0 ones) 2.NBT.A.1.b. During Oral Activities, individually and whole group, skip-count by 2s, 3s, 4s, 5s, 6s, 7s, 8s, 9s, 10s, 11s, 12s, 100s, 1000s' 10000s 2.NBT.A.2. Read and write numbers to 1000 using baseten numerals, number names, and expanded form 2.NBT.A.3. Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using >, =, and < symbols to record the results of comparisons. Use place value understanding and properties of operations to add, subtract, multiply, divide, and exponentiate (base of two, positive exponents up to 10) 2.NBT.A.4. Fluently add and subtract using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction 2.NBT.B.5. Add numbers with any number of digits with regrouping, using strategies based on place value and properties of operations 2.NBT.B.6. Add and subtract using concrete models, abstract drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. Describe strategies in written form with justifications that are numerically sound. Understand the place value justification for regrouping and recognize regrouping in addition, subtraction, multiplication, and division 2.NBT.B.7. Mentally add, subtract, multiply 10, 100, or 1000 to any given whole number. Multiply or divide any decimal number by and factor of ten buy repositioning the decimal point 2.NBT.B.8. Explain why addition, subtraction, multiplication, and division strategies work, using place value and the properties of operations 2.NBT.B.9.

Systems of Measurement / Denominate Numbers: Using standard units of measurement in SI and US customary units, measure the length; width and height (area); height, width, and depth (volume); and weight (mass) of objects with appropriate tools such as rulers, yardsticks, meter sticks, measuring tapes, digital scales, triple beam scale. Identify the dimensionality of each type of measurement. Calculate area, volume, surface area, weight, density and record using standard notation. Describe the differences and similarities in meaning between mass and weight. Compare measurements of the same object in in SI and US metrics 2.MD.A.1. Measure an object using different units in the same metric. Describe how the two measurements relate to one another and to the object 2.MD.A.2. Develop a "feel" for measurement. Estimate the length, area, volume, weight, and density of objects of different sizes and shapes using standard nomenclature. Compare estimated values with measured values and record the differences using standard notation 2.MD.A.3. Measure to determine how much more volume, surface area, weight, or density one object has than another, express the difference in terms of a standard units 2.MD.A.4. Compare and contrast the concepts of accuracy (how close a measurement is to the true value) with precision (the consistency of repeated measures). Measure objects to the nearest whole unit with that can be repeated measured; round to the nearest whole denominate unit. Average the results and differentiate between precision and accuracy relative to the tool and the act of measuring. Solve word-problems involving volume, surface area, area, length and weight measured in SI and US units 2.MD.B.5. Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, 2... Represent whole-number sums and differences on a number line diagram 2.MD.B.6.

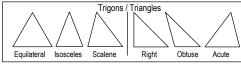
TIME: Flash-recall /Seconds in a: minute; hour / Minutes in an: hour; day / Hours in a: day; week / Days in a: week, each month; year (including leap year) /Weeks in a: month; year / Months in a: year; decade / Years in a: decade; century; millennium. Using analog and digital clocks, tell time and record in written form (using the standard notation and nomenclature) to the minute, and hour. Discriminate between a.m. and p.m. 2.MD.C.7. Name the seasons and climatic conditions relative to latitude and the northern and southern hemispheres. Demonstrate knowledge of astronomical phenomena that cause: the seasons (summer; autumn; winter; spring) in the Northern Hemisphere; a lunar month; day and night including variation in hours in day and night relative to latitude and time of the year. Represent and interpret data. Generate measurement data by measuring lengths of several objects to the nearest whole unit, or by making repeated measurements of the same object. Show the measurements by making a line plot, where the horizontal scale is marked off in whole-number units 2.MD.D.9. Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve word-problems using information presented in a bar graph 2.MD.D.10.

<u>CURRENCY</u>: Recognize and know relative values of: penny, nickel, dime, quarter, and dollar. Read and write the symbols: \$ (dollars) and ϕ (cents). Use a decimal point to discriminate between whole dollars and fractions

of a dollar. Viewing standard notion determine equivalent values in various denominations (e.g., \$5.25 is the same value as 21 quarters, 52 and one-half dimes, 105 nickels, 525 pennies. Flash-recall: pennies in a: dollar, quarter, dime, nickel; nickels in a: penny, dollar, quarter, dime, nickel; all permutations (see matrix to the right.) Solve word problems involving US currency: dollars, quarters, dimes, nickels, pennies. Use standard denominate notation in answers 2.MD.C.8

Geometry / number lines / Cartesian Plane: Recognize specific shapes and forms, and their defining attributes. Use multiple names for shapes based on specific attributes including: right prisms and pyramids using multiple

names (e.g., a regular tetrahedron is also called a right equilateral pyramid; a right equilateral triangular prism is also called a pentahedron; a cube is also called a square prism). Recognize and draw shapes having attributes, such as a given number of angles or a given number of equal



faces. Draw and Identify triangles, quadrilaterals, pentagons, hexagons, and cubes 2.G.A.1. Partition a rectangle into same-size squares and count to find the total number 2.G.A.2. Partition circles and rectangles into two, three, or four equal shares, describe the shares using a variety of standard nomenclature. Describe a whole as fraction of unity: two-halves, three-thirds, four-fourths. Recognize that equal shares of identical wholes need



0, 1, 2... Represent whole-number sums and differences on a number line. Draw and identify properties of: points, lines, line segments, rays, angles (right, acute, obtuse, opposite, adjacent, etc.,) perpendicular and parallel lines; Identify in two-dimensional figures. Identify radii, diameter, similar and congruent figures. Recognize that there are two radii in on diameter. Know or be able to derive the formula for the area and perimeter for rectilinear shapes, and triangles. Know or be derive a formula for the volume of rectilinear forms. Plot common fractions on a number line. Define the three dimensions.

Third Grade / A.L.L. Mathematics Objectives, Aligned to Meet or Exceed Common Core Grade Level Standards Mastered by or before year-end

Prior Knowledge / Prerequisite Skills Retention-reactivation: Before providing instruction in the following objectives, the instructor shall assess students' retention and facility with objectives articulated for prior grades and 1 2 3 4 5 6 2 1 2 1 2 1 2 1 2 1 2 1 2 1

review or reteach where required. To satisfy mathematics requirements for the current grade, students must demonstrate mastery in objectives articulated for the prior grade along with those articulated for 512, 1024, 2048, 4096, 8192, 384, the current grade.

Choral Activities: Choral Stream / Call and Response (C&R) / Choral Review/ Mental Calculations: Mentally, add, subtract, multiply, divide, exponentiate, take roots: calculate the 0-10th power of base 2 (e.g., 22, 23, 24 ... 210); squares

of bases 1-20 (e.g., 1^2 , 2^2 , 3^2 ... 20^2); square roots (e.g., $\sqrt{4} = 2$, $\sqrt{9} = 3$, $\sqrt{16} = 4$... $\sqrt{196} = 19$,

$\frac{1}{8}$ = .125 = 12.5%	$\frac{2}{8} = \frac{1}{4} = .25 = 25\%$	$\frac{3}{8}$ = .375 = 37.5%
$\frac{4}{8} = \frac{1}{2} = .5 = 50\%$	$\frac{5}{8}$ = .625 = 62.5 %	$\frac{6}{8} = \frac{3}{4} = .75 = 75\%$
$\frac{1}{5}$ = .2 = 20%	$\frac{2}{5} = .4 = 40\%$	$\frac{3}{5}$ = .6 = 60%
$\frac{4}{5} = .8 = 80\%$	$\frac{1}{6} = .1\overline{666} = 16\frac{2}{3}\%$	$\frac{2}{6} = \frac{1}{3} = .\overline{3} = 33\frac{1}{3}\%$
$\frac{3}{6} = \frac{1}{2} = .5 = 50\%$	$\frac{4}{6} = \frac{2}{3} = .\overline{6} = 66\frac{2}{3}\%$	$\frac{5}{6} = .8\overline{333} = 83\frac{1}{3}\%$
$\frac{1}{7} = .\overline{142857} = 14\frac{2}{7}\%$	$\frac{2}{7} = .\overline{285714} = 28\frac{4}{7}\%$	$\frac{3}{7} = .\overline{428571} = 42\frac{6}{7}\%$
$\frac{4}{7} = .\overline{571428} = 57\frac{1}{7}\%$	$\frac{5}{7} = .\overline{714285} = 71\frac{3}{7}\%$	$\frac{6}{7} = .\overline{857142} = 42\frac{6}{7}\%$
$\frac{1}{9} = .\overline{111} = 11\frac{1}{9}\%$	$\frac{2}{9} = \overline{,222} = 22\frac{2}{9}\%$	$\frac{3}{9} = \frac{1}{3} = .\overline{333} = 33\frac{1}{3}\%$
$\frac{4}{9} = .\overline{444} = 44\frac{4}{9}\%$	$\frac{5}{9} = .\overline{555} = 55\frac{5}{9}\%$	$\frac{6}{9} = \frac{2}{3} = .\overline{666} = 66\frac{2}{3}\%$
$\frac{7}{9} = .\overline{777} = 77\frac{7}{9}\%$	$\frac{8}{9} = .888 = 88\frac{8}{9}\%$	$\frac{9}{9} = .\overline{111} = 1 = 100\%$

Real $\sqrt{400} = 20$); squares of bases that are multiples of 5, 5-100 $(e.g., 5^2, 10^2, 15^2... 100^2)$; squares 10-10 $(e.g., 1^2, 2^2, 3^2...$ Rational Integers 20²); express results as common, and decimal fractions. Whole C&R common fractions (Call) and their equivalent decimal Natura fraction (Response) (e.g., 1/5 = .2, 3/4 = .75, 2/7 = .285614..., etc.) and vice versa (.125 = 1/8, .888... = 8/9, .8 = 4/5.) Zero divide by any number is zero. Zero times any quantity, is zero.

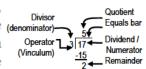
Numeric Operations: Recall standard nomenclature and use standard notation 5 Multiplicand associated with: addition, subtraction, multiplication, Operator→x3 ← Multiplier division, exponentiation, and root taking (e.g., augend, Equals bar 15 Product term, divisor, operator, factor, coefficient, etc.). Recognize correspondence between notational symbols and nomenclature (e.g., divisor &

denominator correspond; dividend & numerator correspond, etc.) Add, & subtract, numbers using chunking with residuals, and repeated addition; with and without regrouping. Multiply and divide numbers with any multi-digit dividends and multiplicands, any multi-digit divisors and multipliers, and dividends with regrouping. Divide using repeated subtraction strategies. Solve simple equations and work-problems representing all six arithmetic operations; with mixed numbers; with decimal fractions and common fractions. Multiply using partial products strategies and distribution strategies. Use estimation to approximate solutions. Use inverse operations to check solutions (e.g., use addition to check subtraction; subtraction to check addition; division to check multiplication; multiplication to check addition. Constituently estimate reasonableness of calculation outcomes. Know basic division, exponentiation facts.

Master multiplication with multipliers and/or multiplicands of 1, 10, 100, 1,000, 10,000; 75 quotient decimal fractions; mixed numbers. Check division by multiplying and adding remainder. Vinculum / operator -Denominator/ divisor 4 Divide quantities using the three remainder types ("R" remainder, common fractional remainder, decimal remainder). Read, write, and compare integers using inequality symbols. Locate positive and negative integers on a number line. Understand that for the set of real numbers and integers, numbers greater than "0" are positive and numbers less than "0" are negative, although "0" is an integer, real number, and signed number, it is not signed positive or negative. Understand and use standard integer notation and perform operations involving integers including addition and subtraction.

<u>ALPHANUMERIC EXPRESSIONS AND EQUATIONS</u>: Solve algebraic expressions and equations involving addition, multiplication, division, simple exponentiation (whole number exponents), and simple root taking (whole number roots). Represent mathematical relationships, expressed by algebraic expressions and equations, with Venn diagrams using standard set theory nomenclature and notation (e.g., \cap , \cup , \supset , \subset , \in , $\{\}$). Interpret the multiplier, in

multiplication, as the number of sets of objects, the multiplicand as number of objects in a set, and the product as the total number of objects 3.OA.A.1. Understand division as the inverse operation of multiplication and division as repeated subtraction. Interpret division as a whole in terms of its parts. Understand both the partition concept of division (focus on the size of the parts) and the quotition concept (focus on the number of parts). Relate the concepts of partition



and quotition to natural numbers and fractions 3.OA.A.2. Translate word-problems involving groups, arrays, and measurement quantities into equations representing the numeric relationships between constants and variables 3.OA.A.3 Transform equations and formulas, involving the six arithmetic operations (including division), using inverse operations, to solve for an unknown. Understand and preserve the balance of opposite sides of the equal sign. Determine the value for the unknown 3.OA.A.4. Understand that the inverse of multiplication is division and the inverse of division is multiplication. Understand the multiplication can undo division. Understand that multiplication can be used to check division and division can be used to check multiplication. Understand and apply the properties of multiplication including the: commutative property, associative property, multiplicative identity property, and distributive property. Understand and apply the properties of division including the: identity property, zero property, and equality property 3.OA.B.5. Understand that division can be expressed as multiplication with an unknown factor 3.OA.B.6. Flash-recall basic facts for addition, subtraction, multiplication, division, exponentiation (1-19 squared, 2 with exponents 0-10 with any whole exponent), and root taking (inverse of the exponentiation facts) 3.OA.C.7. Translate word-problems involving addition, multiplication, division, and exponentiation including: word-



problems containing "noise" (extraneous information), and interdependent word-problems (word-problems that require the use of information from other word-problems). Assess reasonableness of answers using mental computation, estimation strategies and rounding 3.OA.D.8. Identify patterns in the six arithmetic operations and explain them; utilizing properties of operations 3.OA.D.9. Understand and

list the embedded organization (Russian Doll sequence) of the system of number

SYSTEMS OF NUMERALS, OPERATIONS AND PROPERTIES: Understand and explain: Commutative; associative; and distributive properties of multiplication; Factor; Prime numbers; Relative primes; Composite numbers; and Magnitude. Compare and contrast the Hindu-Arabic and Roman, numeral systems. Identify Roman numerals using standard additive and subtractive form from 1-1,000 (I, II, III, IV, V, VII, VIII, IX, X, L, C, D, M). Compare positional number systems to non-positional systems.

FRACTIONS:	Identify	fractions	as numb	ers and	d recognize	that th	neir	equivalent	values	can	be	expressed	in	several
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forms. Understand "undefined" as related to division by zero or common fractions with a denominator of zero. Understand that common fractions represent division with the vinculum serving as the operator and the numerator the operand. Understand that decimal fractions have an "understood" denominator that is multiple of ten. Understand that common fractions can be expressed as decimal numbers, and decimal number can be expressed as common fractions. Understand that improper common fractions represent values greater one and can be renamed to mixed numbers. Understand that decimal numbers include mixed numbers (values greater than one) and values less than one (proper fraction) and that decimal fractions can never be improper. Understand partition and quotition concepts as they apply to fractions. Understand a fraction as the quantity formed when a whole is partitioned into equal parts 3.NF.A.1. Locate decimal & common fractions on a number line 3.NF.A.2. Represent a fraction on a number line by defining the interval from 0 to 1 as a whole number; finer divisions as fractional parts of the whole 3.NF.A.2.a. Represent a fraction on a number line diagram by marking off a lengths 1/b from 0. Recognize that the resulting interval has size a/b and that its endpoint locates the number a/b on the number line 3.NF.A.2.b. Explain the equivalence of fractions and compare fractions by reasoning about their size 3.NF.A.3. Understand two fractions as equivalent (equal) if they occupy the same point on a number line 3.NF.A.3.a. Recognize and rename simple equivalent fractions (e.g., 1/2 = 2/4 = 3/6 = 4/8 =5/10) Explain why the fractions are equivalent 3.NF.A.3.b. Express whole numbers and mixed numbers (decimal and common) as equivalent improper fractions (5=5/1, 4=32/8, 3.5=7/2). Recognize that improper fractions are equivalent to whole or mixed numbers 3.NF.A.3.c. Compare the relative value and rank order common fractions (with like and unlike denominators), decimal fraction, mixed numbers, and numbers with exponents. Use standard inequality notation 3.NF.A.3.d. Solve problems involving the six arithmetic operations and various forms of fraction notation including: decimal, vulgar, proper, improper, fractions of unity, percentages, equivalent, compound & complex fractions, fractions with like and unlike denominators, decimal and common fractions. Identify the inverse and direct relationships of the numerator and denominator to magnitude (e.g., The larger the denominator the smaller the quantity. The larger the numerator the larger the quantity.) Convert decimal fractions to: common fractions; percent. Read and/write decimal fractions to the decillionths. Round common fractions: to the nearest whole half, third, fourth ... tenth; decimal fractions to the nearest tenth, hundredth, thousandth, ten-thousandth, hundred-thousandth. Rewrite improper fractions to mixed numbers and mixed numbers to improper fractions. Rename: fractions simplest terms. Find LCD (lowest common denominator). Discriminate between unit fractions and fractions of unity. Solve word-problems involving fractional units (dominate quantities, using common and decimal fractions) to find area, surface area, length, perimeter, and volume.

<u>Place-value / Properties of Numbers and Operations / Notation:</u> Identify ordinal Position. Understand that ordinal numbers extend the set of natural numbers (N_0). Compare ordinal with cardinal numbers. Using the standard place value nomenclature and notation, read and write mixed numbers up to the hundred decillions with decimal fractions to Decimal points repeted ellipsis the hundred decillionths. Read and write decimal fractions with the proper place-value

Decimal point repetend ellipsis

0.864153864153...

Whole part Fractional part
(positive integer) (Denominator

nomenclature up to thirty-five places to the right of the decimal point. Identify the value each place/period represents for whole and decimal numbers. Rewrite standard notation to expanded notation. Using the proper nomenclature, read and write common fractions with up to twelve digit

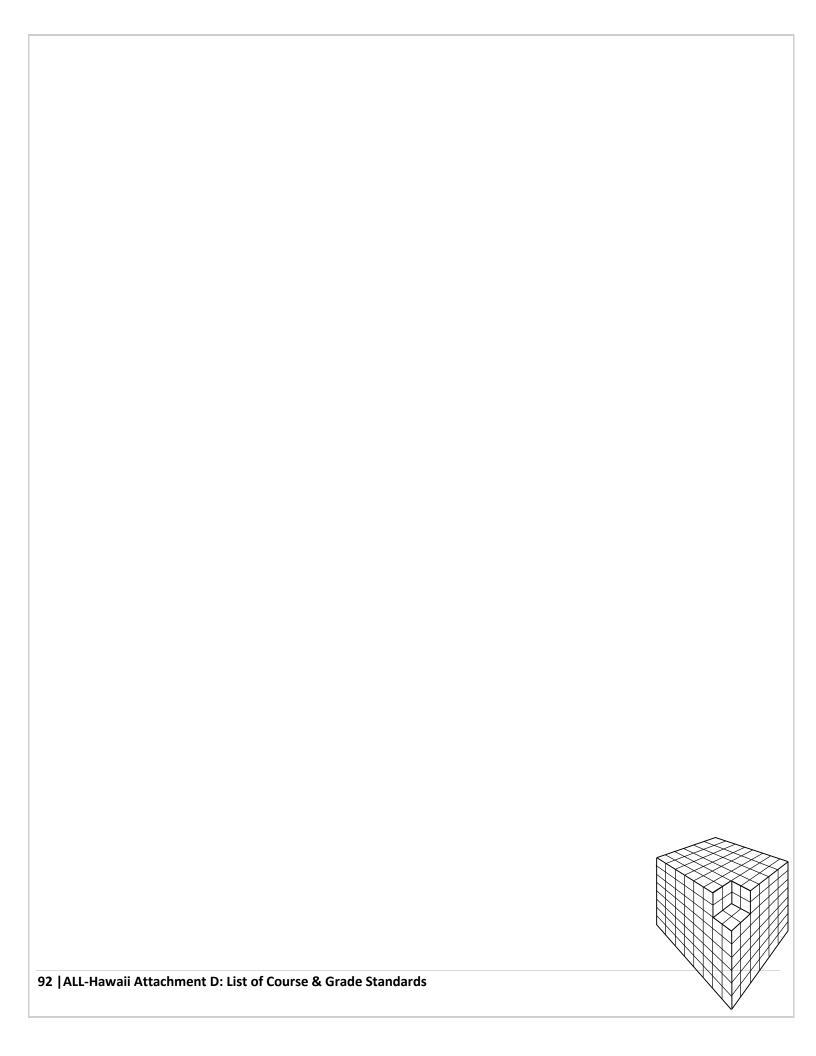
numerators and denominators. Order and compare any set of magnitudes expressed with: common fractions, mixed numbers with common fractions, decimal fractions, mixed numbers with decimal fractions, π , e, (Euler's number), φ (the golden ratio), $\sqrt{2}$, etc. using the signs <, >, \neq , =, \approx . Identify the correct place-value period names for powers of 10 in increments of three, from 0-36 (e.g., 10^0 = one, 10^3 = one thousand, 10^6 = one million, 10^{12} = one trillion ... 10^{36}). Master-recall standard SI prefixes for 10^1 , 10^2 , 10^3 , 10^6 ... 10^{24} . Read and write whole numbers up to the hundred decillions using engineering and normalized exponential (scientific) notation (6.721 x 10^7 = sixty-seven million, two hundred ten thousand = 62.71 x 10^6). Expand numbers written in scientific and engineering notation and read them using the proper place-value nomenclature. Read numbers on a calculator expressed in E-notation (normalized exponential notation). Round numbers to any increments of whole number (e.g., hundreds, tens, ones) and any decimal increment. Use place value understanding and properties of operations to perform multi-digit arithmetic. Use place value understanding to round whole numbers to the nearest 10 or 100 3.NBT.A.1. Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between

addition and subtraction 3.NBT.A.2. Multiply one-digit whole numbers by multiples of 10 in the range 10-90 (e.g., 9×80 , 5×60) using strategies based on place value and properties of operations 3.NBT.A.3.

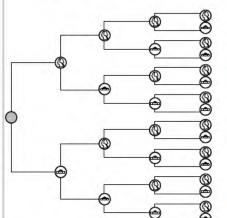
	PV	SI
100	one	
10¹	ten	deca-
10 ²	hundred	hector-
10 ³	thousand	kilo-
106	million	mega-
10 ⁹	billion	giga-
1012	trillion	tera-
10 ¹⁵	quadrillion	peta-
10 ¹⁸	quintillion	exa-
1021	sextillion	zetta-
1024	septillion	yotta-

Systems of Measurement / Denominate Numbers: Develop a "sense" for measurement; provide reasonable estimates of an object for length, weight/mass, and volume in the SI and US metrics. Flash-recall /Seconds in a: minute; hour; day / Minutes in an: hour; day; week / Hours in a: day; week; month / Days in a: week, each month; year; decade; century / Months in a: year; decade; century / Years in: decade; century; millennium. Explain: The frequency of leap years; The meaning of AM and PM. Using an analog and digital clock, measure time intervals and record in written form (using the standard notation and nomenclature including AM, PM); to the second, minute, and hour. Solve word problems involving addition, subtraction, multiplication, and division of time intervals. Tell and write time to the nearest minute and measure time intervals in hours, minutes, and seconds. Solve word problems involving addition and

subtraction of time intervals in minutes and seconds. Use standard notation for time. Represent and find the relative sequence and order of historical events on a visual time-line. 3.MD.A.1. Identify and name the phases of the moon; describe the physics involved. Name the seasons: summer; fall; winter; spring and explain variations in temperature over the year. Explain the variations in climate relative to latitude and altitude. Compare climate with weather. Solve word-problems involving addition and subtraction of time intervals including minutes, hours, days.



LENGTH, AREA, VOLUME: Measure and estimate liquid volumes and weights of objects using standard unit in the SI and US customary. Round numbers to the nearest whole number, ten, hundred, thousand, ten-thousand, hundredthousand, million, ten-million, hundred-million, within denominate classifications. Mentally calculate running purchase price totals. Estimate/ Calculate conversions between the US customary and SI units (e.g., one meter is about 39 inches; one yard is about 91 centimeters; one mile is about 1.6 kilometers; one kilometer is about .62 miles; one inch is about 2.5 centimeters; 1 centimeter is about .4 of an inch; one pound is about .5 kilograms and one kilogram is about 2.2 pounds; one gallon is about 3.8 liters and one liter is about 1.06 quarts; etc.). Make linear measurements in yards, feet, and inches, miles centimeters, meters, and kilometers. Estimate linear measurements, measure to check. Add, subtract, multiply, or divide to solve word problems involving denominate numbers (within the same system and requiring conversion between systems). Measure and estimate liquid volumes and masses of objects using standard units of grams, kilograms, and liters. Estimate and measure liquid volumes and masses of objects using standard units. Use addition, multiplication, division, or exponentiation to solve multi-step word-problems including: word-problems containing "noise" (extraneous information), and interdependent word-problems (word-problems dependent other word-problems) involving masses or volumes that are given in the same units. Represent and interpret data 3.MD.A.2. Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and twostep "how many more" and "how many less" problems using information presented in scaled bar graphs 3.MD.B.3. Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units—whole numbers, halves, or quarters 3.MD.B.4. Understand concepts of area and relate area to multiplication and to addition. Recognize area as an attribute of plane figures and understand concepts of area measurement 3.MD.C.5. A square with side length 1 unit, called "a unit square," is said to have "one square unit" of area, and can be used to measure area 3.MD.C.5.a. A plane figure which can be covered without gaps or overlaps by n unit squares is said to have an area of n square units 3.MD.C.5.b. Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units) 3.MD.C.6. Relate area to the operations of multiplication and addition 3.MD.C.7. Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths 3.MD.C.7.a. Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning 3.MD.C.7.b. Use tiling to show in a concrete case that the area of a rectangle with wholenumber side lengths a and b+c is the sum of $a \times b$ and $a \times c$. Use area models to represent the distributive property in mathematical reasoning 3.MD.C.7.c. Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real



world problems 3.MD.C.7.d. Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters 3.MD.D.8. Understand concepts including: frequency; period (the reciprocal of the frequency); hertz; cycles per second; revolutions per minute.

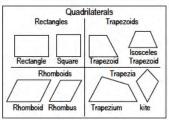
<u>CURRENCY</u>: Calculate tax and tips. Calculate change from purchases. Make change, using as few coins as possible. Add, subtract, multiply and divide amounts of money.

<u>Statistics / Factorials / Probability / Odds / Graphs:</u> Create, interpret information depicted on bar graphs, line graphs, and scatter plot. Solve simple problems using

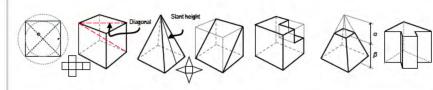
information in a bar graphs, line graphs, and scatter plots. Record outcomes for a series of events (coin flips, dice rolls, etc.) and display the results graphically. Understand factorial operation and notation, and compute factorials (e.g., n! 5! = 120 - 6! = 720). Mentally calculate up to 8! Understand: factorial notation involves only non-negative integers; a factorial is the product of all positive integers less than and including a given number. Understand that the value of 0! = 1 and 1! = 1 and demonstrate provide and informal mathematical proof. Realize and explain that, there are always "n!" ways to arrange "n" distinct objects (e.g., three distinct things can be arrange six unique ways; ABC, ACB, BAC,

BCA, BAC, CBA, CAB.) Solve real-world-problems, word-problems, and mathematical problems involving factorials, including arrangements and rearrangements. Add, subtract, multiply and divide factorials. Understand that probability is a measure of the likelihood than an event will occur and is measured with quantities 0-1 (0 = no probability and 1 = 100% probability.) Understand that the higher the probability that an event will occur the more nearly certain it is that that event will occur and vice versa. Understand the concept of bias. Understand that in a fair coin toss, the probability it will land on heads is nearly 50% (there is a very small probability that it will land on its edge).

Geometry: Identify and name triangles (trigons) on the basis of defining attributes. Describe and name two classification schemes that are each exhaustive, that is; all possible triangles are defined by each scheme on the basis of attributes: 1. Right angle attributes include, angle greater than, less than, or equal to a 90°. The right angle category comprises: right triangles, obtuse triangles, acute triangles. 2. Relative length of sides attribute and the category comprises: equilateral triangles, isosceles triangles, scalene triangles. Recognize that an equilateral triangle is also a regular polygon and the interior angles of all triangles add to



180°. Identify a classification scheme that sorts all possible convex quadrilaterals into categories based on attributes (see quadrilateral graphic). Parallelograms include rectangles and rhomboids, attributes of parallelograms include: opposite sides are parallel and of equal measure; the class of rectangles include a special case of rectangle, the square, and the general case, the rectangle. Attributes of the class of rectangles include, all angles are 90° and diagonals are of equal measure. The special case rectangle, the square, has an additional attribute, all four sides are of equal length. The



class of rhomboids includes the special case of rhomboid, the rhombus, and the general case, the rhomboid. Attributes of the class of rhomboids include diagonals that are of a different measures, adjacent angles are of different measures and opposite angles are of an equal measure. The

special case rhomboid, the rhombus, has an additional attribute, all four sides are of equal length. The trapezoids and trapezia makeup the last to classes. The class of trapezoids includes a special case, the isosceles trapezoid, and the general case, the trapezoid. The class of trapezia includes the special case, the kite, and the general case, the trapezium. Recognize that a square (tetragon) is also a regular polygon and all convex quadrilateral's interior angles add to 360°. Identify categories and properties of triangles and quadrilaterals 3.G.A.1. Partition regular polyhedra into parts with equal areas. Express the area of each part as a unit fraction of the whole 3.G.A.2. Understand that square units, is a two dimensional measure, and cubic units is a three dimensional measure. Find the midpoint; perimeter; area; radius; length of side; apothem and angle measures (central, inside, outside) of regular polygons including: trigon, tetragon, pentagon, hexagon, heptagon, octagon, nonagon, decagon. Find side lengths of rectangles with the same perimeter and different areas, or with the same area and different perimeter. Transform formulas for the hypotenuse, area and perimeter for shapes including: circles, triangles, quadrilaterals. Know or derive formulas for surface area and volume of spheres, right pyramids (including right cones) with regular polygon bases, and right prisms with regular polygon bases. Plot points on a Cartesian Plane using ordered pairs. Given the co-ordinates, plot regular and irregular polygons on a Cartesian plane. Understand and use standard geometry nomenclature and apply concepts including: degrees in a circle, pi, angle, midpoint; regular polygons; Angles (adjacent, opposite, complementary, exterior, interior, and supplementary); Lines (parallel, segment, perpendicular, ray, transverse, congruent, similar, oblique, perpendicular. Solve word-problems involving perimeter, area, surface area, and volume with denominate measures

Fourth Grade / A.L.L. Mathematics Objectives, Aligned to Meet or Exceed Common Core Grade Level Standards Mastered by or before year-end

Prerequisite Knowledge / Skill Retention-reactivation: Before providing instruction in the following objectives, the instructor shall assess students' retention / facility with objectives articulated for prior grades and review or reteach when indicated. To satisfy mathematics requirements for the current grade, students must demonstrate mastery in objectives articulated for prior grades along with those articulated for the current grade.

Choral activities: Choral Stream / Call and Response (C&R) Mental Calculations: Mastery-recall equivalent common fractions (single digit numerators and single digit denominators (excluding 0)), decimal fractions, and percent (e.g., $3/7 = .428561 \dots = .427/8 = 427/8\%$ $1/8 = .125 = 12.5\% = 12\frac{1}{2}\%$). Using the factorial cognitive map, mentally calculate factorial products 1-10. With and without the common fractions/decimal fractions cognitive maps masteryrecall relationships and nomenclature, give examples (e.g., All proper fractions are less than one, all improper fractions are greater than one, all fractions of unity are equal to one. Every digit to the right of the decimal point is less than one, every digit to the left of the ...). Mastery-recall common operators for all Six Arithmetic Operations.

$a^0 = 1$	$a^{\mathbf{m}} + a^{\mathbf{m}} \cdot 2a^{\mathbf{m}}$	$a^m a^n = a^{m+n}$	$(a^{\mathbf{m}})^{\mathbf{n}} = a^{\mathbf{m}\mathbf{n}}$
$\frac{a^{\mathbf{m}}}{a^{\mathbf{n}}} = a^{\mathbf{m}-\mathbf{n}}$	$\left(\frac{a}{b}\right)^{\mathrm{m}} = \frac{a^{\mathrm{m}}}{b^{\mathrm{m}}}$	$a^{1/n} = \sqrt[n]{a}$	$a^{-n}=\frac{1}{a^n}$

Numeric Operations: Use a factor tree to divide a number into its prime factors. Identify; flash calculate or recall squares including: 1², 2², 3², 4², 5², 6², 7², 8², 9^2 , 10^2 , 11^2 , 12^2 , 13^2 , 14^2 , 15^2 , 16^2 , 17^2 , 18^2 , 19^2 , 20^2 ,

Multiplication x, 2*3, of, 2.3, ab, 3a, 3(a+b) 25², 30², 35², 40², 45², 50², 55², 60², 65², 70², 75², 80², 85², 90², 95², 100², 11ⁿ. Calculate, Exponentiation 42, 421, 45, 4*2, 4^2, 4-2 and/or recall their square roots. Identify prime and composite numbers. Flash calculate or Root taking $\sqrt{4}$, $4^{1/2}$, 4^{5} , $\sqrt[3]{8}$

Base / root $\longrightarrow 5^3 = 125$ Base / root-Logarithm \longrightarrow 3 = log₅ (125) √125 = 5 ←base Degree 3rd root of ... radical sign $\sqrt[3]{125} = 125^{\frac{1}{3}} = 5$

Exponent/power/index/degree recall common cubes and cube roots. Add, subtract, multiply, divide, exponentiate, and take roots of number with decimals. Master left to right, vice versa add, subtract, and multiply (multi-digit) addends, subtrahends, multipliers. Effectively use strategy shifts with partial products and sums. Generalize place value understanding for multi-digit whole numbers. Recognize that in the Hindu-Arabic numeral decimal system, each digit positioned to left of another is greater by a factor of ten. Recognize that each digit to the right of another is smaller by a factor 1+2+3+4+5 of ten. Recognize that this pattern continues without end both right and left; providing 1 3 6 10 15 21 large and infinitely small numbers 4.NBT.A.1. Using the Hindu-Arabic numeral Triangular number series decimal system, read and write multi-digit whole numbers, multi-digit decimal fractions, and multi-

Six Arithmetic Operators

Addition

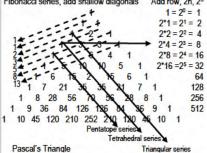
digit mixed numbers from the decillions to the decillionths. Recognize that the Hindu-Arabic system is a base-10 cyclical system with ten unique digits 0-9. Recognize that the Hindu-Arabic system utilizes positional notation to indicate orders of magnitude. Recognize that period names count in revise order of the direction a number is read. Recognize that, while reading a place-value number, saying "and" indicates the location of the decimal point and signals that the part of the number about to be read is a decimal fraction. Compare two 0 + 1 + 1 + 2 + 3 + 5 + 8 + 13 + 21 + 34 + 55 + 89 0 1 2 3 5 8 13 21 34 55 89 144 multi-digit numbers based on values of the digits and the position the digits occupy

using >, =, and < symbols 4.NBT.A.2. Use understanding of positional notation, to round multi-digit numbers decimal numbers to any place. Use knowledge of place value and properties of operations to perform the six arithmetic operation with number of any digit length 4.NBT.A.3. Fluently add, subtract, multiply, and divide multi-digit whole numbers, multi-digit decimal fractions, and multi-digit mixed numbers using standard algorithms and situational specific strategies 4.NBT.B.4. Multiply multi-digit whole numbers, multi-digit decimal fractions, and multi-digit mixed numbers by multi-digit whole numbers, multi-digit decimal fractions, and multi-digit

mixed numbers using strategies based on place value and the properties of operations. Illustrate and explain calculations with equations, rectangular arrays, and/or models 4.NBT.B.5. Find whole-number 1×2×3×4×5×6 ... quotients and remainders using strategies based on place value, the properties of operations, and/or relationships between multiplication and division. Recognize and use the three forms of remainders (R,

fractional, and decimal) and select the appropriate form for the given situation. Illustrate and explain calculations with equations, rectangular arrays, and/or models 4.NBT.B.6. Recognize and name common operators, grouping

symbols, and mathematical notation including: \div (obelus), Σ (summation; upper case sigma), vinculum, brackets, parenthesis, braces, up caret, ∞ (lemniscate), asterisk and double asterisk, ellipsis. Discuss and numerically illustrate: multiplicative inverse; reciprocal; involution; Identify and name operands, and operators related to the six arithmetic Fibonacci series, add shallow diagonals Add row, 2n, 2n operations including exponentiation, root taking, and logarithms.

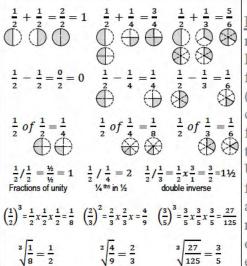


OPERATIONS AND NUMBERS: Identify "properties of numbers" (field axioms) including: com mutative, associative, distributive, identity, symmetric (if a=b and b=a), multiplicative axiom (if a=b and c=d the n ac=bd); Axioms of equality: reflexive a=a, transitive (if a=b and b=c then a=c), substitution, partition (a quantity is equal to the sum of its parts), addition (if a=b and c=d then a+c=b+d), subtraction, multiplication, division;

Addition	Multiplication
Commutative	Commutative
a+b=b+a	ab = ba
Associative	Associative
a+(b+c)=(a+b)+c	(ab)c = a(bc)
Identity	Identity
a+0 = a	a × 1 = a
Inverse	Inverse (Reciprocal)
a + (-a) = 0	$ax^{\frac{1}{2}}=1$
Distributive	Distributive
a(b+c)=ab+ac	(a+b)c = ac+bc

inequality; closure. Recognize / generate number series including; square, triangular, factorial, Fibonacci, etc.

INTEGERS: Understand and use standard integer notation. Identify an integer's opposite; sum an integer and its opposite to zero. Add, subtract, multiply, divide, exponentiate, and take the roots of integers and signed numbers. Plot integers and signed numbers on a number line. Using graphic representations, diagrams, and algebraic variables to translate word-problems (including denominate numbers) into linear equations. Solve multistep word problems including: indirect word problems (information required to solve a problem is not given but must be derived from the given data); and word problems with extraneous information or "noise" (relevant information is scattered within jumbled data). Assess the reasonableness of answers using mental computation and estimation strategies including rounding. Add, subtract, dived, exponentiate to solve real-world problems and word-problems containing integers, signed numbers, and fractions.



FRACTIONS, RATIOS: Add, subtract, multiply, divide common fractions and

mixed numbers with like and unlike denominators. Exponentiate, and take roots of common and decimal 1, 3, 3, 4 Proper Fractions fractions. Find the LCD (lowest common denominator), LCM | 8, 3, 7 | Improper Fractions >1 (lowest common multiple), and GCF (greatest common factor) $\frac{2}{3}, \frac{7}{7}, \frac{\pi}{\pi}$ Fractions of Unity of common fractions with unlike denominators. Reduce

fractions to simplest terms. Identify the reciprocal of fractions and recognize that the product of a fraction and its reciprocal is a fraction of unity (one). Understand that division by zero is undefined and the equivalent; any common fraction with a denominator of zero is undefined. Understand that the product of any multiplicand, and proper fraction multiplier, is a lesser quantity than the multiplicand. Find a percent of a quantity including: whole, numbers, fractions, denominate units. Identify fractions as representing division and recognize the equivalence of nomenclature of division operators and operands (e.g., devisor, and denominator; dividend and numerator; quotient, decimal ratio). Identify

whole numbers as having implied denominators of "one". Discriminate between fractions-of-unity and unitfractions. Show relative size/value of common fractions, decimal fractions, and percentages; using <, =, >. Translate between: common fractions, decimal fractions, percentages, ratios. Use ratios to express denominate measure relationships such as; proportion, speed, velocity, and mass-density. Write and read ratio notation with confidence. Translate between decimal, common fraction, and ratio notation smoothly. Relate the concept of "odds" to ratios and simple probability. Recognize that decimal and common fractions, percentages, proportions and ratios are all expressions of the fourth arithmetic operation (division). From the conceptual basis of number-of-parts versus sizeof-parts, understand and demonstrate equivalent fraction using a concrete model e.g., Fold a standard size sheet of paper in half, unfold to find the sheet is divided into two parts, refold it and fold it in half again, unfold and find the sheet divided into four parts, repeat and find the paper divided into eight parts and so on ... note the exponential series

(2, 4, 8, 16, 32, ...) Fold a fresh sheet of paper in half and color one half of it with a marker. Repeat the previous series of folding. With every fold, take note of the evolving equivalent (1/2, 1/4, 1/8 ...) Next: fold a fresh sheet to fourths and color only one-fourth ... equivalent fractions of one-fourth. Repeat and color three-fourths Note that as the denominator becomes larger their sizes become smaller however the ratio between the numerator and denominator remain the same.) Understand and demonstrate equivalent fractions using a numeric illustration (e.g., any quantity divided by that same quantity is equivalent to one. Any quantity multiplied by one is that same quantity. All common

$\frac{1}{8}$ = .125 = 12.5%	$\frac{2}{8} = \frac{1}{4} = .25 = 25\%$	$\frac{3}{8}$ = .375 = 37.5%
$\frac{4}{8} = \frac{1}{2} = .5 = 50\%$	$\frac{5}{8}$ = .625 = 62.5 %	$\frac{6}{8} = \frac{3}{4} = .75 = 75\%$
$\frac{1}{5}$ = .2 = 20%	$\frac{2}{5}$ = .4 = 40%	$\frac{3}{5} = .6 = 60\%$
$\frac{4}{5}$ = .8 = 80%	$\frac{1}{6} = .1\overline{666} = 16\frac{2}{3}\%$	$\frac{2}{6} = \frac{1}{3} = .\overline{3} = 33\frac{1}{3}\%$
$\frac{3}{6} = \frac{1}{2} = .5 = 50\%$	$\frac{4}{6} = \frac{2}{3} = .\overline{6} = 66\frac{2}{3}\%$	$\frac{5}{6} = .8\overline{333} = 83\frac{1}{3}\%$
$\frac{1}{7} = . \overline{142857} = 14\frac{2}{7}\%$	$\frac{2}{7} = .\overline{285714} = 28\frac{4}{7}\%$	$\frac{3}{7} = .\overline{428571} = 42\frac{6}{7}\%$
$\frac{4}{7} = .\overline{571428} = 57\frac{1}{7}\%$	$\frac{5}{7} = .\overline{714285} = 71\frac{3}{7}\%$	$\frac{6}{7} = .\overline{857142} = 42\frac{6}{7}\%$
$\frac{1}{9} = .\overline{111} = 11\frac{1}{9}\%$	$\frac{2}{9} = .\overline{222} = 22\frac{2}{9}\%$	$\frac{3}{9} = \frac{1}{3} = .\overline{333} = 33\frac{1}{3}\%$
$\frac{4}{9} = .\overline{444} = 44\frac{4}{9}\%$	$\frac{5}{9} = .\overline{555} = 55\frac{5}{9}\%$	$\frac{6}{9} = \frac{2}{3} = .\overline{666} = 66\frac{2}{3}\%$
$\frac{7}{9} = .777 = 77\frac{7}{9}\%$	$\frac{8}{9} = .888 = 88\frac{8}{9}\%$	$\frac{9}{9} = .\overline{111} = 1 = 100\%$

fractions with numerators and denominators that represent the same quantity are fractions of unity. All fractions of unity are equal to one, therefore any fraction of unity times any quantity is the same quantity: $\frac{1}{1} \times \frac{3}{4} = \frac{3}{4}$, $\frac{2}{2} \times \frac{3}{4} = \frac{6}{8}$, $\frac{3}{3} \times \frac{3}{4} = \frac{9}{12}$). Use these principles to recognize and generate equivalent fractions 4.NF.A.1. Using symbols >, =, or <, compare common fractions: with different numerators and the same denominator, with the same numerator and different denominators, with different numerators and different denominators. Use various problem-specific, cost-benefit strategies (e.g., Benchmark: $\frac{17}{32} > \frac{11}{23}$ because $\frac{17}{32}$ is greater than $\frac{1}{2}$ and $\frac{11}{23}$ is less than $\frac{1}{2}$. Versions of "renaming unlike to like denominators:" $\frac{3}{24} < \frac{1}{6}$ because $\frac{3<4\times1}{24}$; Cross multiplication $\frac{3}{71} > \frac{2}{61}$ because 3.61 > 2.71; Logic $\frac{17}{191} < \frac{17}{151}$ because Prime factoring denominators + cross multiplication; Comparison of ratios $\frac{2}{3} > \frac{3}{5}$ because $\frac{2}{3} = .666$

 $> .6 = \frac{3}{5}$) 4.NF.A.2. Understand that a unit fraction is a rational number and the reciprocal of a positive integer. Recognize that fractions of unity and unit fractions are not the same. Recognize that the reciprocal of a unit fraction is a whole number and the reciprocal of a whole number is a unit fraction. Recognize that the quotient of a common fraction, is that fraction's equivalent decimal fraction; And that the reciprocal of a unit fraction's decimal equivalent decimal equivalent of the unit fractions equivalent. Recognize that the product of a unit fraction and its reciprocal results in a product that is a fraction of unity 4.NF.B.3. Understand addition and subtraction of fractions as joining and separating parts 4.NF.B.3.a. Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions 4.NF.B.3.b. Add, subtract, multiply, and divide mixed numbers with like and unlike denominators. Add, subtract, multiply, divide and exponentiate mixed decimal numbers 4.NF.B.3.c. Solve word problems involving addition, subtraction, multiplication, and division of common fractions with like and unlike denominators, and decimal fractions 4.NF.B.3.d. Multiply and divide common fractions and mixed numbers: by a whole number, by another fraction, and by a mixed number 4.NF.B.4. Understand a fraction a/b as a multiple of 1/b 4.NF.B.4.a. Understand a multiple of a/b as a multiple of 1/b, and use this understanding to multiply a fraction by a whole number 4.NF.B.4.b. Solve wordproblems involving addition, subtraction, multiplication, and division of proper and improper fractions (with like and unlike denominators) 4.NF.B.4.c Rename common fractions to their decimal equivalents and rename decimal fraction to their common fraction equivalents. Use standard notation to express common and decimal fractions. Compare decimal fractions to common fractions. Express a fraction with denominator of 10 as an equivalent fraction with denominator 100, and use this technique to add common fractions with unlike denominators that are expressed as factors of ten 4.NF.C.5. Rename common fractions with denominators that are factors of ten to decimal fractions and rename decimal fractions to common fractions with denominators expressed in factors of ten. Use decimal notation for fractions with denominators 10-1,000,000,000 4.NF.C.6. Compare decimals fractions, reasoning about their size (e.g., .1 > .09999999). Record the results of comparisons with the symbols >, =, or <, and justify the conclusions 4.NF.C.7.

ALGEBRAIC EXPRESSIONS AND EQUATIONS: Know and use the properties of exponents in life-problems, word-problems, and numeric problems. Translate equations into verbal statements (1. An object's speed is the distance it travels in an interval of time. 2. An object's gain in speed (acceleration) is determined by the time it takes

to gain additional speed. 3. The amount of energy used to do an amount of work determines how efficiently the work is done.) Represent verbal statements about numeric relationships with alphanumeric expressions (speed=distance / time, s=d/t; Acceleration=change in speed/time interval) 4.OA.A.1. Using word-problems, drawings, equations, Venn diagrams, or "number theory" graphics illustrate "comparisons" between and within the six arithmetic operations (See: number theory graphics illustrating "between" comparisons: Multiplication as repeated addition; Division as repeated subtraction; Exponentiation as repeated multiplication. Word-problem presenting a "within" multiplicative comparison: "Bob is a flashy fop who wears waistcoats and collects fobs. He has seven silver watch fobs flopped on each of four shelves, hidden beneath five loose floor boards. He has fivefold as many gold fobs as silver, folded in with his seventy-six socks, spread evenly between two boxes hidden beneath his four post bed. If half the fobs on two of the selves beneath his floor, hop off and float away, how many fobs will Bob the fop have in his fob collection?") Solve word problems involving arithmetic and subtractive comparisons 4.OA.A.2. Translate word-problems involving addition, multiplication, division (with remainders), and exponentiation into linear equations with a letter standing for the unknown quantity. Solve word-problems that require multiple operations, contain "noise" (extraneous information), and that are indirect (digressive.) Assess reasonableness of answers using mental computation, estimation strategies and rounding 4.OA.A.3. Construct factor trees (prime factor multi-digit whole numbers). Recognize that a whole number is a composite of its factors. Determine whether two given whole numbers have prime factors in common. Determine whether a given whole number is prime or composite 4.OA.B.4. Generate and analyze patterns. Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself 4.OA.C.5.

	gallon	half- gallon	quart	pint	cup	ounce
ounces	128	64	32	16	8	1
cup	16	8	4	2	1	.128
pint	8	4	2	1	.5	.0625
quart	4	2	1	.5	.25	.03125
half-gallon	2	1	.5	.25	.128	.015625
gallon	1	.5	.25	.128	.0625	.0078125

<u>Place Value</u>: Identify the correct place-value period names for powers of 10 in increments of three, from 0 - $^{-}36$ (e.g., 10^{0} = one, 10^{-3} = one thousandth, 10^{-6} = one millionth, 10^{-12} = one trillionth ... 10^{-36}). Master-recall standard SI prefixes for 10^{-1} , 10^{-2} , 10^{-3} , 10^{-6} ... 10^{-24} . Read and write whole numbers to the hundred decillionths using engineering and

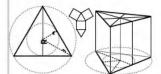
	PV	SI
10º	one	-
10-1	tenth	deci-
10-2	hundredth	centi-
10-3	thousandth	milli-
10-6	millionth	micro-
10-9	billionth	nano-
10-12	trillionth	pico-
10-15	quadrillionth	femto-
10-18	quintillionth	atto-
10-21	sextillionth	zepto-
10-24	septillionth	yocto-

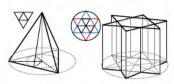
normalized exponential (scientific) notation (6.721 x 10^{-7} = sixty-seven millionths, two hundred ten thousandths = 62.71×10^{-6}). Expand decimal fractions written in scientific and engineering notation and read them using standard place-value nomenclature. Read decimal fractions on a calculator expressed in normalized exponential notation.

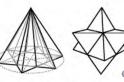
Systems of Measurement / Denominate Numbers: Develop a "sense" for measurement; estimate and measure volumes, weights, and lengths of objects using SI and United States customary units. Solve problems involving measurement and conversion of measurements. Use ratios to convert between SI and US customary units. Know the approximate ratios to convert from SI to US: kilometer \approx .62 mile, meter \approx 1.09 yard, centimeter \approx .39 inch, liter \approx .26 gallon, kilogram \approx 2.20 pounds. Convert within SI; know and understand the factors of ten relationship between SI measures of; Length: millimeter, centimeter, decimeter, meter, dekameter, hectometer, kilometer; Volume/capacity: milliliter, centiliter, deciliter, liter, dekaliter, hectoliter, kiloliter; Weight/mass: milligram, gram, kilogram. Convert within US customary units. Know the unit relationships for; Length: inches in a foot, feet in a yard, inches in a yard, feet in a mile; Weight: ounces in a pound, pounds in a ton; Volume/capacity: fluid ounces in a cup, cups in a pint, pints in a quart, quarts in a gallon 4.MD.A.1. Know that degrees Celsius is used to measure temperature by most countries in the world; with 100°C being approximately equal to the boiling point of pure water at one standard atmosphere) and 0°C being approximately each to the freezing point of pure water at one standard atmosphere is 212°F freezing point of pure water at one standard atmosphere is 212°F freezing point of pure water at one standard atmosphere is 212°F freezing point of pure water at one standard atmosphere is 212°F freezing point of pure water at one standard atmosphere is 212°F freezing point of pure water at one standard atmosphere is 212°F freezing point of pure water at one standard atmosphere is 212°F freezing point of pure water at one standard atmosphere is 212°F freezing point of pure water at one standard atmosphere is 212°F freezing point of pure water at one standard atmosphere is 212°F freezing point of pure water at one standard atmosphere is 212°F freezing point

<u>TIME</u>: Mastery-knowledge-explain: The frequency of leap years; daylight saving time; solar time; laps time; standard time; Greenwich Mean Time (GMT), Coordinated Universal Time (UTC), and Terrestrial Time (TT); leap year, leap seconds; time zones; the international date line; Milankovitch cycles, eccentricity, axial tilt, precession; AM and

PM; AD, BC, Current Era (CE), Before Current Era (BCE). Using stopwatches record in written form (using the proper notation and nomenclature) to fractions of a second. Solve word problems involving addition and subtraction of time intervals including minutes, hours, and days, within and across time zones including the international dateline. Flash-recall: seconds in a minute, minutes in an hour, hours in a day, days in a week, approximate weeks in a month, weeks in a year, months in a year, years in a decade, decades in a century, centuries in millennium, years in a millennium. Use the arithmetic operations to solve word problems involving distances, intervals of time, liquid volumes, mass (weight), money, and temperature including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale 4.MD.A.2.

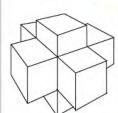






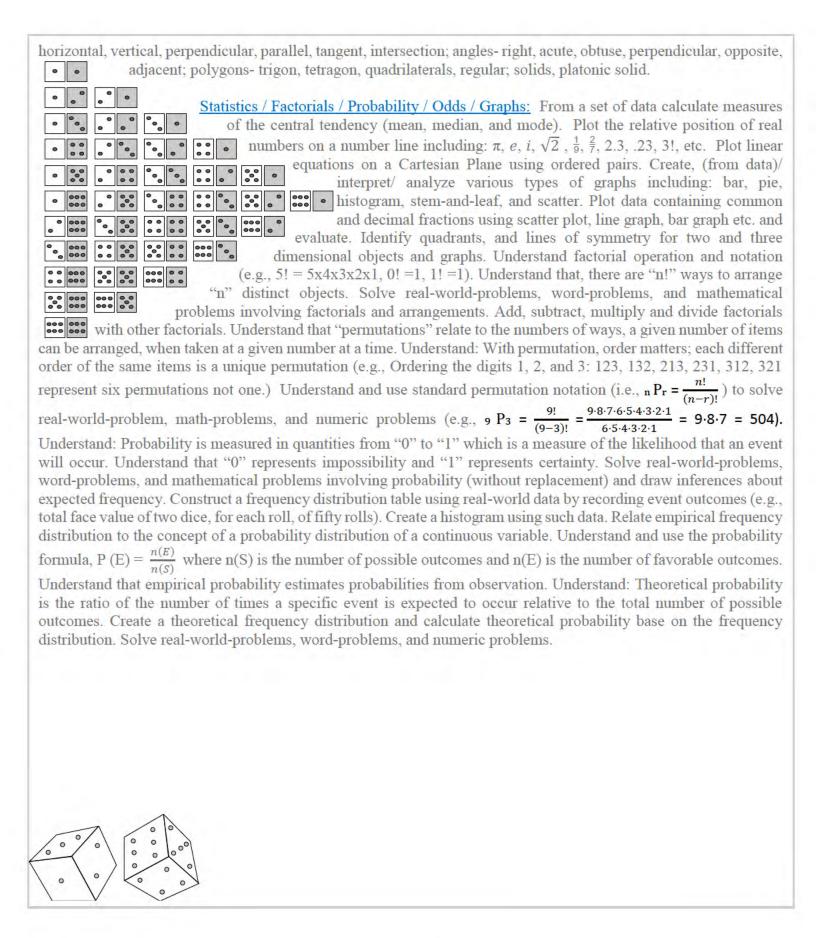
Geometry: Discriminate between right, acute, obtuse angles. Estimate and measure the degrees in an angle. Calculate the degrees in interior angles, exterior angles, and

central angles of regular polygons (pentagons, hexagons, heptagons, octagons, nonagons, decagons, etc.). Identify the properties of: regular polygons. Know or derive formulas to find the area and perimeter of regular and common polygons including triangles and quadrilaterals. Know or derive a formula to find the area of triangles including: right, acute, obtuse, equilateral, isosceles, and scalene. Through geometric processes and knowledge of the shapes, derive formulas for each of the following quadrilaterals: square, rectangle, rhomboid, rhombus, isosceles trapezoid, trapezoid, kite, and trapezium. Recognize/ illustrate the special ratios relative to circles and right triangles. Understand that the Pythagorean theorem is a relationship between the sides of a right triangle. Know that the square of the hypotenuse of a right triangle is equal to the sum of the squares of the other two sides. Use knowledge of the Pythagorean theorem solve geometric problems. Derive or know a formula to find the hypotenuse of a right triangle. Relate regular polygons to circles and triangles and derive formula to find interior, exterior, and central angles; perimeter; area; and apothem. Know or derive a formulas for the circumference and area of a circle through knowledge of triangles. Measure or calculate degrees of rotation, arc, and intersection. Know or derive formulas to find the surface area and volume of common polyhedra. Use an additive and/or subtractive strategies to find the surface area and volume of regular and irregular solids including: cones, pyramids, prisms, platonic solids, stellated platonic solids. Apply the area and perimeter formulas for rectangles in real-world and mathematical problems



4.MD.A.3. Represent and interpret data. Make a line plot to display a data set of measurements using unit fractions (1/2, 1/4, 1/8). Solve problems involving addition and subtraction of fractions by using information presented in line plots 4.MD.B.4. Understand concepts of angle and measure angles. Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement 4.MD.C.5. Understand that an angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. Understand

than an angle that turns through 1/360 of a circle is called a "one-degree angle," and is used to measure angles 4.MD.C.5.a. Understand that an angle that rotates *n*-degrees is said to have an angle measure of *n* degrees 4.MD.C.5.b. Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure 4.MD.C.6. Recognize angle measure as additive; when an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts. Solve arithmetic problems to find unknown angles on a diagram in real-world and mathematical problems 4.MD.C.7. Draw and identify lines and angles, and classify shapes by properties of their lines and angles. Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures 4.G.A.1. Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles 4.G.A.2. Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry 4.G.A.3. Use standard geometry nomenclature including: origin, slope, coordinate. Understand and use notation and nomenclature such as: lines- segments, rays,





Fifth Grade / A.L.L. Mathematics Objectives, Aligned to Meet or Exceed Common Core Grade Level Standards / Mastered by or before year-end

 $\frac{a}{b} + \frac{c}{d} = \frac{ad + bc}{bd}$ $\frac{a}{b} - \frac{c}{d} = \frac{ad - bc}{bd}$ $\frac{a}{b} \times \frac{c}{d} = \frac{ac}{bd}$ $\frac{a}{b} \div \frac{c}{d} = \frac{ad}{bc}$ $\left(\frac{a}{b}\right)^n = \frac{a^n}{b^n}$ $\sqrt[m]{\frac{a}{b}} = \frac{m\sqrt{a}}{m\sqrt{b}}$

<u>Prior Knowledge / Prerequisite Comprehension / Skill Retention-reactivation:</u> Before providing instruction in the following objectives, the instructor shall assess students' retention and facility with objectives articulated for prior grades and review or reteach where indicated. To satisfy mathematics requirements for the current grade, students shall demonstrate mastery in objectives articulated for prior grades along with those articulated for the current grade.

Numeric Operations: Understand the correspondence of notation between/ radical, logarithmic, and exponential notation (see illustration to the right). Understand exponential notation that includes exponents that are positive or negative, and exponents that are common or decimal

Index (exponent, logarithm, degree)

Operator (radical sign) $\sqrt[3]{125} = 5$ Root (base)

Radicand (antilogarithm) $\sqrt[3]{125} = 3$ Logarithm (index, exponent)

fractions. Understand that every non-negative real number has a unique non-negative square root (the principal square root). Understand that every positive number has two square root, one positive, the other negative. Identify and name perfect squares $(2^2, 3^2, 4^2, ..., 19^2)$. Use knowledge of notational correspondence between related operations to transform equations into equivalent forms. Demonstrate knowledge of order-of-operations along with grouping tools useful for altering operational-order including; vincula, parentheses, brackets, braces. Evaluate expressions containing these symbols. Understand and use exponents while solving real-world word-problems. Solve word-problems requiring the proportional scaling (up and down) of objects with given dimensions. Understand that a root of degree 2 is often called the "square root," a root of degree 3 is often called the "cube root," and a root of degree 4 is called the "fourth root," and degree 5 the "fifth root..." Understand that there are two square roots for positive radicands (e.g., $\sqrt[2]{4} = \pm 2$) and similarly two roots for even radicands with even indexes. Recognize the equivalence of radical notation and exponential notation representing the operation of root taking (i.e., $\sqrt[n]{a} = a^{1/n}$) and switch between fluidly. Understand properties of radicals and exponential and radical equivalent notation including: fractional exponents (i.e., $a^{m/n} = \sqrt[n]{a^m}$ $=(\sqrt[n]{a})^m$); and decimal exponents (e.g., $a^{1/2}=a^{.5}$) and negative exponents (i.e., $a^{-n}=\frac{1}{a^n}$). Understand numeric operations within radical notation including: addition; subtraction; multiplication ($\sqrt[n]{a} \sqrt[n]{b} = \sqrt[n]{ab}$ or $\sqrt[2]{a} \sqrt[2]{a}$ $=\sqrt[2]{a^2} = a$); and division $\left(\sqrt[n]{\frac{a}{b}} = \frac{\sqrt[n]{a}}{\sqrt[n]{b}}\right)$. Understand that the "principal root" is the positive root of a positive number (for $\sqrt[4]{81} = \pm 3$, +3 is the principal root) but is sometimes also used to refer to the negative root of a

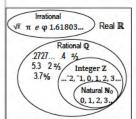
 $a^{0} = 1 \qquad a^{-n} = \frac{1}{a^{n}} \qquad a^{1/n} = \sqrt[n]{a}$ $a^{m} + a^{m} \cdot 2a^{m} \qquad a^{m} \cdot a^{n} = a^{m+n} \qquad (a^{m})^{n} = a^{mn}$ $(ab)^{m} = a^{m}b^{m} \qquad (ab^{m})^{n} = a^{n}b^{mn} \qquad (a+b)^{2} = a^{2} + 2ab + b^{2}$ $\frac{a^{m}}{a^{n}} = a^{m-n} \qquad \left(\frac{a^{m}}{b^{n}}\right)^{p} = \frac{a^{mp}}{b^{np}} \qquad \left(\frac{a}{b}\right)^{m} = \frac{a^{m}}{b^{m}}$

negative radicand with an odd index ($for \sqrt[3]{-64} = ^{-4}$), is the principal and only root). Understand that in radical notation, even indexes and positive radicands imply too roots (positive and negative) and that exponents that are common fractions imply only the principal root. Understand that the "imaginary unite" refers to the solution for $x^2 = ^{-1} = \sqrt{-1} = i$. Prime factor multi-digit numbers.

FRACTIONS/ RATIOS/ PERCENTAGES/ PROPORTIONS: Recognize and use standard notation in reference to: common fractions, decimal fractions; ratios, percentages. Using standard algorithms and problem specific strategies: add, subtract, multiply, and divide common fractions and mixed numbers with like and unlike denominators. Exponentiate, and take roots of common fractions and decimal fractions. Use equivalent fractions as a strategy to add and subtract common fractions. Rename fractions with unlike denominators to equivalent fractions with like denominators 5.NF.A.1. Solve word problems involving addition and subtraction of common fractions and mixed numbers (with common fractions), including cases of like and unlike denominators. Use mental estimations to assess the reasonableness of answers 5.NF.A.2. Rename improper fractions to mixed numbers and mixed numbers to improper fractions. Rename common fractions to decimal fractions and decimal fractions to common fractions. Rename common fractions. Reduce common

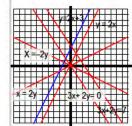
fractions to simplest terms. Understand the concept of relative primes across denominators. Prime factor multidigit denominators of common fractions as a strategy to find the LCD (lowest common denominator), LCM (lowest common multiple), and GCF (greatest common factor) of common fractions with unlike denominators. Reduce fractions to simplest terms. Identify the reciprocal of fractions and recognize that the product of a fraction and its reciprocal is a fraction of unity (one). Understand that division by zero is undefined and any fraction with a denominator of zero is undefined. Understand the meaning of undefined. Identify the parts of a common fraction: numerator, denominator, and vinculum. Identify fractions as an expression division: denominator (devisor), numerator (dividend) and quotient 5.NF.B.3. Understand the difference between fractions-of-unity and unitfractions. Compare common fractions with unlike denominators relative to size (e.g., 5/17 to 20/71, 2/13 to 5/31, 3/37 to 6/73) and rank them on a number line. Use ratios to express denominate measure relationships such as; proportion, speed, velocity, and mass-density. Translate notation between decimal, common fraction, and ratio notation smoothly. Compute between decimal and common fractions, percentages, proportions and ratios are all expressions of the fourth arithmetic operation (division). Apply knowledge of equivalent notation, partial products, order of operations, prime factor trees, the double inverse and properties of operations to multiply a common fraction by a: common fraction, whole number, improper fraction, decimal fraction, mixed decimal number, variable. Solve problems involving the six arithmetic operations and fractions in which all numerators and denominators are expressed with indeterminates (variables) 5.NF.B.4. Interpret the product $(a/b) \times a$ as a parts of a partition of q into b equal parts; equivalently, as the result of a sequence of operations $a \times q \div b$ Content 5.NF.B.4.a. Find the area of rectangles, trapezoids, trapezia, triangles, circles, irregular and regular polygons in which measures contain common fractions. Tile the polygons with square units and demonstrate by rearrangement that area can be expressed in square units for any polygon. 5.NF.B.4.b. Find the volume of solids (rectangular prisms; forms that have been created by adding rectangular prisms together; forms that have been constructed by removing rectilinear sections from a rectangular prism, and forms that have been created by slicing a rectangular prisms diagonally. Demonstrate by rearrangement that volume of polyhedra can be measure in cubic units. Recognize the scaling properties of multiplication (i.e., multiplying by a number that is less than one, produces a product that is scaled down; multiplying by a number that is greater than one, produces a product that is scaled up) 5.NF.B.5. Recognize that: The larger the denominator the smaller the quotient. The larger the numerator the larger the quotient 5.NF.B.5.a. Recognize that a given number multiplied by a proper fraction, produces a product that is smaller than the given number; And that a given number multiplied by an improper fraction, produces a product that is greater than the given number 5.NF.B.5.b. Using an equations Solve real world problems involving multiplication of fractions and mixed numbers by constructing an equation built from given information 5.NF.B.6. Solve word-problems involving: rate problems, e.g., speed, freefall (acceleration), mass density, markups and discounts, unit pricing, hourly wages, simple and compound interest, gratuities, commissions, etc.; gambling statistics; and probability arrays. Write equations which demonstrate the relationship between variables in the above examples. Construct tabular arrays graphs that reveal the relationships between numeric changes in variables (e.g., freefall; independent variable G) using intuitive design to facilitate understanding (e.g., slope of regression line slanting up to the right to express increase). Describe the difference between fractions of unity and unit fractions. Recognize that the reciprocal of a unit fraction is a rational integer. Recognize that the product of a unit fraction and its reciprocal results in a product that is a fraction of unity. Divide unit fractions by whole numbers and whole numbers by unit fractions 5.NF.B.7. Understand the mathematical logic involved in executing the double inverse (the inverse of division is multiplication and the reciprocal of a fraction closes the operation) while dividing whole numbers, mixed numbers, and fractions by common fractions. Interpret division of a unit fraction (1/n) by a non-zero whole number, and compute such quotients (i.e., Multiplication of two unit fractions produces a product that is a unit fraction, adding, subtracting, or dividing two unit fractions produces results that are not unit fractions 5.NF.B.7.a. Find the reciprocal of a unit fraction and recognize that the product of a fraction and its reciprocal is a fraction of unity (one). Identify a fraction's opposite and recognize that the addition of a unite fraction and its opposite is zero. Recognize that division of a whole number by its reciprocal (a unit fraction) is that whole number's perfect square. Interpret division of a whole number by a unit fraction, and compute such quotients 5.NF.B.7.b. Solve real world problems involving division of unit fractions by non-zero whole numbers

and division of whole numbers by unit fractions 5.NF.B.7.c. Solve numeric problems involving all six arithmetic operations and only unit fractions



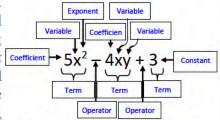
NUMBERS/ ABSOLUTE VALUE/ INEQUALITIES: Understand constructs related to integers, signed numbers, intervals, absolute value and inequalities/ use the appropriate notation relative to each, including: $>, <, \le, \ge, \ne, |x|, [x], (x), -\infty, +\infty, \cap, \cup$. Understand that the absolute value of a real number is non-negative without regard to its sign and represents its distance from the origin in a coordinate system. Find the opposite of any given integer and recognize that 0 is its own opposite. Recognize that an interval may, or may not include the designated number. Perform arithmetic operations involving denominate numbers, integers,

signed numbers, intervals, absolute value and inequalities. Discuss the properties of absolute value relative to arithmetic operations. Solve word-problems and graph equations and/or expressions involving integers, signed numbers, intervals, absolute value and inequalities. Determine the truth or false value of inequalities. Use standard notation for/ define subsets / understand numerical constructs such as: odd-even, integer, signed number, prime, composite, natural, algebraic, real, imaginary unit, rational, irrational, recursive, transcendental; and give examples of each: $\sqrt{1}$; $\mathbb{N} \subset \mathbb{Z} \subset \mathbb{Q} \subset \mathbb{R}$; π , e, i; etc. Understand: prime numbers (\mathbb{P}) and composite numbers are subsets of natural numbers (composite + prime = 2, 3, 4, ...) Be aware that, under some classification schemes, natural numbers do not include "0" and under other schemes "0" is included; in which case the natural and whole number are identical; understand and use standard notation (N_0) . Discuss similarities and differences of each of aforementioned such as: rational and irrational numbers (e.g., Q: can be expressed as a ratio of two integers, decimal expansions end or repeat. Irrational numbers cannot be expressed as a ratios of two integers, decimal expansions do not end or repeat.) Give approximations for irrational numbers (e.g., $\pi \approx \frac{22}{7}$, 3.14; $e \approx 2.718$; $\sqrt{2} \approx$ 1.414) and find their relative position on a number line.



ALGEBRAIC EXPRESSIONS AND EQUALITIES: Transform between linear equations in standard form ax+by=0, where a and $b \neq 0$; and slope-intercept form v=mx+b, where m is the slope of line b. Solve systems of simple linear equations by: 1) Graphing each equation and identifying point of intersection; 2) Solving for one variable, then substituting one equation into the other; 3) Adding or subtracting equations to elimination variables; 4) Multiplying one or more equations, then eliminating variables by adding or subtracting. Determine if equations have infinite solutions, no solutions (the empty set), or unique solutions (intersection).

Determine if two linear equations are: equivalent, independent, inconsistent. Graph lin ear equations in two variables. Write and interpret numerical expressions using order of operations conventions (i.e., Direction: left to right: stacked exponents top down, right to left; Operators: exponentiation and root coefficient taking; multiplication and division; addition and subtraction; Grouping: radical sign, vinculum, parentheses, brackets, braces) Understand the difference between (x-3) and (x-3). Understand that the horizontal line, in the first example,



is an operator for subtraction and means (x minus 3). Understand that the horizontal line in the second example is a property of the number 3, announcing that 3 is a signed number. The second example means (x times negative 3) Use notation conventions to enhance clarity 5.OA.A.1. Write alphanumeric expressions that record operators, coefficients, variables, constants and interpret 5.OA.A.2. Generate two numerical patterns using two given rules. Identify relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane 5.OA.B.3. Translate real-world (applied math concepts relevant to solving practical problems) word-problems into alphanumeric expressions including; representations of numeric relations between constants and variables; solution equations; and solution sets. Solve multistep word problems including: word-problems containing extraneous information or "noise" (relevant information must be discriminated from within a pool of information); indirect word-problems (needed information is not explicitly stated but can be derived from the given information); and interdependent word problems (needed information must be derived from solutions to other problems). Demonstrate competence

```
10<sup>0</sup>
<u>deci-</u> d <u>10<sup>-1</sup></u> 0.1
                                                    tenth
centi- c 10-2 0.01
                                                    hundredth
milli- m 10<sup>-3</sup> 0.001
                                                    thousandth
micro- μ 10<sup>-6</sup> 0.000001
                                                    millionth
<u>nano-</u> n <u>10<sup>-9</sup></u> 0.000000001
                                                    billionth
\underline{pico} \quad p \quad \underline{10^{-12}} \quad \underline{0.00000000000001}
                                                    trillionth
femto- f 10<sup>-15</sup> 0.000000000000001
                                                    quadrillionth
atto- a 10<sup>-18</sup> 0.000000000000000001
                                                    quintillionth
sextillionth
```

solving real-world problems requiring conversion between systems of measurement. Understand, discuss, demonstrate inversely and directly proportional relationships (∞) ILLUSTRATED with numeric examples. Use numeric examples to demonstrate comprehension of constructs including: proportion, ratio, and percentage along with arithmetic operations involving these constructs. Solve word-problems involving the previously mentioned constructs.

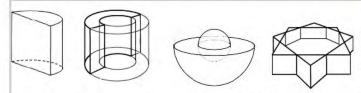
<u>Place Value:</u> Understand the place value system. Read numbers using place period names the decillions to the decillionths. Write very large and very small

numbers using scientific notation and engineering notation. Read/interpret/use/understand E-notation on a calculator. Rewrite scientific and engineering notation in standard notation. Add, subtract, multiply and divide numbers written in scientific and engineering notation involving denominate numbers. Identify significant figures when reading or writing numbers. Read and write using decimal notation. Understand that every digit to the right of the decimal point is less than one, every digit to the left of the Understand that digits to the left of the decimal point represent a whole number and digits to the right of the decimal point represent a fraction. Understand that in decimal notation: A number with digits only to the right of the decimal point, is a fraction; A number with digits only to the left of the decimal point, is a whole number; A number with digits both right and left of the decimal point, is a mixed number. Understand the "0" exception rule. Understand that digits to the left of the decimal point represent quantities one or greater. Understand that digits to the right of the decimal point represents quantities less than one. Recognize that in a multi-digit number, a digit in the ones place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left 5NBT.A.1. Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10 5.NBT.A.2. Read, write, and compare decimals numbers to the decillionths 5.NBT.A.3. Read and write decimals to decillionths using base-ten numerals, number names, and expanded form 5.NBT.A.3.a. Compare two decimals to the hundred millionths based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons 5.NBT.A.3.b. Use place value understanding to round decimals to any place 5.NBT.A.4. Understand that when a quantity is expressed in decimal notation: A number with digits only to the right of the decimal point, is a proper fraction; A number with digits only to the left of the decimal point, is a whole number; A number with digits both right and left of the decimal point, is a mixed number. Understand that decimal notation does not provide a means to express improper fractions; And all denominators are understood and are not explicitly stated. Understand that digits to the left of the decimal point represent quantities equal to one or greater. Understand that digits to the right of the decimal point represents quantities that are less than one. Understand the "0" exception rule. Fluently perform the six arithmetic operations on operands that are multi-digit mixed numbers, written in decimal notation, with the whole

```
110 =
                                                          Pascal's Triangle
                                      111 =
                                                 11
            1
                                      112 =
              2
                                                121
                                      11<sup>3</sup> = 1331
           3
                 3
                       1
                                      114 = 14641
              6
                   4
                          1
          10 10 5 1
                                      115 = 1 5 10 10 5 1 = 161051
1
     5
          5 20 15 6 1 11<sup>6</sup> = 1 6 15 20 15 6 1 = 1771561
35 35 21 7 1 11<sup>7</sup> = 1 7 21 35 35 21 7 1 = 19,487,171
  6
        15 20
17,000,000 + 2,100,000 + 350,000 + 35,000 + 2,100 + 71 = 19,487,171
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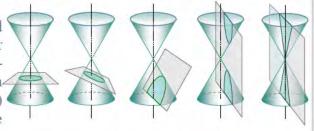
part and/or the fractional part consisting of any number of digits. Using standard algorithms and a variety of strategies specific to decimal numbers: multiply whole numbers with multi-digit multipliers and multiplicands 5.NBT.B.5. Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and

division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models 5.NBT.B.6. Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used 5.NBT.B.7.



<u>Geometry:</u> Identify geometric transformations (change in position and/or size) including: dilation (change in size, preserves shape); translations (slides, directional displaced); reflections (flips, mirror imagery), rotations

displacement around a central axis). Using only a straightedge and compass construct: perpendicular lines; parallel lines; regular polygons with 1-6 sides; Goethe's triangle; the proof-by-rearrangement, and "similar triangle proof" for the Pythagorean-theorem. Draw two dimensional scaled elevations (top, front, side) from a model and written description. Create scaled three dimensional sketches (using linear perspective): from plans



showing top, front, and side views; from written descriptions of objects; and from three dimensional rectilinear objects. Produce linear transformations (up, and down) of one and two dimensional constructions. Produce a uniformly scaled sketch that is proportionally scaled up (dilated) or down from another sketch or photograph. Understand and articulate in oral and written (essay) form, constructs including: Euclidean Plane; Euclidean Space; Dimensions (0-dimension, 1st dimension, 2nd dimension, 3rd dimension, 4th dimension). Recall and understand standard nomenclature used in geometry including: Angles (adjacent, opposite, complementary, exterior, interior, and supplementary, alternate,); Lines (parallel, segment, perpendicular, leg, ray, transverse, vertical, horizontal, congruent, similar, oblique, perpendicular, bisect, intersect); (similarity, congruence, coordinate, x-axis, y-axis, origin, ordered pair, linear transformation, translation, dilation, reflection, symmetry, scale factor) Use standard notation including: $\|, \overline{AB}, \overline{AB}, \overline{AB}, \overline{AB}, \overline{AB} \|$. Graph points on the coordinate plane to solve realworld and mathematical problems. Use a coordinate plane (Cartesian coordinate system) on which to plot ordered pairs (0,0) of points. Understand that the first number indicates displacement from along the x-axes and the second number indicates displacement along the y-axes. Use standard nomenclature that corresponds to the two axes and the coordinates (e.g., x-axis and x-coordinate, y-axis and y-coordinate) 5.G.A.1. Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation 5.G.A.2. Classify two-dimensional figures into categories based on their properties. Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles 5.G.B.3. Classify two-dimensional figures in a hierarchy based on properties 5.G.B.4. Convert like measurement units within a given measurement system. Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems 5.MD.A.1. Represent and interpret data. Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Use operations on fractions for this grade to solve problems involving information presented in line plots 5.MD.B.2. Understand concepts of volume. Recognize volume as an attribute of solid figures and understand concepts of volume measurement 5.MD.C.3. Recognize that a cube with side length of one unit, (unit cube,) fills a volume of "one cubic unit" that can be used to measure volume 5.MD.C.3.a. A solid figure which can be packed without gaps or overlaps using n unit cubes is said to have a volume of n cubic units 5.MD.C.3.b. Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units 5.MD.C.4. Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume 5.MD,C.5. Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent threefold whole-number products as volumes, e.g., to represent the associative property of multiplication 5.MD.C.5.a. Apply the formulas $V = l \times w \times h$ and $V = b \times h$ for rectangular prisms to find volumes of right rectangular prisms with whole-number edge lengths in the context of solving real world and mathematical problems 5.MD.C.5.b. Recognize volume as additive. Find volumes of solid figures composed of two nonoverlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real world problems 5.MD.C.5.c.

(turns.

 $_{n}P_{r} = \frac{n!}{(n-r)!}$ $_{n}C_{r} = \frac{n!}{(n-r)!} = \frac{n!}{(n-r)!} = \frac{n!}{(n-r)!} = \frac{n!}{(n-r)!}$ Statistics/ Graphing / Factorials, Permutations, Combinations, Probability:

quantitative, discrete, continuous, confounding, dependent, Graph linear equations with one, two, and three variables (e.g., locate separate points along a one dimension. Construct an informal quantitative argument relative to an infinite data pool distribution curve and a Gaussian distribution (continuous probability distribution). Understand measures of the central tendency (e.g., mode, median, arithmetic mean.) Contrast the concept of the central tendency with the concept of dispersion. Relate a frequency distributions to permutations, combinations, and normal distributions. Understand that with "permutation" order matters and that with "combinations" order does not matter. Understand and use standard notation to represent and solve real-world-problem, math-problems, and numeric problems involving combinations and permutations with and without replacement. Understand: Solve real-world-problems, word-problems, and mathematical problems involving probability with and without replacement. Construct graphs, charts and tables using collected data. Read and interpret (through written essays and oral discussions) graphs, charts, and data arrays including: line graph, bar graphs, pictographs, flowcharts, pie charts, waterfall charts, stacked bar charts, box-and-whisker charts, scatterplot. Construct

Create a histogram using such data. Relate empirical frequency distribution to the concept of a probability distribution of a continuous variable Discriminate between: a theoretical distribution and an observed distribution; theoretical probability (ratio of number of ways an event is expected to occur to the total number of possible outcomes) and empirical probability (relative frequency, experimental probability; ratio of the number of times a specific event was observed to occur: to the total number of trials). Create a theoretical frequency distribution and calculate theoretical probability base on the frequency distribution. Understand the general concepts (surface ideas not rigorous definitions) of ideas including: bin (bucketing); probability density; cumulative frequency; sample space; bias. Understand that an unlikely event can occur at any time during an event cycle, even the first.

$$9 P_3 = \frac{9!}{(9-3)!} = \frac{9 \cdot 8 \cdot 7 \cdot 6 \cdot 5 \cdot 4 \cdot 3 \cdot 2 \cdot 1}{6 \cdot 5 \cdot 4 \cdot 3 \cdot 2 \cdot 1} = 9 \cdot 8 \cdot 7 = 504$$

$$_{9}C_{3} = \frac{9!}{3!(9-3)!} = \frac{9 \cdot 8 \cdot 7 \cdot 6 \cdot 5 \cdot 4 \cdot 3 \cdot 2 \cdot 1}{3 \cdot 2 \cdot 1 \cdot (6 \cdot 5 \cdot 4 \cdot 3 \cdot 2 \cdot 1)} = \frac{9 \cdot 8 \cdot 7}{3 \cdot 2 \cdot 1} = 84$$

Sixth Grade / A.L.L. Mathematics Objectives, Aligned to Meet or Exceed Common Core Grade Level Standards / Mastered by or before year-end

<u>Prerequisite Knowledge / Skill Retention-reactivation:</u> Before providing instruction in the following objectives, the instructor shall assess students' retention / facility with objectives articulated for prior grades and review/reteach where required. To satisfy mathematics requirements for the current grade, students must demonstrate mastery in objectives articulated for prior grades along with those articulated for the current grade.

 $a^{0} = 2a^{m}$ $a^{m} + a^{m} = 2a^{m}$ $a^{n}a^{m} = a^{n+m}$ $\frac{a^{m}}{a^{n}} = a^{n-m}$ $(a^{m})^{n} = a^{mn}$ $(ab)^{m} = a^{m}b^{m}$ $(ab^{m})^{n} = a^{n}b^{mn}$ $(a + b)^{2} = a^{2} + 2ab + b^{2}$ $\sqrt[n]{a^{m}} = a^{m}/n$ $(ab)^{n} = a^{n}b^{n}$ $(\frac{a}{b})^{n} = \frac{a^{n}}{b^{n}}$ $(\frac{a^{m}}{a^{n}})^{n} = \frac{a^{mn}}{a^{nn}}$ $a^{1/n} = \sqrt[n]{a}$ $a^{-n} = \frac{1}{a^{n}}$

Numeric Operations: Apply knowledge of the six arithmetic operations, their repeated and inverse operations, properties of numbers, and properties of operations to understand notational equivalence in numeric expressions and to solve numeric problems. Demonstrate knowledge of order of operations including the use of grouping symbols including; vincula, parentheses, brackets, braces; and evaluate expressions containing these symbols. Solve word problems requiring the proportional scaling (up and down) of objects with given dimensions. Understand that radical notation with an even indexes and positive radicands imply both positive and negative roots and that exponents that are common fractions do not. Understand that the "imaginary unite" refers to the solution for $x^2 = -1 = \sqrt{-1} = i$. Calculate and understand quotients of fractions. Solve word-problems involving addition of fractions to fractions, subtraction of fractions from fractions, multiplication of fractions by fractions, division of fractions by fractions 6.NS.A.1, exponentiation of fractions with fractional exponents (both improper and proper). Fluently use a variety of standard algorithms and problem specific strategies to add, subtract, multiply, divide, exponentiate, and take roots of: whole numbers that are multi-digit 6.NS.B.2, decimal numbers that are multi-digit, and numbers that have multi-digit whole parts and multi-digit decimal numbers 6.NS.B.3. Find common factors and multiples of multi-digit numbers. Prime factor multidigit numbers. Use a variety of standard algorithms and problem specific strategies to add fractions

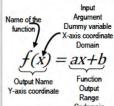
to fractions, subtract fractions from fractions, multiply fractions by fractions, divide fractions by fractions, and exponentiation fractions with fractional exponents (both improper and proper) 6.NS.B.2. Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers 1-100 with a common factor as a multiple of a sum of two whole numbers with no common factor 6.NS.B.4. Apply knowledge of the six arithmetic operations, their repeated and inverse operations, properties of numbers, and properties of operations to understanding the system of rational numbers. Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation 6.NS.C.5. Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and on a plane with negative number coordinates 6.NS.C.6. Recognize opposite signs of numbers as indicating locations on opposite sides of the origin on a number line. Recognize that the opposite, of the opposite of a number is that number itself and that 0 is its own opposite **6.NS.C.6.a.** Understand that signs of the numbers in an ordered pair, indicate which of the four quadrants (of a two dimensional coordinate plane) the point is located. Recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes 6.NS.C.6.b. Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane 6.NS.C.6.c. Understand ordering and absolute value of rational numbers 6.NS.C.7. Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram 6.NS.C.7.a. Write, interpret, and explain statements of order for rational numbers in realworld contexts 6.NS.C.7.b. Understand the absolute value of a rational number as its distance from 0 on the number line. Interpret absolute value as magnitude for a positive or negative quantity in a real-world situation 6.NS.C.7.c. Distinguish comparisons of absolute value from statements about order 6.NS.C.7.d. Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Include use of coordinates

and absolute value to find distances between points with the same first coordinate or the same second coordinate 6.NS.C.8.

FRACTIONS/ RATIOS/ PERCENTAGES/ PROPORTIONS/ODDS: Add, subtract, multiply, divide common fractions (including complex and compound fractions) and mixed numbers with like and unlike denominators. Exponentiate, and take roots of common fractions and decimal fractions. Rename fractions with unlike denominators to fractions with like denominators. Reduce common fractions to simplest terms. Understand that division by zero is undefined ant that any common fraction with a denominator of zero is undefined. Explain why any given number multiplied by a common fraction, produces a product that is less than the given number. Recognize the inverse and direct relationships of the numerator and denominator to magnitude (e.g., The larger the denominator the smaller the quotient. The larger the numerator the larger the quotient.) Find the reciprocal of a fraction and recognize that the product of a fraction and its reciprocal is a fraction of unity (one). Identify a fraction's opposite and recognize that the addition of a fraction's opposite is zero. Discriminate between fractionsof-unity and unit-fractions. Read and/write decimal fractions to the decillionths. Identify significant figures and understand conventions of rounding relative to writing and interpreting numbers. Use ratios to express denominate measure relationships such as; proportion, speed, velocity, mass-density, work, energy, power, pressure, buoyancy. Demonstrate equivalence of division notation, and translate between: percentages, common fractions, decimal fractions, quotients, and odds. Know that "Odds" are ratios and always represented by a pair of numbers; used in gambling and statistics. Know that "odds for" indicates the likelihood that a particular event will occur; and "odds against" indicates the likelihood that an event will not occur. Understand: that in gambling, odds are represented with ratios that indicates the amounts staked by parties to a wager (3:1 OR "3 to 1" odds, mean the first party stakes three times the amount that the second party stakes); that 3 to 1 odds mean that there are 3 possible ways an event cannot take place to each one way the event can occur (ratio of non-events to events). Find the percentage one quantity is of another; Find the percent of rational numbers including whole numbers, mixed numbers, fractions (common and decimal), denominate quantities (including ratios; i.e., 5% of the speed of light) 6.RP.A.3.c. Write equations expressing such relationships. Understand that: A ratio represents the number of times one number contains another (a ratio written a:b, or "a to b" where $b\neq 0$, represents the number of times "a" contains "b"); Ratios are equivalent to fractions and can be reduced; Ratios can be expressed as common fractions, decimal fractions, or quotients 6.RP.A.1; If a=apples and b=bananas, a:b represents, "apples to bananas;" Ratios can represent relationships between quantities of the same or different units; Proportionality is an expression of the ratio concept; "Rate" is a ratio; The concept of "unit rate" is similar to the concept of a "unit fraction" (n/1); Unite rate and describes the number of units (of one kind of object) corresponds to one unit of another kind of object. Use standard "ratio" nomenclature and notation, 6.RP.A.2. Solve rate, ratio, and unit rate word-problems (including: unit pricing, velocity, acceleration, mass density, remuneration, momentum, efficiency, power, 6.RP.A.3.b) that: are indirect (relevant information must be derived); contain "noise" (extraneous information is included), and are interdependent (relevant information is external) 6.RP.A.3. Construct tabular arrays of equivalent ratios (e.g., solution tables: freefall- acceleration under varying "G" environments; velocitydisplacement at varying time intervals) relating quantities with whole-number measurements, find missing values in tables, and graph or plot on the appropriate graphic format. Use tables to compare ratios 6.RP.A.3.a.

<u>ALPHANUMERIC EXPRESSIONS AND EQUATIONS</u>: Apply knowledge of the six arithmetic operations and their inverse operation, along with properties of operations to understand algebraic expressions and transform them into equivalent expressions. Write and evaluate numeric and algebraic expressions with exponents that are: integers (positive and negative), vulgar fractions, and decimal fractions **6.EE.A.1**. Transform linear equations into: standard form ax+by=0, where a and b \neq 0; slope-intercept form y=mx+b, where m is the slope of line b; point-slope form y-y₁=m(x-x₁), where (x₁, y₁) is any point on a line; and intercept form $\frac{x}{a} + \frac{y}{b} = 1$, where a and/or b \neq zero. Translate real-world word-problems into alphanumeric expressions. Solve systems of linear equations by: 1) Solving for one variable, then substituting one equation into the other; 2) Adding or subtracting equations to elimination variables; 3) Multiplying one or more equations, then eliminating variables by adding or subtracting. Graph systems of linear equations and identify intersection points (if any). Evaluate systems of linear equations for:

infinite solutions, no solutions; or unique solutions. Analyze equations for: equivalence, independence, inconsistency, and/or contradictions. Display mental dexterity solving multistep word-problems that: contains noise; are indirect or require prior knowledge (e.g., conversion between systems-of-measurement; translation between numerical expressions ($\frac{1}{2} = .5 = \frac{5}{10} = 50\%$); commonly known or derived formulas, $V = \pi r^2 / 3$.); are interdependent (required information that is dependent on solutions from prior word problems); and require information to be found within given informational graphs, tables, or charts. Graph linear equations in two and three variables using technology. Understand and use standard nomenclature including: term, degree, variable, indeterminate, coefficient, operator, constant, expression, monomial, binomial, trinomial. Understand the how the commutative property relative to terms in polynomials. Know and use standard polynomial notation and ordering conventions. Identify the degree of polynomials. Use properties of operations to add, subtract, multiply, divide, and factor within linear equations. Solve multi-step, real-world and mathematical problems using equations containing integers, decimal and common fractions, percentages, inequalities, denominate metrics, irrational numbers. Assess the reasonableness of solutions to equations using mental computation and approximation strategies. Represent algebraic relationships, given in real-world and mathematical word-problems, with alphanumeric equations or inequalities. Read, write, and evaluate alphanumeric expressions involving the six arithmetic operations, in which quantities (numbers) can be substituted for variables (letters) 6.EE.A.2. Construct algebraic expressions and equations drawn from real-life observations (field observations), verbal descriptions, and written discussions of numeric relationships and physical properties (e.g., write and equation taken from a verbal description of the inverse square law) 6.EE.A.2.a. Using standard nomenclature, identify the distinct parts (components) of numeric expressions, alphanumeric expressions, algebraic expressions and equations such as: terms, grouping symbols (vinculum, brackets, parentheses, radicand), operands, operators (+, -, vinculum, etc.), positional operators (in the expression 2B the position of the operands is the multiplication operator; in the expression A^B the superscript position of B is the exponentiation operator), sum, quotient, product, factor, root, coefficient, degree, etc.. Recognize, label, and understand the implications of hierarchical grouping schemes along with subordinate groupings (Russian Doll structures) in numeric expressions, alphanumeric expressions, algebraic expressions and equations 6.EE.A.2.b. Evaluate formulas (that include the use of the 6 arithmetic operations) utilized in real-world and hypothetical problems (such as Area: triangle A=½bh, square A=a², rectangle A=wh, circle A= πr^2 , regular polygons, trapezoids, irregular shapes, etc. Volume and surface area: cube V= a^3 , rectangular prism V=lwh, cylinder V= πr^2 h, sphere V= $4\pi \frac{r^3}{3}$, cone V= $\pi r^2 \frac{h}{3}$, regular dodecahedron V= $\frac{1}{4}$ (15+7 $\sqrt{7}$) a^3 ; prisms, pyramids, spheres, etcetera) by substituting quantitative values for variables. Evaluate expressions, equations, formula, and functions at various structural levels of order-of-operations including; alphanumeric expression with no grouping symbols and the operator rule is followed (evaluation priority sequence – exponentiation and root taking, multiplication and division, addition and subtraction); vincula and radical signs alter the operator rule; parentheses alter the operator rule; parentheses alter the operator rule, the vincula rule, and the radical sign rule; and combinations of all including brackets.) Do not confuse (x-3) with (x-3). The horizontal line, in the first example, is an operator for subtraction and means (x minus 3); order of operation rules apply. The horizontal line in the second example is a property of the number 3, meaning this three is a signed number - negative integer. The second example means (x times negative 3); order of operation rules do not apply.) Know how to apply notation conventions to enhance clarity; ⁻³x means negative three time x 6.EE.A.2.c. Apply the properties-of-operations rules to generate equivalent expressions 6.EE.A.3. Identify when two expressions are equivalent 6.EE.A.4. View equations and inequality as a questions and their solutions as the process of answering those questions. Use substitution to determine which values from a given set, if any, make an equation or inequality, 6.EE.B.5. Solve real-world and mathematical problems by writing equations that express the numerical relationships between the known and unknown quantities. Use variables to represent any unknown or missing quantities. Understand that a variable can represent any known or unknown quantity 6.EE.B.6. Solve real-world and mathematical problems by writing and solving equations in the form x + p = q and px = q for cases in which p, q and x are all nonnegative rational numbers 6.EE.B.7. Write an inequality of the form x > c or x < c to represent a constraint or condition in the real-world or mathematical problem. Recognize that inequalities of the form x > c or x < c have infinite solutions; represent solutions of such inequalities on number line diagrams. Represent and analyze quantitative



represented in various forms.

relationships between dependent and independent variables 6.EE.B.8. Use variables to represent two quantities that change in relationship; write an equation to express the dependent variable, in terms of the independent variable. Analyze relationships between the dependent and independent variables using graphs, tables, and equations 6.EE.C.9.

Range Codomain Relation FUNCTIONS: Understand functions as relations between a set of inputs that correspond to a set of outputs. Represent and explain functions as an s (step-by-step instructions); a recipe, a rectangular array, graph, and/or an alphanumeric equation. Illustrate and explain concepts relative to the concept of functions using visual models or Venn diagrams to map a set of input elements to output elements. Understand that to determine an output value for a particular input value, the relation between them must be evaluated. Understand and use standard function nomenclature and notation including: argument, domain, codomain, range, input, output, relation, ordered pairs, and element. Recognize that for each input there is one and only one output. Evaluate simple linear and non-linear functions (e.g., $f(x) = x^2$) express inputs and outputs as ordered pairs (i.e., x, f(x); x, x^2). Graph with aid of technology. Translate formulas to function notation, evaluate, and chart, including concepts involving relationships such as: potential energy, kinetic energy, power, and pressure. Understand constructs related to functions including: A function is a relationship between inputs and outputs such that each input may map to one and only output, but one output may map to more than one input. Understand that Functions

can be represented with formulas, diagrams, tables, or graphs. Understand nomenclature associated with functions including: domain, codomain, ordered pairs, arguments image, range, elements, mapping. Compare functions

Systems of Measurement / Denominate Numbers: Use knowledge of ratios to convert units between and within systems of measurement (e.g., SI, US customary units). Manipulate and transform units when adding, subtracting, multiplying or dividing denominate numbers (simple and compound). Reduce to lower or higher denominations when appropriate. Recall US customary units (inch, foot, yard, mile; acre; ounce, cup, pint, quart, gallon; ounce, pound, short ton, degrees Fahrenheit) and SI International System of Units (SI: meter, kilogram, second, ampere, kelvin, candela, mole) Natural units (e.g., c, speed of light; G, gravitational constant) 6.RP.A.3.d. Within each system of measurement recall the number of sub-units contained in larger units (e.g., feet in a yard.) Solve wordproblems containing denominate numbers. Understand and explain the following concepts and nomenclature: leap years; laps time; leap year, leap seconds; time zones; Milankovitch cycles, eccentricity, axial tilt, precession; AM, PM; AD, BC, Current Era (CE), Before Current Era (BCE). Solve word problems involving addition and subtraction of time intervals including minutes, hours, and days, within and across time zones including the international dateline. Solve real-world problem relative to the Geographic Coordinate System and Coordinated Universal Time system (UTC) and understand associated nomenclature including: latitude (\phi, phi), parallels (circles of latitude); longitude (λ, lambda), meridian (line of longitude), elevation, parallels,), Greenwich Mean Time (GMT), International Atomic Time (TAI), daylight saving time (DST), leap seconds, standard time, solar time, Greenwich Mean Time, nautical time, time offset international (IDL).

Geometry: Graph linear equations with one, two, and three variables on a two dimensional coordinate plane. Using models, compare and contrast the constructs of congruence and similarity: With lines used as the model (segments, intersections, parallel); With angles used as the model (e.g., right, 45°); With 2D-shapes as the model (e.g., regular polygons of various sizes, triangles of various size and angle measurements), And with 3D-forms used as models (e.g., platonic solids, pyramids, prisms of differing sizes). Validate that geometric similarity and congruency, of two dimensional constructions, are independent of orientation. Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems 6.G.A.1. Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas V = l w h and V = b h to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems 6.G.A.2. Draw polygons in the

coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving real-world and mathematical problems 6.G.A.3. Represent three-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems 6.G.A.4. Understand, recall and use (oral and written) standard nomenclature used in geometry including: Angles (adjacent, opposite, complementary, exterior, interior, and supplementary, alternate,); Lines (parallel, segment, perpendicular, leg, ray, transverse, vertical, horizontal, congruent, similar, oblique, perpendicular, bisect, intersect); (rotation, reflection, translation, dilation, linear transformation, scale factor,); Congruence, Similarity.

Statistics, Probability, Factorials, Permutations, and Combinations: Understand that statistics is the collection, organization, and analysis of large amounts of data; And that probability deductions can be made about groups but not individuals. Recognize that a statistical question anticipates variability (in data related to the question) and accounts for it in the deductions 6.SP.A.1. Understand that a set of data collected to answer a statistical question, has a distribution which can be described by its center, spread, and overall shape. Understand that the probability density of distributions, such as a Gaussian distribution, can be described by measures of the central tendency (mean, median, and mode); spread (dispersion of measurements); and shape (kurtosis: leptokurtic, mesokurtic, Platykurtic; skewness; negative, positive) 6.SP.A.2. Understand that measures of the central tendency are "averages" of all the data points, and measures of dispersion (variance) describes the average distance the data points "spread" from the mean. Recognize that measures of the central tendency summarizes data values with a single number, measures of variation describe how much data values vary, summarized with a single number 6.SP.A.3. Display numerical data in plots on a number line, including dot plots, histograms, and box plots 6.SP.B.4. Design a statistical study: collect numerical data, organize it, summarize it in relation to context, and analyze the data 6.SP.B.5a. Write a report and give an oral presentation including: the number of observations 6.SP.B.5.a; a description of the subject under study; the method of data collection; the method of measurement; the units of measure 6.SP.B.5.b; the method of assuring inter-rater reliability; measures of the central tendency, mean, median, mode; variance (standard deviation); density under the curve measures (kurtosis, skew); a discussion of the rationale behind the statistics used; a description of any unusual patterns 6.SP.B.5.c; and discussion of inferences suggested by the data and its analysis along with conclusions 6.SP.B.5.d. Understand constructs such as: random variables, stochastic processes and events, non-deterministic events, dynamic systems, and simple concepts relative to deterministic chaos or chaos theory. Understand that an unlikely event can occur at any time during an event cycle, even the first. Understand and discuss the concept, "Given infinite time and event cycles, any event that can occur, will occur."

Seventh Grade / A.L.L. Mathematics Objectives, Aligned to Meet or Exceed Common Core Grade Level Standards / Mastered by or before year-end

<u>Prerequisite Knowledge / Skill Retention-reactivation:</u> Before providing instruction in the following objectives, the instructor shall assess students' retention / facility with objectives articulated for prior grades and review/ reteach where required. To satisfy mathematics requirements for the current grade, students must demonstrate mastery in objectives articulated for prior grades along with those articulated for the current grade.

Numeric Operations: Perform six arithmetic operations involving numbers containing positive and negative exponents, exponents that are common and decimal fractions. Solve real-world problems that require mastery knowledge of order of operations along with the mastery knowledge of grouping symbols including; vincula, parentheses, brackets, braces. Solve word problems requiring the proportional scaling (up and down) of objects with given dimensions. Solve numeric problems written in radical notation (with even and odd indexes and positive and negative radicands) Understand that the "imaginary unite" refers to the solution for $x^2 = -1 = \sqrt{-1} = i$. Understand that a complex number contains a real part and imaginary part (a+b i). Solve real-world, multistep word-problems including: Indirect word problems (information required to solve a problem is not given but must be derived); wordproblems with "noise" (relevant information is embedded within extraneous information), and interdependent word-problems (problems that requires prior knowledge or information from previous word-problems). Add, subtract, multiply, divide, exponentiate, and take the root of rational numbers including: signed numbers, common fractions, decimal fractions, and mixed numbers. Represent addition and subtraction of rational and irrational numbers on a horizontal or vertical number line 7.NS.1. Solve real-world word-problems that involve vertical and horizontal number lines, and two and three dimensional Cartesian coordinate systems to reference physical and numeric conditions (e.g., altitude, sea-level, flight paths, temperature; orbits of the earth and moon, displacement of a vehicle traveling on a 30 mile circular path for an hour at 30 mph). Understand the constructs of negation, cyclical counting-with and with positional value, the additive inverse, identity and unity, multiplicative invers, zero-product property) 7.NS.la. Understand that the sum of a real number and its opposite is zero. Understand that the absolute value of a real number can be described as that number's distance from a fixed point on a horizontal or vertical number line, without regard to direction. In a real-world context recognize examples of numeric relationships including: absolute value, negative integers and signed numbers, negation, the additive inverse, the zero-product property 7.NS.1b. Understand that subtraction of rational numbers can be viewed as the inverse addition (additive inverse on a number line). Demonstrate that the distance between two rational numbers on the number line is the absolute value of their difference. Apply this principle in a real-world context 7.NS.A.1.c. Understand properties of operations (including: commutative, associative, distributive, identity, symmetric, multiplicative, equality, reflexive, transitive, substitution, partition, distributive, etc.) and recognize their applicability while performing arithmetic operations (addition, subtraction, multiplication, division, exponentiation, root taking; their inverse and repeated operation) with rational numbers (including common fractions, decimal fractions, and complex fractions) and/or while transforming equations into equivalent equations Understand that properties-of-numbers and properties-of-operations apply to rational numbers including common fractions, decimal fractions. Apply properties-of-operations as strategies to add and subtract rational numbers

7.NS.A.1.d. Apply the properties-of-operations as strategies to multiply and divide rational numbers 7.NS.A.2. Understand and apply algebraic properties related to integers. Understand: like the set of natural numbers the set of integers is closed under the properties-of-operations for addition and multiplication (i.e., the sum or product of two integers, is an integer). Understand: integers are closed under subtraction and division. Understand: although natural numbers are closed under exponentiation, integers are not $(a^{-n} = \frac{1}{a^n})$. Know and mathematically justify the multiplication, division, exponentiation, and root taking rule signed numbers. Interpret products, quotients, and roots of rational numbers by recognizing and describing them relative to the real-world contexts 7.NS.A.2.a. Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. Interpret quotients of rational numbers by describing real-world contexts 7.NS.A.2.b. Apply properties of operations as strategies to multiply and divide rational numbers 7.NS.A.2.c. Convert common fractions to decimal fractions using long division. Understand: rational number can be express in common fraction form; converting a common, proper fraction to a decimal fraction will result in a quotient that terminates or repeats indefinitely (2/3 = .666, 1/7 = .142856). Use standard notation including the repetend 7.NS.A.2.d. Solve real-world and mathematical problems involving the six arithmetic operations with rational numbers 7.NS.A.3.

SYSTEMS OF NUMERALS, OPERATIONS AND PROPERTIES: Compare numeral systems that use position notation and those that do not (e.g., Hindu-Arabic with Roman). Compare and contrast binary, decimal, hexadecimal numeral systems. Using standard nomenclature and notation, illustrate the relationships between sets and subsets of numbers (e.g., $\mathbb{N} \subset \mathbb{Z} \subset \mathbb{Q} \subset \mathbb{R}$ numbers, real and imaginary numbers, concrete and abstract numbers, denominate numbers, rational and irrational numbers, transcendental and algebraic numbers, countable and uncountable numbers, natural numbers, ordinal and cardinal numbers, complex numbers. Discuss properties of each set of numbers (e.g., Irrational numbers cannot be expressed as a ratio of two integers, their decimal expansions do not end or repeat) and examples of each (e.g., transcendental numbers: π , e; irrational numbers π , e, $\sqrt{2}$, φ $\sqrt{3}$). Identify properties including: commutative, associative, distributive, identity, symmetric (if a=b and b=a), multiplicative axiom (if a=b and c=d then ac=bd); Axioms of equality: reflexive a=a, transitive (if a=b and b=c then a=c), substitution, partition (a quantity is equal to the sum of its parts), addition (if a=b and c=d then a+c=b+d). Apply knowledge of the six arithmetic operations to common fractions and mixed numbers comprised entirely of: numerals, a mix of numerals and variables, entirely of indeterminates and symbols representing constant quantities, and denominators (like denominators, unlike denominators in which one can be named to the other, unlike denominators which are relative primes, unlike denominators that contain primes in common, and unlike denominator that contain relative primes.) Solve real-world problems that require the application of this knowledge.

<u>ALGEBRAIC EXPRESSIONS AND EQUATIONS</u>: Describe polynomials (e.g., expressions containing only: variables, coefficients, non-negative integer exponents). Discuss similarities and differences between linear and nonlinear equations; a variable and indeterminate, and give examples. Understand and use standard nomenclature including: term, degree, variable,

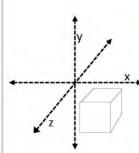
indeterminate, coefficient, operator, constant, expression, monomial (univariate), binomial, trinomial. Understand the commutative law relative to the ordering of terms in a polynomial. Know and use standard polynomial ordering and notation conventions (e.g., degree, indeterminate, use of lower/uppers case letters). Identify the degree of polynomials. Understand and use function notation involving polynomial equations (polynomial functions). Use properties of operations to transform equivalent expressions. Use properties of operations as strategies to add, subtract, multiply, divide, factor, and expand linear expressions with rational coefficients 7.EE.A.1. Understand that by transforming an expression into equivalent forms, obscured relationships between variables can be revealed 7.EE.A.2. Solve real-world and mathematical problems using numeric and alphanumeric expressions and equations. Solve multi-step real-life and mathematical problems containing positive and negative rational numbers in any form (whole and mixed numbers, common and decimal fractions). Apply properties of operations to calculate numbers in any of their forms; convert between forms as appropriate; and assess the reasonableness of answers using mental computation, approximation strategies, and estimation 7.EE.B.3. Construct simple equations and inequalities representing numeric relationships observed in the real-world. Construct equations and inequalities using letters near the end of the alphabet to represent variables quantities (or indeterminates), letters near the beginning of the alphabet to represent constant quantities, and arithmetic/algebraic notation to represent numeric relationships between the variables and constants. Solve realworld or numeric problem through mathematical reasoning (logical deduction, formal and informal inference, analysis, intuition) 7.EE.B.4. Use equations in the form ax + b = c and a(x)+ b) = c, where a, b, and c, are rational numbers; to solve real-word and word-problems. Compare algebraic to arithmetic solutions by identifying and contrasting the sequence of operations in each 7.EE.B.4.a.

Solve word-problems involving inequalities of the form ax + b > c or ax + b < c, where a, b, and c, are rational numbers; Graph the solution set and explain numeric relationship in oral and essay form 7.EE.B.4.b.

FRACTIONS/ RATIOS/ PERCENTAGES/ PROPORTIONS/ODDS: Know, and use standard notation and nomenclature to discuss: 1. Fractions (decimal, vinculum, common, vulgar, complex, compound, proper, improper, fractions of unity, unit fractions, equivalent fractions, relative primes, repetend, algebraic fractions, etc.); 2. Ratios (antecedent, consequent, factor, quotient, etc.); 3. Proportions (proportionality constant, directly proportional, inversely proportional, reciprocal factor, unit rate, coefficient of proportionality). Recognize that fractions, ratios, percentages, and proportions are expressions of the fourth arithmetic operation, division; And convert between such expressions. In conjunction with denominate numbers (i.e., unit measures for liquid volume, weight, time, atmospheric pressure, temperature, illumination, force, inertia, etc.), use knowledge of fractions, ratios, percentages, and proportions to solve multistep word problems related to real-world subjects such as: calculating monetary exchange rates, tax rates, velocity, acceleration, radioactive decay rate, interest rates; determining aspect ratios, dilution ratios, inverse-square law, freefall, :cost-benefit ratios, price-performance ratios, gradient ratios. Analyze proportional relationships and use them to solve real-world and mathematical problems. Utilizing a variety of "quotient-ratio" notation schemes, compute unitrate-ratios in real-life word-problems of: lengths, areas; volumes; weights, forces; mechanical advantage; velocity; atmospheric-hydrostatic pressure; mass density; in various denominate systems of measure (e.g., US customary, SI); convert within (e.g., in. to feet) and between the

SI and US customary) 7.RP.A.1. Recognize and represent proportional relationships between quantities 7.RP.A.2. Utilizing ratios, decide whether two quantities are in a proportional relationship. Evaluate for equivalent ratios using a table or by graphing on a coordinate plane. By testing for and equality of two ratios, or graphing and evaluating the attributes of the lines for slope and linearity. Understand and use standard notation (e.g., $\frac{\Delta y}{\Delta x} = k$ 7.RP.A.2.a. In tables, graphs, equations, diagrams, and verbal descriptions, determine if proportional relationships are present between variables (e.g., time speed, travel time, displacement), determine the relative directions of relationships (inversely proportional, directly proportional), and identify the coefficient-of-proportionality (proportionality constant), and/or unit rate 7.RP.A.2.b. Represent proportional relationships between variables with an equation 7.RP.A.2.c. On a graph of that represents a proportional relationship between two variables, explain the relevance of point (x, y) to the situation the graph represents with special attention to the points (0, 0) and (1, k) where k is the unit rate or the proportionality constant 7.RP.A.2.d. Use proportional relationships to solve multistep ratio and percent problems involving such things as: growth rate and age, birthrate and age, mortality and 7.RP.A.3.

Systems of Measurement / Denominate Numbers: Convert between and within systems of measurement (e.g., SI, US customary units). Recall the US customary units and SI units. Within each system recall the number of units contains of another (e.g., feet in a yard). Solve problems (including word-problems), containing denominate numbers. TIME: Mastery-knowledge-explain: The frequency of leap years; daylight saving time; solar time; laps time; standard time; Greenwich Mean Time (GMT), Coordinated Universal Time (UTC), and Terrestrial Time (TT); leap year, leap seconds; time zones; the international date line; Milankovitch cycles, eccentricity, axial tilt, precession; AM and PM; AD, BC, Current Era (CE), Before Current Era (BCE). Using stopwatches record in written form (using the proper notation and nomenclature) to fractions of a second. Solve word problems involving addition and subtraction of time intervals including minutes, hours, and days, within and across time zones including the international dateline. Solve word-problems involving plots and graphs of denominate numbers and fractional (decimal, common fractions, and sub-units). Discriminate between a scalar quantities (only magnitude) and vector quantities (direction and magnitude); give examples of each



Geometry: Use the "Pythagorean Triple" (3, 4, 5); one of its multiples (6, 8, 10); the Pythagorean relationships relative to isosceles right triangles $(45^{\circ}, 90^{\circ}, 45^{\circ}; 1,\sqrt{2},1)$ and/ or equilateral triangles, and 30-60 right triangles $(1, 2, \sqrt{3})$ to solve real-world problems. Use the Pythagorean Theorem to solve problems in two and three dimensions. Produce graphic proofs for the Pythagorean theorem. Using only a straightedge and compass, construct a "proof-by-rearrangement," and a "similar-triangle" proof for the Pythagorean theorem. Identify geometric transformations

(change in position and/or size) including: dilation (change in size, preserves shape); translations (slides, directional displaced); reflections (flips, mirror imagery), rotations (turns, displacement around a central axis). Solve problems involving scale drawings of geometric figures, including computing actual

lengths and areas from a scale drawing. Redraw a scaled drawing at a different scale. Verbally and in essay form describe attributes of two and three dimensional rectilinear forms. In essay form describe a process of scaling that preserves proportions. Pictorially represent actual three dimensional figures on a two dimensional surface that are proportionally similar but scaled down (dilation). Use of linear perspective to produce a scaled, three dimensional sketch from a two dimensional elevation plan. Draft a scaled elevation plan from a three dimensional physical model. Draw two dimensional scaled plans to construct three dimensional geometric forms and construct the forms (e.g., platonic solids. In essay, describe the unique attributes of each constructed geometrical figures and the relationships between them. Solve problems involving scale drawings of geometric figures that require: Computation of lengths and areas from a scale drawing; scaling a drawing up or down 7.G.A.1. Draw (freehand, with ruler and protractor or with technology) specific geometric shapes and forms with given proportions. Using only a straightedge and compass, construct: perpendicular lines; parallel lines; regular polygons with up to ten sides; Goethe's triangle 7.G.A.2. Identify platonic solids (tetrahedron, hexahedron, octahedron, dodecahedron, and icosahedron) and discuss their properties. Identify regular polygons (trigons, tetragons, pentagons, hexagons, heptagons, octagons, nonagons, decagons) discuss their properties, and recall formulas and strategies to find their area, perimeter, apothem, circumradius, and interior angles. Recall nomenclature and classification schemes that sort all possible convex trigonal and tetragonal constructions into categories including: Quadrilaterals (rectangles, squares, rhomboids, rhombuses, isosceles trapezoids, trapezoids, kites, trapezia, parallelograms); triangles (right, obtuse, acute; equilateral, isosceles, scalene) discuss their properties and recall formulas and strategies to find the area, perimeter, diagonals, and interior angles. Identify and describe two dimensional figures obtained from the intersection of a two dimensional plane and three dimensional forms including: a plane and cone (conic sections), a plane and cylinder, a plane and rectilinear prisms and plane and pyramids. Discuss their attributes and use standard plane-geometry to identify and name the shapes such as: ellipse; parabola; hyperbola; circle; isosceles triangle; right triangle; rhomboid; skew pentagon 7.G.A.3 Describe the relationship between the circumference and area of a circle. Recall or derive formulas and use them to solve real-life and mathematical problems involving: the Pythagorean theorem; regular and irregular polygons and polyhedra; circles, triangles, quadrilaterals, angles, area and circumference of a circle, surface area, volume, in various metrics (US, SI) 7.G.B.4.

Solve multistep word-problems that contain noise, are interdependent, and are recursive (sounds like like) using knowledge about supplementary, complementary, vertical, and adjacent angles. Recall and transform formulas to solve for the unknown measures 7.G.B.5. Solve real-world and mathematical problems involving area, volume and surface area of two and three dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms Recall/derive formulas to find the area, diameter, radius, and circumference of a circle. Identify right prisms and pyramids having regular polygonal bases (including circular bases) and recall/derive formulas to find volume, surface area, dihedral angles, and edge length. Identify truncated and skew prisms and pyramids. Find the volume, surface area and radius of a sphere 7 G B 6

Know and use standard nomenclature and concepts including: degrees in a circle, pi, angle, midpoint; regular polygons; Angles (adjacent, opposite, complementary, exterior, interior, and supplementary); Lines (parallel, segment, perpendicular, ray, transverse, congruent, similar, oblique, perpendicular.

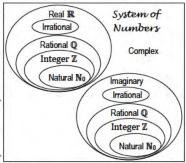
Statistics, Probability, Factorials, Permutations, and Combinations: Use random sampling to draw inferences about a population. Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences 7.SP.A.1. Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions 7.SP.A.2. Draw informal comparative inferences about two populations. Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities, measuring the difference between the centers by expressing it as a multiple of a measure of variability. For example, the mean height of players on the basketball team is 10 cm greater than the mean height of players on the soccer team, about twice the variability (mean absolute deviation) on either team; on a dot plot, the separation between the two distributions of heights is noticeable 7.SP.B.3. Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations. For example, decide whether the words in a chapter of a seventh-grade science book are generally longer than the words in a chapter of a fourth-grade science book 7.SP.B.4. Investigate chance processes and develop, use, and evaluate probability models. Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event 7.SP.C.5. Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability. For example, when rolling a number cube 600 times, predict that a 3 or 6 would be rolled roughly 200 times, but probably not exactly 200 times 7.SP.C.6. Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy 7.SP.C.7. Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events. For example, if a student is selected at random from a class, find the probability that Jane will be selected and the probability that a girl will be selected 7.SP.C.7.a. Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process. For example, find the approximate probability that a spinning penny will land heads up or that a tossed paper cup will land open-end down. Do the outcomes for the spinning penny appear to be equally likely based on the observed frequencies 7.SP.C.7.b? Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation 7.SP.C.8. Understand that, just as with simple events, the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs 7.SP.C.8.a. Represent sample spaces for compound events using methods such as organized lists, tables and tree diagrams. For an event described in everyday language (e.g., "rolling double sixes"), identify the outcomes in the sample space which compose the event 7.SP.C.8.b. Design and use a simulation to generate frequencies for compound events 7.SP.C.8.c. Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linearly or nonlinearly). Sketch a graph that exhibits the qualitative features of a

function that has been described verbally. Discriminate between: Causal and casual variables; dependent and independent variables; confounding variables and omitted variables, controlled and uncontrolled variable. Understand and discuss in verbally and written essay: line regression, derivatives, correlation, covariance, hypothesis, hypothesis testing, bias, ex post facto, error, variance, standard deviation, variance. Contrast and compare "descriptive statistics" with "inferential statistics."

Eighth Grade / A.L.L. Mathematics Objectives, Aligned to Meet or Exceed Common Core Grade Level Standards / Mastered by or before year-end

<u>Prerequisite Knowledge / Skill Retention-reactivation:</u> Before providing instruction in the following objectives, the instructor shall assess students' retention / facility with objectives articulated for prior grades and review/ reteach where required. To satisfy mathematics requirements for the current grade, students must demonstrate mastery in objectives articulated for prior grades along with those articulated for the current grade.

Numeric Operations: Know that numbers that are not rational are irrational. Understand that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually, and convert a decimal expansion which repeats eventually into a rational number 8.NS.A.1. Use rational approximations of irrational numbers to compare the size of irrational numbers. Find the approximately of irrational numbers on a number line, and estimate the value of irrational numbers expressions (e.g., π^2). Approximate the principal square root of



nonnegative, real, two digit numbers, using a rough estimation strategy or standard algorithm (e.g., find square roots through repeated subtraction of odds; 8.NS.A.2.

ALGEBRAIC EXPRESSIONS AND EQUATIONS: Factor equations Write expressions in equivalent forms to solve factors, and coefficients problems. Factor a quadratic expression to reveal the zeros of the function it defines. Complete the square in (+) Understand that rational expressions form a system analogous to the rational numbers, closed under addition, subtraction, multiplication, and division by a nonzero rational expression; add, subtract, multiply, and divide rational expressions. Use the properties of exponents to transform expressions, Create equations and inequalities in one variable and use them to solve problems. Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales. Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters. Solve quadratic equations in one variable. Solve a simple system consisting of a linear equation and a quadratic equation in two variables algebraically and graphically. For example, find the points of intersection between the line y = -3x and the circle $x^2 + y^2 = 3$. Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line). Graph the solutions to a linear inequality in two variables as a half-plane (excluding the boundary in the case of a strict inequality), and graph the solution set to a system of linear inequalities in two variables as the intersection of the corresponding half-planes. Expressions and Equations Work with radicals and integer exponents. Know and apply the properties of integer exponents to generate equivalent numerical expressions. For example, $3^2 \times 3^{-5} = 3^{-3} = 1/3^3 = 1/27$ 8.EE.A.1. Use square root and cube root symbols to represent solutions to equations of the form $x^2 = p$ and $x^3 = p$, where p is a positive rational number. Evaluate square roots of small perfect squares and cube roots of small perfect cubes. Know that $\sqrt{2}$ is irrational 8.EE.A.2. Use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other. For example, estimate the population of the United States as 3 times 108 and the population of the world as 7 times 109, and determine that the world population is more than 20 times larger 8.EE.A.3. Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities (e.g., use millimeters per year for seafloor spreading). Interpret scientific notation that has been generated by technology 8.EE.A.4. Understand the connections between proportional relationships, lines, and linear equations. Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways. For example, compare a distance-time graph to a distance-time equation to determine which of two moving objects has greater speed 8.EE.B.5. Use similar triangles to explain why the slope m is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation y = mx for a line through the origin and the equation y = mx + b for a line intercepting the vertical axis at b. Analyze and solve linear equations and pairs of simultaneous linear equations 8.EE.B.6. Solve linear equations in one variable 8.EE.C.7. Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler forms, until an equivalent equation of the form x = a, a = a, or a = b results (where a and b are different numbers) 8.EE.C.7.a. Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms 8.EE.C.7.b. Analyze and solve pairs of simultaneous linear equations 8.EE.C.8. Understand that solutions to a system of two linear equations in two variables correspond to points of intersection of their graphs, because points of intersection satisfy both equations simultaneously 8.EE.C.8.a. Solve systems of two linear equations in two variables algebraically, and estimate solutions by graphing the equations. Solve simple cases by inspection 8.EE.C.8.b. Solve real-world and mathematical problems leading to two linear equations in two variables 8.EE.C.8.c.

FUNCTIONS: Define, evaluate, and compare functions. Understand that a $f:X \longrightarrow Y$ function is a rule that assigns to each input exactly one and only one output but one output may be produced by more than one input. Understand that the graph of a function is the set of ordered pairs consisting of an input and the corresponding f(x) = youtput 8.F.A.1. Compare properties of two functions each represented in a different way (algebraically, graphic ally, numerically in tables, or by verbal descriptions $f^{-1}(x) = y$ 8.F.A.2. Interpret the equation y = mx + b as defining a linear function, whose graph is a straight line. Give examples of functions that are not linear 8.F.A.3. Use functions to model relationships between quantities. Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values 8.F.B.4. Describe qualitatively the functional relationship between two quantities by analyzing a graph. Sketch a graph that exhibits the qualitative features of a function that has been described verbally 8.F.B.5. Express linear functions in a variety of forms (e.g., tables, graphs) to model/compare/contrast varying relationships such as: Instantaneous velocity in freefall, at different time intervals, experienced by small objects of the same mass, near a variety of large bodies with different masses (gravitational force); Mass-density of objects of the same volume comprised of different elements; Pay-back amounts of equivalent loan-amounts with varying points, interest rates, payment-amounts, compound periods, repayment periods; Expected hourly wages relative to varying educational levels, return on investment associated with various universities; Expected scholarship/financial amounts relative to grades, SAT scores; Expected miles per gallon relative to speed, engine displacement, vehicle weight; Returns on investments relative to real-world variables. Express such relationships in simple algebraic form that can be applied in real-world situations

Geometry: Compare and contrast the concept of congruency with the concept of similarity: Identify geometric figures that are congruent (figures that have the same shape, size, measures, or are exact mirror images of each other); identify geometric figures that are similar (figures that have the same shape and proportions but not the same size, including mirror images); and compare. Understand and illustrate non-rigid transformations (alterations in position and/or size) including: dilation (proportional scaling, preserves ratios between distances) and shear mapping (displacement occurs along parallel lines). Understand and demonstrate rigid transformations (displacement that preserves size and shape) including translations (every point is displaced a constant distance in the same direction); reflections (mirror images, every point maps across a reversed line of symmetry), rotations (every point is displacement around a central axis). Verify experimentally the properties of rotations, reflections, and translations 8.G.A.1. Verify the properties of rigid transformations and non-rigid transformations relative to: lines and line segments 8.G.A.1.a, angles 8.G.A.1.b, parallel lines 8.G.A.1.c. Understand that two, twodimensional figures are congruent if one can be obtained from the other through a sequence of rotations, reflections, and translations. Using congruent polygons to demonstrate that congruency is independent of rigid transformation (a square remains a square even when it is turned on its corner although one may be call it a diamond) 8.G.A.2. Using coordinates, describe the effect of dilations, translations (slides), rotations (turns), and reflections (flips) on two-dimensional constructions 8.G.A.3. Understand that two, two-dimensional figures are similar if one can be obtained from the other through a sequence of rotations, reflections, translations, and dilations. Given two similar two-dimensional constructions, describe a sequence of transformations that exhibit their geometric similarity 8.G.A.4. Demonstrate that: one dimensional constructs (e.g., rays, geometric vectors, plane-of-reference coordinate points); two dimensional constructs (e.g., interface planes, sectional planes) and polyhedra (three-dimensional forms) that are congruent; remain congruent through all rigid three-dimensional (inclination, rotation, radiation) displacements. Use informal arguments to establish facts about the sum of an internal angle and its exterior angle, and the angle sum and exterior angle of triangles. Use informal arguments to establish the relationship between the number of sides of a polygon (regular and irregular) and the sum of its interior angles. Use informal arguments to establish the relationship between the number of sides of a polygon (regular and irregular) and the sum of its exterior angles. Use informal arguments to establish facts about the angles created when parallel lines are cut by a transversal line: including the similarity of opposite angles at each intersection, the sum of angles formed at each intersection, and relationships between each parallel lines and of angles formed by the transversal line. Use informal arguments to establish facts about the angle-angle criterion for similarity of triangles. 8.G.A.5. Understand and apply the Pythagorean Theorem. Understand the geometric relationships stated by the Pythagorean theorem relative to right triangles. Recall the Pythagorean equation ($a^2+b^2=h^2$) and solve for the each variable ($h=\sqrt{a^2+b^2}$, $a=\sqrt{h^2-b^2}$, $b=\sqrt{h^2-a^2}$). Recall and explain the "Pythagorean proof by rearrangement" and its converse (If the square of one side of a triangle is equal to the sum of the squares of the other two sides, then the triangle is a right triangle) 8.G.B.6. Recall the "Primitive Pythagorean Triple" (3, 4, 5) and use it, along with its multiples (6, 8, 10; 9, 12, 15) to solve real-world and hypothetical problems. Understand Pythagorean relationships relative to isosceles right triangles (45°, 90°, 45°; $1,\sqrt{2}$, 1) equilateral triangles, and 30-60 right triangles (1, 2, $\sqrt{3}$) and use this knowledge to solve word-problems. Use the Pythagorean Theorem to solve real-world problems in two and three dimensions (e.g., construct right angles, determine the side lengths of right triangles, determine the length of the hypotenuse, find elevations, etc.); and to find the distance between points on two-dimensional coordinate plane 8.G.B.7. Apply the Pythagorean Theorem to find the distance between two points in a coordinate system. Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres 8.G.B.8. Recall the volume formulas for prisms, pyramids (with polygonal and circular bases) and spheres; use these formulas to solve hypothetical and real-world problems 8.G.C.9. Use and understand the following geometry nomenclature: abscissa, ordinate, correspondence, function, dysfunction,

Statistics, Probability, Factorials, Permutations, and Combinations: Recall and understand, commonly used statistical nomenclature and concepts including: variable (bivariate, dependent, independent, confounding regression analysis, descriptive statistics; Associations between variables (clustering, outliers, positive, negative, linear and nonlinear) Construct and interpret scatter plots of bivariate data to expose patterns and/or associations (e.g., linear and nonlinear, positive or negative, clustering, outliers) if any 8.SP.A.1. Understand the concept of measurement error and the process of linear regression used to model relationships relative to scatter plots of bivariate data; visually search the displayed data for recognizable patterns 8.SP.A.2. For scatter plots that suggest a linear association, informally assess the data for closeness of fit to a straight line (draw a straight line dividing the distribution of points on the basis of density averages; scatter distance and quantity); And, write a slope-intercept equation representing the informally regressed line 8.SP.A.2. Use a linear equation (transformed into slope-intercept form) to model a bivariate data distribution. Make predictions and draw conclusions from simulated experiments 8.SP.A.3. Understand that patterns of association can also be seen in data using other types of displays such as frequencies tables, bar graphs, histograms, stem-and-leaf plots, correlation tables, and two-way tables. Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects. Use relative frequencies calculated for rows or columns to describe possible association between the two variables 8.SP.A.4.

Attachment E: Student's Typical Day

I walk down the street to school, which is just a few minutes away from our new house. I'm excited for school today. It's Friday, which means that we get to have our weekly discussion over current events in History class. I'm only in 5th grade, but I've can make the older kids admit defeat when I argue my points! It's pretty awesome.

First up is Comparative Literature. I eagerly grab my expert and get started. I want to use all of the allowed time—I have to write in complete sentences about Frankenstein, and sometimes I forget to check for silly things like periods. It's annoying, but my teacher doesn't let me get away with it. I grin as I write down "Victor is the real murderer!" My class is going to flip when we discuss Justine. My older classmate Emma loved Victor at the beginning of the story, and she's not happy that he's making such stupid decisions. I hand in my expert, and in a few minutes, we start discussion. I realize that I misunderstood something that I had read, so I'm glad that I was paying attention the entire hour. As I leave, I get my expert—I mastered! I mark my chart, and hurry to social studies class.

I take out my article, and sit silently, eager to get called on. I found an article that discusses last night's Republican Debate, and I can't wait to see what people think about what that guy Trump said. We get started, and it turns out that almost everyone has articles about the debate. I get caught up in the discussion—we can't believe that people running for president will argue this way. I always assumed that it was so boring and dull, but this stuff is so entertaining and dramatic! By the end of the hour, the class is divided over who will end up becoming the leading candidate for each party. I can't believe I have to wait so long to find out which of us is right!

Next is College Algebra. This class is so hard, but I like it because I get to brag that I'm doing college math when I'm in 5th grade. My mom says that she can't even do what I'm doing! I take my expert and I sit down. I look at the problems, start them, and get frustrated. I studied this last night—why are the equations not working for me this morning? Remembering what we talked about in last week's town hall meeting, I decide to try all of the problems, turn it in, and write up my question. I still think it's weird that, at this school, it's ok to make mistakes. At my old school, it was embarrassing if you didn't do well. By the end of the hour, I feel better—my teacher explained a strategy that made it easier to understand. I think that I'll master on Monday.

At lunch, I sit with my friends, and we talk about Science Olympiad. John's dad is coming after school to help us build our car! It's so awesome. I've never built something before.

My afternoon classes go ok—Chinese is fun because we have Chinese names in class, and we have to practice a new dialogue today. I feel silly, but at the end of the hour, I've managed to ask simple questions. Physical science is perfect, since we're learning about physics. I listen carefully, trying to see if anything we hear will help us perfect our car.

Finally, the day is over. The school director is in the hall, waving at us and talking to our parents. She sees me, and says, "I can't wait to see your car!" I grin, and tell her that our current plan is to make it blue with silver stripes. I rush as I see John's dad walking up to campus, a box of supplies in his arms. This is going to be such a great afternoon!

Attachment F: Teacher's Typical School Day

It's 7am. I enjoy getting to school early, so I can quietly prepare for the day. Teaching middle school English is no easy task—I have students as young as 5th graders taking upper level courses with some of my advanced eighth graders. I'm very excited though—my classes are excited and motivated to learn. I log into MARC to remind myself of which concepts need to be reviewed again during Need-to-Knows, and to make sure that none of my students are stagnating in their mastery rate. I'm glad that I checked: I didn't realize that Emma, one of my strongest students in Comparative Literature, hasn't mastered anything this week. I'll have to remind her to turn in her assignments; hopefully there's no bigger problem.

My Comparative Literature students rush into the room, grab the day's expert, immediately take their seats, and get started. I begin my usual pacing through the classroom, silently greeting the students with smiles. I motion for one boy, Daniel, to sit down—it looks like he is particularly energetic this morning, so I maintain frequent eye contact and physical proximity with him, as it helps him monitor his attention. The room is filled with frantic scribbling sounds, and 15 minutes later we're discussing Frankenstein. When I read aloud the content of question one ("Who was found guilty of William's murder, and who is truly responsible?"), a myriad of excited voices eagerly blurt out answers. Grinning at their excitement, I gesture by simply raise my hand, and they quickly stop talking over each other. For most students, the dark atmosphere of a Gothic novel is shocking their expectations of happy endings and morally upright characters. The next 40 minutes is a blur of excited literary discussion: How could Victor stand by and let her die? How did we know who was talking on that page? Does Victor actually be honest with himself? For the last 5 minutes, I allow for the class to carry out their debate, as I stand with my tablet, quickly entering the mastered experts into MARC. As the students leave, those with masteries quickly mark their incentive chart and then file it away, and those with retakes put them into their study folder.

Next I have Syntax. Students walk in, grab the expert that they need to take, and get started. As the students finish, they turn in their experts, put up their "Need to Know" questions on the white board, and then work on their writing assignment. I quickly grade, record, and hand back experts as the class finishes, and we move on to Need to Know. I smile, seeing that the students had accurately assessed their own needs today—their questions match what I saw on MARC. We discuss the questions, linking each concept to the course's bigger picture, and I prompt the class to also discuss study methods. They will struggle if they're taught content without being given the appropriate metacognitive tools needed to succeed.

The rest of the day proceeds quickly—lunch, classes, planning periods—and suddenly the day is over. A parent walks in, smiles, and asks her usual question, "How is John doing this week?" I give her the highlights, good and bad, and she leaves, satisfied that she knows what she can do to help him through his classwork. As I prepare to leave, the students outside are busy preparing their custom built cars for Science Olympiad, and they shout and wave goodbye as they work with their parents to cut and assemble various mechanical parts. I smile, happy to see that so many parents have gotten involved this year.

Staffing Chart

Use the appropriate table below to outline the staffing plan for the proposed school. Adjust or add functions and titles and add or delete rows as needed. Include the salary and full-time employee ("FTE") equivalency (e.g., 1.0 FTE, 0.5 FTE, etc.) for each position for each year.

Elementary School Staffing Model and Rollout

	Salary and FTE Per Position Per Year					
Title	Year 1 2017	Year 2 2018	Year 3 2019	Year 4 2020	Year 5 2021	Capacity 2021
School Director	\$111,068	\$112,623	114,199	\$115,799	\$117,420	\$117,420
Assistant School Director-Teacher in Charge (8% increase)	\$4,492	\$4,627	\$4,766	\$4,908	\$5,056	\$5,056
Add'l School Leadership Position 1 [SASA, School Administrative Student Assistant	\$36,468	\$37,980	\$39,492	\$41,064	\$42,684	\$42,684
Add'l School Leadership Position 2 [Registrar]	\$0	\$56,148	\$57,834	\$59,567	\$61,356	\$61,356
Classroom Teacher 1 (KG, 1st Grade)	\$56,148	\$57,834	\$59,567	\$61,356	\$63,196	\$63,196
Classroom Teacher 2 (KG, 1st , 2nd Graders)	\$56,148	\$57,834	\$59,567	\$61,356	\$63,196	\$63,196
Classroom Teacher 3 (2 nd , 3 ^{rd,} 4 th Graders)	\$56,148	\$57,834	\$59,567	\$61,356	\$63,196	\$63,196
Classroom Teacher 4 (3 rd , 4 th , 5 th Graders)	\$56,148	\$57,834	\$59,567	\$61,356	\$63,196	\$63,196
Classroom Teacher 5(5 ^{th,} 6 th Graders)	\$56,148	\$57,834	\$59,567	\$61,356	\$63,196	\$63,196
Specials: PE Teacher @0.25 FTE	\$14,037	\$14,458	\$14,892	\$15,339	\$15,799	\$15,799
Specials: Chinese Language Teacher / Intergovernmental Agreement)	\$0	\$0	\$0	\$0	\$0	\$0
Intervention Specialist: Mathematics-Title 1 Exp.	\$0	\$0	\$0	\$0	\$0	\$0
Intervention Specialist:ParaPro-Title 1 Exp.	\$0	\$0	\$0	\$0	\$0	\$0
SPED Teacher @0.5 FTE (DOE Exp.)	\$28,080	\$0	\$0	\$0	\$0	\$0
Teacher Aides and Assistants: Substitute Teacher @0.25 FTE	\$14,037	\$14,458	\$14,892	\$15,339	\$15,799	\$15,799
School Operations Support Staff (1 Janitor @1 FTE)	\$38,412	\$39,180	\$39,963	\$40,763	\$41,578	\$41,578
Total FTEs	9.0 FTE	9.5 FTE	9.5 FTE	9.5 FTE	9.5 FTE	9.5 FTE
Total Salaries	\$527,334	\$568,644	\$583,873	\$599,599	\$615,672	\$615,672

Middle School Staffing Model and Rollout

	Salary and FTE Per Position Per Year					
Title	Year 1 2017	Year 2 2018	Year 3 2019	Year 4 2020	Year 5 2021	Capacity 2021
School Director						
Assistant School Director						
Add'l School Leadership Position 1 [specify]						
Add'l School Leadership Position 2 [specify]						
Add'l School Leadership Position 3 [specify]						
Classroom Teacher (Social Science)	\$56,148	\$57,834	\$59,567	\$61,356	\$63,196	\$63,196
Classroom Teacher (Language Arts)	\$56,148	\$57,834	\$59,567	\$61,356	\$63,196	\$63,196
Classroom Teacher (Science)	\$56,148	\$57,834	\$59,567	\$61,356	\$63,196	\$63,196
Classroom Teacher (Mathematics and	\$56,148	\$57,834	\$59,567	\$61,356	\$63,196	\$63,196
Computer Technology)						
Classroom Teacher (Chinese Language)						
Classroom Teachers (Specials)						
Student Support Position 1						
[specify: e.g., Social Worker]						
Student Support Position 2 [specify]						
Specialized School Staff 1 [specify]						
Specialized School Staff 2 [specify]						
Teacher Aides and Assistants						
School Operations Support Staff						
Total FTEs	4.0 FTE	4.0 FTE	4.0 FTE	4.0 FTE	4.0 FTE	4.0 FTE
Total Salaries	\$224,592	\$231,336	\$238,268	\$245,424	\$252,784	\$252,784

Measure of Educator Effectiveness

Form "A" General Instructions Student Baselines / Student Learning Objectives / Targeted Students

Background: In all content subjects ALL utilizes formative, criterion referenced, proprietary instructional materials including a Physical Science Series, Syntax and Semantics Series, Numeric Operations Series, among others. Each series contains "Expert Trials" (mastery power-exams) and "Challenge Trials" (application assessments) that are sequentially numbered and administered at a high frequency in a proctored setting. These evaluation instruments are fine grained (they assess student content knowledge and skills in high detail, that is, they are not sampling instruments) and facilitate continuous feedback loops with many opportunities for instructors to modify their instructional practices based on data driven decisions relative to student progress (individual and group) towards individualized performance goals (student learning objectives, SLO). Additionally, for each content subject, summative exams are proctored at regular intervals throughout the year, including an end-of-year summative exam (S-Exam.) Students may progress at varying rates but each student in each classroom is assigned an individualized growth goal in each content area (yearly growth, class-wide subject SLO CS-SLO). Each student's progress towards this goal is recorded daily. In most cases, it takes several years for a student to complete a series. At the beginning of each year, each student begins on the "number" in each series, s/he finished the year before (the current year, subject baseline, S-Baseline). Students are selected for inclusion in a classroom primarily on the basis of these "academic level" numbers without excessive regard for age or grade so as to reduce the academic variation within each class. Due ALL's unique, display based record keeping system, any student's "level" and/or progress as well as the classroom as a whole can be quickly determined. "Expert" and "Challenge" (jointly referred to as "Trials") numbers are correlated to, and predictive of, performance on end of the year standardized exams (student performance expectations for a specific grade level, the normal grade level benchmark, NGL benchmark). Because students are selected for membership in classrooms based on academic level and performance, not grade or age, all K-8 classrooms contain students of various ages and grades but with reduced academic spread. Data collected on Form "A" is used to evaluate each teacher across all core subjects they teach. In addition, all students assigned to each teacher, are included in that teacher's evaluation.

Form "A" / Each instructor shall complete one Form A for each subject area taught in accordance to the following guidelines.

- A. S-Baseline: The Subject-Baseline represents where each student finished (level of academic achievement) the year before (or the end of the instructional period) in the content subject under consideration. The S-Baseline must be based on objective and reliable data. S-Baselines are determined once each year and are used as a starting point to evaluate: each student's yearly growth as well as incremental progress toward individualized goals, student grades, and teacher effectiveness. The S-Baseline shall be established using one of the following:
 - Content Series Baselines: The highest "Trial" number achieved by a specific student in the subject at the end of the prior year becomes the next year's baseline and starting point.
 - **Deferred Baselines**: For classrooms in which all students begin a series on the same trial (Expert and/or Challenge) number, determination of a baseline is deferred until the middle of the first quarter. The baseline then becomes the highest "Trial" number achieved at that point in time.
 - Placement-exam Baseline: For classrooms in which the majority of students have progressed through a series and are on divergent "trial" numbers, baselines for new students are determined by administering a school provided placement exam.
 - a. Elementary School Subjects
 - 1. Mathematics
 - i. Numeric Operations
 - ii. Intermediate Algebra
 - 2. English Language Arts
 - i. Penmanship
 - ii. Dictated Spelling
 - iii. Lexicon
 - iv. Syntax & Semantics (Language Series)
 - v. Expository Composition
 - vi. Oration
 - 3. Reading / Reading Comprehension / Cross Content Reading
 - 4. Writing: Cross Content
 - Science:
 - i. General Science
 - ii. Physical Science
 - iii. Anatomy & Physiology
 - iv. Physical Geography / Earth Science
 - 6. Social Science
 - i. Political Geography
 - ii. US History
 - iii. World History
 - 7. Foreign Language and Culture
 - 8. Visual Arts
 - b. Secondary School Subject categories (6,7,8)
 - 1. Mathematics
 - 2. English Language Arts
 - 3. Science:
 - 4. Social Science
 - 5. Foreign Language and Culture
 - 6. Fine Arts

- c. Special Education & Instructional Intervention Specialists' Classrooms
 - 1. The entire population of students assigned to any one specialist teacher is treated as that specialist's "virtual" classrooms. For the purposes of Form "A" each Specialist shall have two classrooms, one comprised of students whose regular classroom is in the elementary school and the other comprised of students whose regular classrooms are in the secondary school. This shall be done regardless of student load, student grade, age, or disability.
 - Each specialist teacher shall complete a separate "Form A" for each subject listed in Ab1-4 above for both their Virtual Elementary and Virtual Secondary classrooms.
 - 3. The S-Baseline "Trial" number for each student shall be the same as assigned by the regular classroom teacher.
- B. SB-Rank: The Subject Baseline Rank represents each student's baseline rank in a given subject relative to each other student's in the current classroom.
 - a. Elementary Classrooms: Each student's S-Baseline ranking shall be determined for the given subject relative to the student's current classroom by ranking the baseline numbers for each student in descending order and assigning the appropriate "rank" number to each student. (The student with the highest trial number is ranked "1". The lowest ranked, equals the total number of baseline scores in that subject within the classroom. Neither grade nor age shall be considered.) NOTE: Because students will be listed in rank-order based on their average rank for all subjects (ASB-Rank) and not based on the single subject rank (SB-Rank), ranking scores in this column will not be sequentially ordered.
 - Secondary Classrooms: The S-Baseline numbers for all students studying the subject in the current classroom shall be ranked in descending order and the appropriate "rank" number assigned to each student (the student with the highest trial number is ranked "1", the lowest ranked, equals the total number of in the classroom or period. Neither grade nor age shall be considered.) In single subject secondary classrooms, this column shall be sequentially ordered with the highest performing student at the top.
 - Special Education & Instructional Intervention Specialists' Classrooms:
 - 1. The SB-Rank shall be expressed as a common fraction with a numerator and denominator
 - 2. The numerator shall be the SB-Rank assigned by the regular classroom teacher for this subject.
 - 3. The denominator shall be the total number of students studying this subject in the regular teacher's classroom.
 - 4. Note: Because these are mixed rankings, several may cluster and the group as a whole may not demonstrate the full range of ranking possible.
 - Because students listed on this form will be rank-order based on the average rank of each student across all subjects (ASB-Rank) the single subject rank numbers (SB-Rank) in this column will not be ordered.
- C. SB-Quotient: The Subject Baseline Quotient represents each student's baseline performance in a given subject relative to all other students in the current classroom. Because all students in a single classroom may not all be working on the same series in a content area, resulting in a different "N" for each content subject, "quotients" will be used to find each student's average rank across all subjects (ASB-Quotient.)
 - Elementary: The SB-Quotient is calculated by dividing the SB-Rank by the total number of students studying that subject in that classroom and subtracting that number from one. The SB-Quotient is calculated for each student for each subject and recorded on the appropriated Form "A"
 - Secondary: The SB-Quotient shall be calculated by dividing the SB-Rank by the total number of ranked students in the period or class and subtracting that number from one. SB-Rank
 - Special Education & Instructional Intervention Specialists:
 - 1. Elementary: For students in the Specialist's Virtual Elementary Classroom, the SB-Rank shall be the same as the regular classroom teachers.

ranked S

- Secondary: For students in the Specialist's Virtual Secondary Classroom, the SB-Rank shall be the same as the regular classroom teachers.
- D. ASB-Quotient: The Average Subject Baseline Quotient represents each student's rank averaged across all subjects, relative classmates in the current classroom.
 - Elementary: Each student's SB-Quotients for all subjects studied by that student shall be added together and then divided by the number of quotients added, to produce the student's average quotient across all subjects (ASB-Quotient). SB-Quotient
 - Secondary: Column left blank (single subject classrooms are not averaged on Form "A")

= ASB-Quotient # Quotients c. Special Education & Instructional Intervention Specialists

- - 1. Elementary: The ASB- Quotient shall be the same as assigned by the regular classroom teacher. Note: These quotients represent relative performance in the regular classroom for each student in the Specialists virtual classroom.
 - Secondary: For students in the Specialist's secondary classroom, the SB-Ranking number from each of a student's periods or classes shall be added together and then divided by the number of items added, to produce that student's average quotient across all subjects (ASB-Quotient).
- E. ASB-Rank: The Average Subject Baseline Rank represents each student's baseline rank averaged across all relevant subjects relative to students in the current classroom.
 - Elementary: Each student's ASB-Quotient shall be ranked in descending ordered and assigned the appropriate "rank" number (ASB-Rank) (i.e., the student with the highest ASB-Quotient is ranked "1". The lowest rank equals the total number of students in the classroom. Neither grade nor age shall be considered.
 - b. Secondary: For each single subject regular secondary school classroom, the ASB-Rank column should be disregarded although the rank-ordered ASB-Rank column will match the SB-Rank column.
 - Special Education & Instructional Intervention Specialists:
 - Elementary: The SB-Quotient shall be used to produce a rank-order (ASB-Rank) of students that comprise the Specialist's classroom. Note: The ASB-Rank represent a student's rank in the Specialist's classroom relative to each student's rank in the regular teacher's classroom averaged across all relevant content subjects.

- Secondary: Each student's ASB-Quotient shall be ranked in descending ordered and assigned the appropriate "rank" number (ASB-Rank) (i.e., the student with the highest ASB-Quotient number is ranked "1". The lowest ranked number equals the total number of baseline scores within the classroom.
- F. Preparedness: The rank-ordered list of students shall be divided into three equal groups and tentatively identified as high, adequate, and low (preliminary list of Targeted Students). After the Targeted populations of students are identified and any additional students are moved from the high or adequate groups into the "targeted groups" the three groups remain unaltered for the remainder of the academic year regardless of student performance.
 - a. Elementary: The rank-ordered (ASB-Rank) list of students shall be divided into three equal groups.
 - 1. The first group in the list of students shall be tentatively identified as "High"
 - 2. The second group in the list of students shall be tentatively identified as "Adept"
 - 3. The third group in the list of students shall be tentatively be identified as "targeted"
 - b. Secondary: The rank-ordered (SB-Rank) list of students shall be divided into three equal groups.
 - 1. The first group in the list of students shall be tentatively identified as "High"
 - 2. The second group in the list of students shall be tentatively identified as "Adequate"
 - 3. The third group in the list of students shall be tentatively identified as "Targeted"
 - c. Special Education & Instructional Intervention Specialists:
 - 1. Elementary & Secondary Virtual Classrooms: The ASB-Rank ordered lists of students produced for the Specialists classrooms shall be divided into three equal groups.
 - i. The first group in the list of students shall be tentatively identified as "High"
 - ii. The second group in the list of students shall be tentatively identified as "Adequate"
 - iii. The third group in the list of students shall be tentatively identified as "Targeted"
- G. Targeted: Targeted Students in each classroom: Identifies groups of students who display the lowest performance and who warrant intensive intervention. After Targeted populations of students are identified and any additional students are moved from the high or adequate groups into the "targeted groups" targeted groups remain unaltered for the remainder of the academic year regardless of student performance.
 - a. Elementary & Secondary Students in regular education classrooms: Students who are not already in the targeted groups but scored "FFB" or "A" in any content area on the prior year AMO shall be moved from the high or adequate groups into targeted groups.
 - b. Special Education & Instructional Intervention Specialists / Elementary & Secondary Virtual classrooms: Students who are not already in the targeted groups but scored "FFB" or "A" in any content area on the prior year AMO shall be moved from the high or adequate groups into targeted groups.
- H. Grade Level: Student's grade level
- I. Grade Equivalent Benchmarks / Normal Grade Level Equivalent (NGL-Benchmark) by Subject: The NGL provides benchmarks in Accelerated Learning Laboratory's instructional materials that are predictive of student performance on the AMO. Subject areas tested by AMO's are aligned with a "Trial" number in the appropriate subject series relevant to grade. The NGL-Benchmark shall be taken from the chart supplied by the administration.
- J. Classroom-wide Student Learning Objectives by Subject (CS-SLO): Provides reasonable-but-rigorous individualized academic goals for all students in all relevant subject areas. To determine the C-SLO in each subject, the number of contact weeks shall be multiplied by 2 and this product shall be added to each student's baseline numbers for each subject.
- K. Year End Classroom-wide Subject Student Learning Objectives (Y-end CS- SLO): Indicates the degree to which the teacher meets or approaches his/her goal for each student in the relevant subject. For meeting 100-90% of the goal enter a "4", 89-80% "3", 79-70% "2", 69-60% "1".
- L. Year End Classroom-wide Subject Average Student Learning Objectives (Y-end CSA- SLO): Indicates the degree to which the teacher meets or approaches his/her goal for each student averaged across relevant subjects. For meeting 100-90% of the goal enter a "4", 89-80% "3", 79-70% "2", 69-60% "1".
- M. Targeted Student Learning Objectives by Subject (T-SLO): For each targeted student, his/her Grade Equivalent Benchmark and C-SLO shall be determined for each relevant subject including the number of trials for each. The larger of the two numbers shall be multiplied by .8 to arrive at the students T-SLO for each subject. T-SLO's are calculated for only Targeted Students.
- N. Year End Targeted Student Learning Objectives by Subject (Y-end T-SLO-S): Indicates the degree to which the teacher meets or approaches his/her goal for each targeted student in the relevant subject. For meeting 100-90% of the goal enter a "4", 89-80% "3", 79-70% "2", 69-60% "1", calculated for only Targeted Students.
- O. Year End Targeted Student Learning Objectives Averaged across all Subjects (Y-end T-SLO-AS): Indicates the degree to which the teacher meets or approaches his/her goals for each targeted student averaged across all subjects. For meeting 100-90% of the goal enter a "4", 89-80% "3", 79-70% "2", 69-60% "1", calculated for only Targeted Students.



Measuring of Educator Effectiveness: Principal

Baselines by Classroom and Subject / Classroom Wide SLO Goals by Subject / Targeted Students / Target SLO's for Targeted Students

Ir	struction	nal Se	ries /	Class	s Title	e / Su	bject										
Re	vision nu	ımber	:				Sped / Intervention classroom Ele	ment	ary		Se	cond	ary				
Name:					Signature: Date:												
Ev	aluator l	Name	:				Evaluator Signature: Date:										
Teacher identified an appropriate S-Baseline for each student. Teacher has <u>NOT</u> identified appropriate S-Baselines for each student.								ıdent.									
Teacher identified an appropriate CS-SLO for each student. Teacher has <u>NOT</u> selected an appropriate CS-SLO for each student.																	
	Teacher	approp	oriatel	y ider	ntified	l targe	ted students. Teacher has <u>NOT</u> appropriately i	ately identified targeted students.									
							LO for each targeted student Teacher has NOT identified an a		riate	T-S		r each				ıt.	
	F	Α	В	С	D	Е		Н	l	J	K	L	М	N	0	_	
	Preparedness	S-Baseline	SB- Rank	SB-Rank Quotient	ASB- Quotient	ASBRank	Student ID	grade level	NGL Benchmark	OTS-SO	Y-end CS-SLO	Y-end CSA-SLO	1-SLO	Y- end T-SLO-S	Y- end T-SLO-AS	Y-End Subject Exam	
	High					1											
						2											
						3											
						5											
						6											
						7											
						8											
_	dequate					9											
Λ	acquate					11											
						12											
						13											
						14											
						15											
						16 17											
						18											
	G					19											
Т	argeted					20											
S	tudents					21											
						22											
						23											
						24											
						25 26											
						27											
90	-100% met	their in	4 ndividi	ualized	l SLO		3 2 0-89% met their individualized SLO 60-79% met their individualized Sl	LO	I	ess th	an 60°	% met	1 indiv	idualiz	zed SL	.О	
	of targeted						Classroom wide % of students meeting CSA-SLO										



Measure of Educator Effectiveness: Principal Evaluation

ALLMEE

Principal Project Developer or Designee: Perception Inventory

Accelerated Learning Laboratory Measure of Educator Effectiveness (ALLMEE) was inspired and guided by components of the MET Project, ISLLC Standards, Tripod Project, The Charlotte Danielson Framework, and AMEE (ALL-Tucson). ALLMEE was created to provide a manageable system comprised of meaningful measures of educator (instructor, teacher, administrator, and leadership) effectiveness that could be embedded in ALL's integrated educational system and that could evolve and improve with the "whole" system over time. ALLMEE consists of three weighted components for measuring leadership effectiveness: Performance 25%, Student Academic Progress 50% Perception Survey Instruments 25%

Overall Performance Rubric for Educational Leader Effectiveness: Principal

Highly effective: Consistently demonstrates highest level of expertise and effectiveness across a broad range of pedagogical, societal, and leadership domains. Consistently completes responsibilities professionally at high levels of competence. Exceeds all objectives, goals and targets for student performance. Survey data indicate the highest levels of satisfaction. The educational leader is well respected by all community groups, an indispensable asset, and provides crucial, charismatic leadership. Compelling evidence is required for a ranking of Highly Effective.

Effective: Consistently demonstrates high levels of expertise and effectiveness across a range of pedagogical, societal, and leadership domains. Completes responsibilities professionally and competently. Meets or exceeds objectives, goals and targets for student performance. Survey data indicate high levels of satisfaction. Although a few areas may require minor improvement the educational leader is respected by most community groups, a valuable asset, and provides substantial leadership. Convincing evidence is required for a ranking of Effective.

Developing: Demonstrates moderate to high levels of expertise and effectiveness. Completes most responsibilities professionally and competently. Meets objectives, goals and targets for student performance. Survey data indicate moderate levels of satisfaction. Although several areas may require improvement the educational leader is respected by many community groups, a promising asset, and provides meaningful leadership.

Ineffective: Demonstrates moderate to low levels of expertise and effectiveness. Intermittently completes responsibilities professionally and competently. Meets or approaches many objectives, goals, and targets for student performance. Survey data indicate moderate to low levels of satisfaction. Many areas require significant improvement. The educational leader is respected by some to few community groups, viewed as a liability, and is unable to achieve consensus through leadership. Convincing evidence is required for a rating of Ineffective.

- 1. Substantially Exceeds Expectations 4. Exceeds Expectations 3. Meets Expectation 4. Does Not Meet Expectations
- I. EDUCATIONAL LEADERSHIP Understands, shares, promotes ALL's Mission and Vision.

A. Leadership: Demonstrates deep comprehension and knowledge of the schools Mission and Vision.
Strong evidence that ALL's Mission and Vision are shared among all stakeholders including staff.
Evidence that decisions are guided and defined by <i>ALL</i> 's Mission and Vision.
Effectively communicates <i>ALL</i> 's core beliefs and values to students, staff, and community.
Strategically implements ALL's Mission and Vision.
Successfully employs consensus building, mediation, and diplomacy strategies.
Demonstrates deep understanding of <i>ALL</i> 's "Systems Engineered Multi-push Design" and implements design elements with fidelity.
Evidence of work-ethic required to reach high levels of organizational performance and ambitious student learning outcome goals.
B. Curriculum and Instruction: Ensure that ALL's curriculum is taught and students are evaluated with high scholarly integrity.
Ensures that teachers and instructors employ prescribed pedagogy and student support.
Ensures that instructors follow the curricular alignment with state standards as prescribed.
Ensures that exceptional needs children are provided with the appropriate level of instruction and resources as prescribed by their IEP.
Ensures that gifted, talented, and advanced students are have unrestricted access to the appropriate level of instruction and resources.

C. Instruction Effectiveness– Facilitate instructional practices leading to high student performance.
Ensures equal access to all students regardless of ethnicity, cultural identity, social status, economic privilege, or gender.
Ensures that student are placed at their challenge level but below their failure level.
Demonstrates time-management skills; giving priority to instructional leadership.
Provides for targeted professional development designed to improve teacher effectiveness – guided by MARC output reports.
Intervenes when MARC identifies lower than expected performance (flags) or concerns are otherwise identified.
Intervenes in a positive, constructive, supportive demeanor with the goal of resolving the concern
Provides teacher or instruction with hardcopy documentation of specific interventions and documents within the MARC environment in the prescribed format.
Maintains professional knowledge of current developments in research concerning learning and teaching.
D. Assessment, Evaluation, and Continuous Improvement / Results Oriented: Demonstrates commitment to using data to inform educational decisions.
Ensures that new students ZPD is assessed and placed in the appropriate class and at the appropriate levels in all subject areas.
Monitors teacher effectiveness in real-time (daily) class—wide, school wide and across demographic and ability groupings.
Monitors student progress towards individualized goals daily, using real-time classroom data.
Ensures that data from state assessments is uploaded into the MARC environment and used to inform formative instructional decisions.
Utilizes classroom student progress data consolidated and cross correlated across relevant factors to inform weekly in-service training topic.
Ensures that rigorous but reasonable growth goals are established for each student, each classroom, and the school as a whole as early as possible.
Encourages the expectation and goal of continuous, steady improvement fueled by effort and commitment.
Ensures that instructors and teachers maintain accurate and current records in the prescribed format.
II. ORGANIZATIONAL LEADERSHIP – Maintains a culture of high academic standards.
A. Climate: Demonstrates commitment to high performance expectations for student, teachers and the school.

	Ensures and promotes an orderly learner centered and knowledge centered environment.
accomplish	Establishes and promotes a motivational structure that provides incentives for genuine academic nent as measured by growth.
accompnism	Encourages a culture in which students are actively involved in classroom management and
governance a	· · · · · · · · · · · · · · · · · · ·
educators is	Promotes a school wide metacognitive culture where strategic planning, by students and common place.
	Encourages a school wide culture of high academic expectation and enthusiasm for knowledge.
	Promotes a school wide culture of civility, social responsibility, and respect for individual dignity.
	Promotes a school wide culture that respects the contributions of all cultures.
B. Empower	rment – Finds opportunities to encourage stakeholder involvement.
in school im	Ensures that students, parents, teachers, instructors, and school community members are involved provement efforts.
	Involves stakeholders in decision making that involves the school.
	Shares responsibility for students' academic outcomes, both positive and negative.
school paren	Encourages parent involvement with their child education and the school through activities, the organization, and teacher and personal interaction.
	Solicits and acknowledges parent and community member contributions.
efforts to im	Ensures that students, parents, teachers, instructors, and the school community are involved prove the school.
C. Commun	ications:
	Ensures that there is an open dialogue between all stakeholders.
	Effectively communicates individual and group progress towards goals to all stakeholders.
about school	Ensures that the parents, students, and the appropriate individuals and organizations are informed functions in a timely manner.
individuals o	Maintains professional knowledge of current circumstances and informs the appropriate or organizations.
III. ETHICA	AL LEADERSHIP:
	Supports the belief that the purpose of schooling is to facilitate learning.
	Maintains a safe, nurturing risk-free environment
	Demonstrates commitment to a personal and professional code of ethics.
	Accepts responsibility for school outcomes.
	Ensures that policies and procedures are enforced equitably

 _ Ensures that the Parent-Student Policy handbook is distributed every year.
 Applies rules and procedures fairly, wisely, and considerately.

Accelerated Learning Laboratory Measure of Educator Effectiveness Overview

Accelerated Learning Laboratory Measure of Educator Effectiveness (ALLMEE) was inspired and guided by components of the MET Project, ISLLC Standards, Tripod Project, The Charlotte Danielson Framework, and AMEE (ALL-Tucson) ALLMEE was created to provide a manageable system comprised of meaningful measures of educator (instructor, teacher, administrator, and leadership) effectiveness that could be embedded in ALL's integrated educational system and that could evolve and improve with the "whole" system over time ALLMEE consists of three weighted components for measuring educator effectiveness: 1 Teaching Performance 50% (60 of 120 points) 2 Student Academic Progress 33% (40 of 120 points) 3 Survey Instruments (parent, student, peer, Self-reflection) 17% (20 of 120 points)

Overall Performance Classifications for Educator Effectiveness

1. Highly effective

Teacher consistently demonstrates teaching effectiveness above stated expectations, exceeds all objectives, goals and targets for student performance, survey data indicate very high levels of satisfaction Top performer in all areas including student achievement Convincing evidence is required for rating a teacher as Highly Effective

Effective

Teacher consistently demonstrates teaching effectiveness at or above stated expectations, meets or exceeds all objectives, goals and targets for student performance, survey data indicates high levels of satisfaction Very good performer in all areas including student achievement. While there may be some areas that require minor development the teacher is a highly valued educator. Strong evidence is required for rating a teacher as Effective

3. Developing

Teacher consistently demonstrates reasonable teaching effectiveness at stated expectations, meets most goals established for student performance, survey data indicate moderate levels of satisfaction Adequate to good performer in all areas including student achievement While there are areas that require further development the teacher is a valued educator with promise

Ineffective

Teacher rarely demonstrates teaching effectiveness at reasonable expectations, meets few goals established for student performance, survey data indicate low levels of satisfaction Unsatisfactory performer in most areas including student achievement Significant improvement is required in most areas Convincing evidence and high specificity is required for rating a teacher as Ineffective

Teaching Performance

50% (60 points)

Teaching Performance Evaluations utilizes four domains based on a constructivist view of learning and teaching, including; 1) Planning and Preparation, 2) Classroom Environment, 3) Instruction, 4) Professional Responsibilities The degree to which a teacher meets the criteria in each domain is determined by the evaluator, evidence, and the information collected

Rubric Domains define performance criteria for specific subdomains and provide four Teaching Performance classifications: 1) Unsatisfactory 2) Basic 3) Proficient 4) Distinguished

1. Planning and Preparation

a. Content Knowledge:

Knowledge of content & concepts in the subject discipline; Ability to generalize learning to concepts within the discipline and to knowledge structures external to the subject discipline; Knowledge and use of effective pedagogy specific to discipline; Understanding of perquisite skills and knowledge required for student success; Anticipation of student misconceptions

b. Knowledge of Students

Knowledge of students' levels of development and background, culture, skill, language proficiency, interest, and special needs, as a group and as individuals

c. Setting / Instructional Objectives

Learning objectives within the discipline are rigorous, worthwhile, and require effort to achieve Goals and expectations are clear and easily accessible to all students Assessments are fair, valid, reliable, and measure meaningful learning Target objectives account for individual student needs

d. Knowledge of Resources

Knowledge of resources eg, texts, colleges, self created, internet, learning groups, guest speakers, field experiences,

e. Coherent Instruction

Student engagement and arousal is skillfully enhanced Lesson displays in-depth coverage, feedback loops, sufficient content density with differential instruction across ability levels, clear knowledge scaffolds, a clear constructed knowledge sequence, and simultaneous instruction across varying levels of student knowledge, rigorous but realistic objectives, content review with elaboration, and builds new knowledge on previously learned concepts Teacher actively teaches metacognitive skills and student choice/control develops metacognitive awareness

f. Student Assessments

Aligned with instructional outcomes, clear criteria that show evidence of learning, individualized, formative, teacher uses assessment results to plan future instruction

Student Level Data **Student Academic Progress**

33% (40 of 120 points)

Provides multiple measures of student academic performance. Rating Tables supply point allocations.

Achievement (1-16 points)

- a. AMO Data
- Other Valid and Reliable b. Measures
- Growth 20% (24 of 120 points)
 - Class-wide Student Learning Objectives (SLO)
 - Targeted SLOs b.
- College and Career Ready (1-16 points)

Rating Table Example / Grades 4-6 / Evaluator and

Category	value	Data	value	Source		
		% pass AMO Reading	2	Prior Y		
Achievement	8	% pass AMO Math	2	Prior Y		
		Class SLO	4	Prior Y		
	,	Target SLO	8	Current Y		
		S Growth target Reading	4	Prior Y		
Growth	24	S Growth Target Math	4	Prior Y		
	Mean SGP reading & 8 math	8	Prior Y			
Career &	8	AMO CCR equiv Reading	4	Prior Y		
College Ready	0	AMO CCR equiv Math	4	Prior Y		

teacher select appropriate table during conference Cotogory Point Classroom point Data

	% pass AMO Reading	2	Prior Y			
8	% pass AMO Math	2	Prior Y			
	Class SLO	4	Current Y			
	Target SLO	8	Current Y			
	S Growth target Reading	4	Prior Y			
24	S Growth Target Math	4	Prior Y			
	Mean SGP reading & math	8	Prior Y			
0	AMO CCR equiv Reading	4	Prior Y			
0	AMO CCR equiv Math	4	Prior Y Prior Y			
		Reading 8 % pass AMO Math Class SLO Target SLO S Growth target Reading S Growth Target Math Mean SGP reading & math AMO CCR equiv Reading AMO CCR	Reading 2			

2. Classroom Environment

a. Respect and rapport

Interactions are respectful, sensitivity to students as individuals, high levels of civility among all members of the class

b. Culture for Learning

Classroom culture is cognitively vibrant, shared belief in the importance of learning, teacher conveys high expectations for all students and insists on hard work, student assumes responsibility, students engage in peer tutoring

c. Managing Classroom Procedures

Maximized instructional time, efficient classroom routines, students contribute to the function of classroom routines routines understood and initiated by students, short transitions, efficient handling of materials and supplies, no student is waiting or idle at any time for any reason

d. Managing Student Behavior

Student behavior is appropriate, students take an active role in self-monitoring their own behavior and that of other students teacher's monitoring of student behavior is subtle and preventative, teachers response to student misbehavior is consequence based and non-punitive, there is an ambiance of mutual respect between students and between teacher and students

e. Organization of Physical Space

Survey Instruments

17% (20 of 120 points)

Survey Inventories are used to inform professional development recommendations for each teacher Review of data may be used to set school, district, or classroom goals

1. Parent Perception Inventory

Solicit information from parents on the quality of teacher and school Administered anonymously on-line

2. Student Perception Inventory

Provide opportunity for students to rate teachers on teaching skill, subjective learning, student engagement, and academic rigor All 3-8 teachers, including SPED teachers Administered anonymously on-line

3. Peer Perception Inventory

Each teacher is assigned a minimum of three peer reviewers: Two are chosen by the principal and one is selected by the teacher being evaluated Administered anonymously on-line

4. Self-reflection Instrument / Teacher Self-Review

Completed by the teacher prior to, and after each Formal Observations and reviewed at appropriate teacher-evaluator conferences Teacher reflects on each of the four domains, prior year student academic progress data, and survey data For completion, one point is awarded in the final summative

Parent Survey Questions / Perception Inventory

The staff at my child's school is respectful and caring

My child is safe at school

My child's school has high academic expectations for my child

My child's school prepares my child to be on track for college or a career

My child's teacher inform me of my child's progress

My child likes going to school

My child's school values my opinion

My child is involved with the school community

ABCDF

What overall grade would you give your child's teacher(s)?

What overall grade would you give the school administrator(s)?

What overall grade would you give the quality of education that your child is receiving?

What overall grade would you give your child's school?

Student Survey Questions 3-5 / Perception Inventory

The schoolwork we do helps me learn

The schoolwork we do is interesting

What I learn in this class is useful to me

I am not bored in this class

In this class, we learn a lot almost every day

My teacher makes sure that we think about the things we read and write

When the work is hard, my teacher encourages me to keep trying In this class, it is more important to understand the than to memorize

My teacher uses many different ways to explain things

My teacher knows when we understand the lesson and when we do not Our classroom materials have their own place and things are easy to find

My teacher tells us what we are learning and why

My teacher wants us to share what we think

In this class, students feel comfortable about sharing their own ideas

My teacher talks to me about my work to help me understand my mistakes

My teacher writes notes on my work that help me do better next time

My teacher builds on things we learned in other classes, subjects, and years

My teacher cares about me

If I am sad or angry, my teacher helps me feel better

My teacher would notice if something was bothering me

We do not waste time in this class

Students in my class are respectful to our teacher

My classmates behave the way my teacher wants them to behave

The kids in my class know what they are supposed to be doing and learning Students behave in this class which makes the teacher happy

Classroom is safe, learning is accessible to all students including those with special needs, teacher makes effective use of The people we learn and read about in this class are like me physical resources including computer technology, physical arrangement is appropriate to learning activities, students My teacher teaches us to respect people's differences contribute to use or adaptation of physical environment

3. Instruction

a. Communicating with Students

Teacher links instructional purpose of the lesson to student interests, directions are clear and anticipate student misunderstanding, teacher's explanation of content is through and clear, teacher uses cognitive maps - scaffolding - and I feel like I can ask for help when I need it connects new learning to earlier lessons and knowledge, content is meaningful to students interest - students demonstrate I feel like I do a good job in this class interest and passion for content, teacher demonstrates passion for content, students are engaged with each other and with the teacher, teacher and students stay on topic, teacher finds opportunities to extend students' vocabulary

b. Using Questioning / Prompts / Discussion

Teacher uses a variety of questioning techniques to cognitively challenge and engage students, teacher engages every student through high frequency of questions, there is a high level of thinking and sophisticated discourse, teacher promotes metacognitive skills, student formulate many questions, students initiate questioning and make unsolicited contributions, students ensure that all voices are heard in the discussion

c. Engaging Students in Learning

All students are intellectually engaged in challenging content. There is evidence of student initiated inquiry and student contributions to important content. Pacing of the lesson provides students with required time to intellectually engage with and reflect upon their learning. There is evidence that students consolidate their current learning with previous learning Students display metacognitive choice in task completion There is evidence that students serve as resources for one another

d. Using Assessment in Instruction

Formative assessments are fully integrated into instruction Students display metacognitive skills including self-monitoring their progress, and self-assessing the depth and breath of their knowledge and sufficiency of their understanding Continuous Formative feedback-loops are visible including: verbal and nonverbal, prompting and priming, and written assessments Assessment accurately and reliably identifies areas of strengths and weaknesses, is accurate, specific, and advances learning Assessment is individualized

e. Demonstrating Flexibility and Responsiveness

Teacher takes advantage of "teachable moments" that unexpectedly occur Teacher spontaneously adjusts instructional level or pacing relative to the learners' level of understanding Teacher addresses individual student's needs, misunderstandings or interests at the time they become apparent Teacher seeks to learn / acquire effective instructional strategies and solicits help to increase skill Teacher displays a broad range of appropriate instructional strategies and skills

4. Professional Responsibilities

a. Reflecting on Teaching

Teacher objectively and accurately self-assess lesson effectiveness and the extent to which it achieved its instructional objectives Teacher cites specific examples of the lesson's strengths and weakness, and offers realistic ways in which the lesson might be improved

b. Maintaining Accurate Records

Teacher collects and maintains detailed and accurate data and maintains portfolios that reflect meaningful progress each student is making towards the defined academic goals; Including but not limited to: completion of assignments, outcomes of In this class, I feel like I fit in exams, Expert Trials, Challenges, and homework Students participate in maintaining and accumulating this data Data is I feel like an important part of this classroom community organized such that the teacher can quickly assess individual and group progress and students can assess their own progress in real time Students, teacher, and parents must be able to easily access this data without interference Data is collected in My teacher knows what is important to me every subject every day and is finegrained Teacher maintains confidentiality of appropriate data Data is organized such that School work in this class is challenging but not too difficult it informs modifications in instructional practices for both individuals and the whole group

c. Communicating with Families

Teacher communicates with families frequently and is sensitive to their culture. Students contribute to and facilitate this communication Teacher responds to family concerns in a timely and professional manner The outcomes of this communication are successful as evidenced by student achievement and family satisfaction

d. Participating in a Professional Community

Relationships with colleagues are characterized by mutual support and cooperation Teacher displays initiative and takes appropriate leadership roles among faculty and is active in appropriate supportive roles. Teacher volunteers to participate in The teacher regularly sends home information about student progress school events and makes substantial contributions to non-academic campus life including assuming a leadership role in at least one extracurricular activity Teacher takes an active role in maintaining a professional environment anchored by mutual and appropriately in their children's learning respect

e. Growing and Developing Professionally

Teacher seeks opportunities for professional development Teacher seeks feedback from both supervisors and colleagues Teacher initiates important activities that contribute to the professional ambiance of the school and profession

f. Showing Professionalism

Teacher maintains the highest standards of honesty, integrity, and confidentiality Teacher makes a concerted effort to challenge negative attitudes or practices and ensures that all students and deserving staff are honored, including those traditionally overlooked Teacher complies fully with school and district regulations Teacher is involved at the leadership level in many academic and extracurricular major projects

Definitions / Selected Operational Definitions

Continuing Teacher: A teacher in or beyond the third year of employment at a single school and who did been performed making in the lowest classification the previous school year or who has not regained continuing status after being designated as The teacher takes a leadership role in team and developmental decision probationary teacher

Probationary Teacher: A teacher who is not in or beyond the third year of employment at a single school or a continuing teacher who has been designated in the lowest performance classification and has not regained continuing status

Group A Teachers: Teachers with available classroom-level student achievement data that are valid and reliable, aligned to Common Core State Standards, and appropriate to individual teacher's content areas

Group B Teachers: Teachers with limited or no classroom-level student achievement data that are valid and reliable. aligned to Common Core State Standards, and appropriate to individual teacher's content areas

Classroom-level Data: Data that is limited to student academic performance within an individual classroom or course May include SBA scores, SAT scores, AP scores, school assessments that are valid and reliable, other standardized assessments, and Student Learning Objectives (SLO's) Classroom-level data is not intended to include teacher made quizzes or teacher made tests for a specific classroom but does include school-wide Expert Trials and Challenge Exercises

Classroom-wide data: Student data averaged across a classroom

Schoolwide data: Student data averages across the school

School-level Data: Group data that is limited to student academic performance within an individual school Includes: SBA scores, SAT scores, AP scores, school assessments that are valid and reliable, other standardized assessments

S.M.A.R.T. Goals: Specific: who, what, where? Measurable: How will progress towards the goals and the achievement of the goals be measured? Attainable: Is the goal realistic, yet rigorous? Results-oriented: Are the goals consistent with established goals and with immediate and long rang goals Time-bound: Are the goals trackable and do they allow for monitoring of progress

Baseline: Student performance data collected at or near the beginning of a cycle before strategies, interventions or action plans have been implemented

In this class, I feel like I fit in

I feel like an important part of my classroom community

My teacher knows what my life is like outside of school

My teacher knows what is important to me

Work in this class is challenging but not too difficult

Student Survey Questions 6-8 / Perception Inventory

My teacher makes learning enjoyable

What I learn in this class is useful to me

My teacher teaches things that are important

My teacher knows the things that make me excited about learning I am not bored in this class

In this class we learn a lot every day

In this class, it is more important to understand the lesson than to memorize When the work is hard, my teacher encourages me to keep trying

My teacher accepts noting less than my best effort

My teacher knows when we understand the lesson and when we do not

If I don't understand something, my teacher explains it a different way My teacher explains difficult things clearly

My classroom is organized and I know where to find what I need

Students feel comfortable sharing their ideas in this class My teacher respects my opinions and suggestions

In this class, we have a say in what we learn and do

My teacher talks to me about my work to help me understand my mistakes

My teacher writes notes on my work that help me improve

My teacher makes connections to other subjects or classes

My teacher cares about me

My teacher pays attention to what all students are thinking and feeling

My teacher would notice if something was bothering me

We do not waste time in this class

Students in this class treat the teacher with respect

The students behave the way my teacher wants them to behave Students behave in this class which helps us to progress

The classroom materials, pictures, words, books and art reflect my cultural

My teacher respects my cultural background

My teacher sees me as an individual

Students in this class respect each other's differences

My teacher knows what my life is like outside of school

I as for help when I need it

feel like I do a good job in this class

Teacher Peer-Review / Peer Perception Inventory

The teacher identifies specific ways in which a lesson might be improved The teacher has an efficient and effective process for recording student attainment of learning goals: students are able to see ho they're progressing

The teacher develops activities designed to engage families successfully

The teacher has supportive and collaborative relationships with colleagues The teacher frequently volunteers to participate in school events and/or district and community projects

The teacher seeks regular opportunities for continued professional development

The teacher welcomes colleagues in the classroom for the purpose of gaining insight from their feedback

The teacher actively addresses students' needs The teacher actively works to provide opportunities

The teacher willingly participates in team and departmental decision

making

Teacher Self-Reflection Questions

What are the instructional objectives of your lesson? How will you evaluate student learning? How will you provide for formative evaluations? How will you determine each student's baseline for the purpose of this lesson?

How does your lesson fit into a hierarchical scaffold of this class's content? Describe the students in this class, including those with special needs

How will you provide instruction in metacognition relative to this content

area? How will you create a continuous feedback loop? How will you engage your students? What will you do? What will the

students do? Will the students work individually or in groups? How will you provide for differential instruction, e g, simultaneous

instruction for students at differing skill and knowledge levels? How will you provide students with a high frequency of opportunities to

respond?

Is there any specific thing you would like observed during the lesson? How is the lesson aligned to the Common Core State Standards?

Real-time: The actual time during which a process or event occurs Input data processed within a very short period of time
Content-series: Content-subject: Curricular subjects such as mathematics and science taught in a school including non-core subjects
Instructor : A highly qualified teacher having achieved the performance ranking of "highly effective" for three (3)
Content-subject: Curricular subjects such as mathematics and science taught in a school including non-core subjects Instructor: A highly qualified teacher having achieved the performance ranking of "highly effective" for three (3) consecutive years or more, and not having been ranked less than "highly effective" for any subsequent two year period

Accelerated Learning Laboratory Measure of Educator Effectiveness

Summative Teaching Performance / Formal Observation Evaluation

	[]	Probation	nary			Continuing			Ele	ementary	Secondary
Instructor Name	year			L				<u> </u>		l	
ormal Observation #1		For	nal C	bser	vation	ı #2					
							a: .				
Instructor Signature	Date					Instructor	Signat	ture			Date
Evaluator Signature:	Date					Evaluator	Signat	ture			Date
		Form	nal Obs	servati	on #1	Form	nal Obs	servati	on #2		Same a FO2
				ser vatr	011 #1			sci vati	011 #2		if higher than
		Date	: 		1	Date:	l				FO!
		Unsatisfactory	Basic	Proficient	Distinguished	Unsatisfactory	Basic	Proficient	Distinguished	Sub-total	Final Performance Classification
Domain 1: Planning and Prep	paration 18 possible points	S									
1a. Content Knowledge		0	1	2	3	0	1	2	3		
1b. Knowledge of Students		0	1	2	3	0	1	2	3		
1c. Setting / Instructional Ou	utcomes	0	1	2	3	0	1	2	3		
1d. Knowledge of Resources		0	1	2	3	0	1	2	3		
1e. Coherent Instruction		0	1	2	3	0	1	2	3		
1f. Student Assessments		0	1	2	3	0	1	2	3		
			Do	maiı	1: F	Planning	and l	Prep	aratio	n TOTAL	
Domain 2: The Classroom Er	nvironment 15 possible points	s									
2a. Respect and rapport	20 Possessi	0	1	2	3	0	1	2	3		
2b. Culture for Learning		0	1	2	3	0	1	2	3		
2c. Managing Classroom Pro	ocedures	0	1	2	3	0	1	2	3		
2d. Managing Student Behar		0	1	2	3	0	1	2	3		
2e. Organization of Physical		0	1	2	3	0	1	2	3		
	- April	Do	omai	n 2: '	The (Classrooi	n En	viro		t TOTAL	
Domain 3: Instruction	15 possible poin	ta									
3a. Communicating with Stu		0	1	2	3	0	1	2	3		
3b. Using Questioning / Pro		0	1	2	3	0	1	2	3		
3c. Engaging Students in Le		0	1	2	3	0	1	2	3		
3d. Using Assessment in Ins		0	1	2	3	0	1	2	3		
3e. Demonstrating Flexibilit		0	1	2	3	0	1	2	3		
Se. Demonstrating 1 lexionit	y and responsiveness	U	1		J	Domai	n 3·]	_		n TOTAL	
	4 44.4					2011101					
Domain 4: Professional Response	onsibilities 18 possible poin		4	0	-	0	4	0	2		
4a. Reflecting on Teaching		0	1	2	3	0	1	2	3		
4b. Maintaining Accurate Ro		0	1	2	3	0	1	2	3		
4c. Communicating with Far		0	1	2	3	0	1	2	3		
4d. Participating in a Profess	<u> </u>	0	1	2	3	0	1	2	3		
4e. Growing and Developing		0	1	2	3	0	1	2	3		
4f. Showing Professionalism	a	0	1	2	3	0	1	2	3	TOTAL I	
	m meet and a second						-			TOTAL	
Domain 4: Professional Respo	onsibilities adjustment (Weighted to co	mpensate	for po	int acc	umulat	ed in the pee	r revie	ews) T	OTA	L X .67 =	

Teaching Performance TOTAL (60 possible)	
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Measure of Educator Effectiveness Evaluation: Observation Component

In-service training (Tuesdays 4:00-5:30pm with optional Wednesday: Required of all instructional staff)

Selected list of Topics	Project Overview, Survey Instruments, Teaching Performance, Student Level Data, Classroom Level Data, Formal Observation Process, Baseline Data, Student Learning Objectives (SLO), Classroom-wide Learning Objectives, Identifying Targeted Students, Monitoring Progress, Formative Feedback Loops, Performance Classifications, Common Core, Reflective Practices, Theory of Mind, Student Engagement and Arousal, Questioning Techniques, Review with Elaboration, Content Density, Knowledge Scaffolds, Cognitive Maps, Meta-memory, Mental Networks, Impeded Metacognitive Instruction, Opportunities to Respond
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Evaluation Cycle / Lesson Observation / In-class Visitation

Informal Observations / Modeling

Observation	Observations targeting specific instructional objectives, and/or data collection may be semi-formal (announced but not scheduled) or informal (impromptu or unannounced) throughout the evaluation cycle. Teacher conferences often follow within the same day.
Insitu Training	In-class modeling and/or demonstrations of: content scaffolding, maximizing content density, techniques increasing student engagement, etc. may be followed by teacher conferences and may be formal, semi-formal or informal and occur throughout the evaluation cycle.
Data Evaluation	In-class evaluation of data collection methods and reliability may be formal or informal throughout the evaluation cycle. May include evaluation of timelines, timeliness and methods used to produce real-time analysis of group and individual student progress towards long and short-term learning goals. May also include sampling of student portfolios and other documents descriptive of student progress. Teacher conferences may follow.

Formal Observation Sequence

Self-reflection	Teacher Self-Reflection Pre-conference Form: Teacher completes form prior to Pre-observation Planning Conference
Conference	Pre-observation Planning conference : Teacher and evaluator discuss student learning objectives of a scheduled lesson and methods/instruments used to assess the lesson effectiveness. Teacher submits the Teacher Pre-Observation Self-reflection Form. At the discretion of the teacher the following may also be included/discussed/submitted: Detailed Lesson Plans, description of activities, identification of materials to be used, and discussion/submission of the Teacher Pre-Observation Self-reflection Form. The may alter any aspect of the planned lesson during this conference. Evaluator and teacher select the appropriate rating table to be used.
Observation	Scheduled Classroom Lesson Observation : Formal uninterrupted classroom observation of a teacher's planned lesson. NOTE: Observations cannot be conducted within 2 instructional days of any scheduled school breaks of at least one week.
Self-reflection	Teacher Self-Review Post Observation Form : Teacher completes a new form or modifies / revises old form prior to Post Observation Conference
Conference	Post Observation Evaluation Conference: Teacher and evaluator identify areas of strengths and opportunities for improvement based on evidence provided to the teacher by the evaluator and items from the Teacher Self-Reflection Pre-conference Form completed by the teacher. The teacher submits the completed Teacher Self-Reflection Pre-conference Form. Plans, activities, and strategies to improve student performance should be the goal. The Post Observation Evaluation Conference must occur within 10 business days of the observation. Any additional items the teacher may want to be considered must be submitted within 24hrs of the completion of the Post Observation Conference.
Self-reflection	Teacher Self-Reflection Pre-conference Form #2 : Teacher completes a new form or modifies / revises old form prior to 2 nd Pre-observation Planning Conference.
Conference	Pre-observation Planning conference : Teacher and evaluator discuss student learning objectives of a scheduled lesson and methods/instruments used to assess the lesson effectiveness. Teacher submits the Teacher Pre-Observation Self-reflection Form. At the discretion of the teacher the following may also be included/discussed/submitted: Detailed Lesson Plans, description of activities, identification of materials to be used, and discussion/submission of the Teacher Pre-Observation Self-reflection Form. The may alter any aspect of the planned lesson during this conference.
Observation	Scheduled Classroom Lesson Observation #2: Formal uninterrupted classroom observation of a teacher's planned lesson. NOTE: Observations cannot be conducted within 2 instructional days of any scheduled school breaks of at least one week. Scheduled Classroom Lesson Observations must be separated by at least 60 calendar days. The Scheduled Classroom Lesson Observation #2 and related requirements may be waived for a continuing teacher if the first observation resulted in a rating of Proficient or Distinguished.
Self-reflection	Teacher Self-Review Post Observation Form : Teacher completes a new form or modifies / revises old form prior to 2 nd Post Observation Conference.
Conference	Post Observation Evaluation Conference #2: Teacher and evaluator identify areas of strengths and opportunities for improvement based on evidence provided to the teacher by the evaluator and items from the Teacher Self-Reflection Pre-conference Form completed by the teacher. The teacher submits the completed Teacher Self-Reflection Pre-conference Form. Plans, activities, and strategies to improve student performance should be the goal. The Post Observation Evaluation Conference #2 must occur within 10 business days of observation #2. Any additional items the teacher may want considered must be submitted within 24hrs of the completion of the Post Observation Conference #2.

Summative

Conference	Summative Evaluation Conference: If Student Academic Progress and Survey Data for the current year evaluation are not available
Conference	at the time of the second post-observation conference, the Summative Evaluation Conference will complete the annual evaluation

cycle and includes a review of student achievement data and other evidence of teacher effectiveness. The teacher and evaluator will discuss with the results of the Teaching Performance Component, the Student Academic Progress Component, and the Survey Component and a resultant summative performance classification (Highly Effective, Effective, Developing, Ineffective) will be assigned. Identification of future actions for improvement/growth may also be decided.

Accelerated Learning Laboratory Measure of Educator Effectiveness

Teacher Self-review / Teaching Performance / Pre - Post Formal Observation

To be completed by the teacher prior to, and after Formal Observations and reviewed at appropriate teacher-evaluator conferences Teacher reflects / speculates on each of the four domains, prior year student academic progress data, survey data, and sets SMART goals to improve student performance for the current year. One point is awarded, for completion of all self-review instruments, in the final summative calculation Additional pages may be attached May be modified by or teacher and evaluator at conferences Continuing Probationary Elementary Secondary Instructor Name date Pre-observation Post Observation Observation #1 Observation #2 Domain 1: Planning / Preparation 1a. Content Knowledge 1b. Knowledge of Students 1c. Setting Goals 1d. Knowledge of Resources 1e. Coherent Instruction 1f. Student Assessments Domain 2: Class Environment 2a. Respect and rapport 2b. Culture for Learning 2c. Managing Class Procedures 2d. Managing Student Behavior 2e. Organizing Physical Space Domain 3: Instruction 3a. Student Communication 3b. Using Questioning / Prompts 3c. Engaging Students 3d. Assessment in Instruction 3e. Flexibility / Responsiveness Domain 4: Professionalism 4a. Reflecting on Teaching 4b. Maintaining Records 4c. Family Communication 4d Professional Community 4e. Developing Professionally 4f. Showing Professionalism Prior year student academic progress data, survey data, SMART goals Specific Measurable Attainable Rigorous Time-bound

Measure of Educator Effectiveness

Form "A" General Instructions Student Baselines / Student Learning Objectives / Targeted Students

Background: In all content subjects ALL utilizes formative, criterion referenced, proprietary instructional materials including a Physical Science Series, Syntax and Semantics Series, Numeric Operations Series, among others. Each series contains "Expert Trials" (mastery power-exams) and "Challenge Trials" (application assessments) that are sequentially numbered and administered at a high frequency in a proctored setting. These evaluation instruments are fine grained (they assess student content knowledge and skills in high detail, that is, they are not sampling instruments) and facilitate continuous feedback loops with many opportunities for instructors to modify their instructional practices based on data driven decisions relative to student progress (individual and group) towards individualized performance goals (student learning objectives, SLO). Additionally, for each content subject, summative exams are proctored at regular intervals throughout the year, including an end-of-year summative exam (S-Exam.) Students may progress at varying rates but each student in each classroom is assigned an individualized growth goal in each content area (yearly growth, class-wide subject SLO CS-SLO). Each student's progress towards this goal is recorded daily. In most cases, it takes several years for a student to complete a series. At the beginning of each year, each student begins on the "number" in each series, s/he finished the year before (the current year, subject baseline, S-Baseline). Students are selected for inclusion in a classroom primarily on the basis of these "academic level" numbers without excessive regard for age or grade so as to reduce the academic variation within each class. Due ALL's unique, display based record keeping system, any student's "level" and/or progress as well as the classroom as a whole can be quickly determined. "Expert" and "Challenge" (jointly referred to as "Trials") numbers are correlated to, and predictive of, performance on end of the year standardized exams (student performance expectations for a specific grade level, the normal grade level benchmark, NGL benchmark). Because students are selected for membership in classrooms based on academic level and performance, not grade or age, all K-8 classrooms contain students of various ages and grades but with reduced academic spread. Data collected on Form "A" is used to evaluate each teacher across all core subjects they teach. In addition, all students assigned to each teacher, are included in that teacher's evaluation.

Form "A" / Each instructor shall complete one Form A for each subject area taught in accordance to the following guidelines.

- A. S-Baseline: The Subject-Baseline represents where each student finished (level of academic achievement) the year before (or the end of the instructional period) in the content subject under consideration. The S-Baseline must be based on objective and reliable data. S-Baselines are determined once each year and are used as a starting point to evaluate: each student's yearly growth as well as incremental progress toward individualized goals, student grades, and teacher effectiveness. The S-Baseline shall be established using one of the following:
 - Content Series Baselines: The highest "Trial" number achieved by a specific student in the subject at the end of the prior year becomes the next year's baseline and starting point.
 - **Deferred Baselines**: For classrooms in which all students begin a series on the same trial (Expert and/or Challenge) number, determination of a baseline is deferred until the middle of the first quarter. The baseline then becomes the highest "Trial" number achieved at that point in time.
 - Placement-exam Baseline: For classrooms in which the majority of students have progressed through a series and are on divergent "trial" numbers, baselines for new students are determined by administering a school provided placement exam.
 - a. Elementary School Subjects
 - 1. Mathematics
 - i. Numeric Operations
 - ii. Intermediate Algebra
 - 2. English Language Arts
 - i. Penmanship
 - ii. Dictated Spelling
 - iii. Lexicon
 - iv. Syntax & Semantics (Language Series)
 - v. Expository Composition
 - vi. Oration
 - 3. Reading / Reading Comprehension / Cross Content Reading
 - 4. Writing: Cross Content
 - 5. Science:
 - i. General Science
 - ii. Physical Science
 - iii. Anatomy & Physiology
 - iv. Physical Geography / Earth Science
 - 6. Social Science
 - i. Political Geography
 - ii. US History
 - iii. World History
 - 7. Foreign Language and Culture
 - 8. Visual Arts
 - b. Secondary School Subject categories (6,7,8)
 - 1. Mathematics
 - 2. English Language Arts
 - 3. Science:

- Social Science
- 5. Foreign Language and Culture
- 6. Fine Arts
- Special Education & Instructional Intervention Specialists' Classrooms
 - 1. The entire population of students assigned to any one specialist teacher is treated as that specialist's "virtual" classrooms. For the purposes of Form "A" each Specialist shall have two classrooms, one comprised of students whose regular classroom is in the elementary school and the other comprised of students whose regular classrooms are in the secondary school. This shall be done regardless of student load, student grade, age, or disability.
 - 2. Each specialist teacher shall complete a separate "Form A" for each subject listed in Ab1-4 above for both their Virtual Elementary and Virtual Secondary classrooms.
 - 3. The S-Baseline "Trial" number for each student shall be the same as assigned by the regular classroom teacher.
- B. SB-Rank: The Subject Baseline Rank represents each student's baseline rank in a given subject relative to each other student's in the current
 - Elementary Classrooms: Each student's S-Baseline ranking shall be determined for the given subject relative to the student's current classroom by ranking the baseline numbers for each student in descending order and assigning the appropriate "rank" number to each student. (The student with the highest trial number is ranked "1". The lowest ranked, equals the total number of baseline scores in that subject within the classroom. Neither grade nor age shall be considered.) NOTE: Because students will be listed in rank-order based on their average rank for all subjects (ASB-Rank) and not based on the single subject rank (SB-Rank), ranking scores in this column will not be sequentially ordered.
 - Secondary Classrooms: The S-Baseline numbers for all students studying the subject in the current classroom shall be ranked in descending order and the appropriate "rank" number assigned to each student (the student with the highest trial number is ranked "1", the lowest ranked, equals the total number of in the classroom or period. Neither grade nor age shall be considered.) In single subject secondary classrooms, this column shall be sequentially ordered with the highest performing student at the top.
 - Special Education & Instructional Intervention Specialists' Classrooms:
 - 1. The SB-Rank shall be expressed as a common fraction with a numerator and denominator
 - 2. The numerator shall be the SB-Rank assigned by the regular classroom teacher for this subject.
 - 3. The denominator shall be the total number of students studying this subject in the regular teacher's classroom.
 - 4. Note: Because these are mixed rankings, several may cluster and the group as a whole may not demonstrate the full range of ranking possible.
 - 5. Because students listed on this form will be rank-order based on the average rank of each student across all subjects (ASB-Rank) the single subject rank numbers (SB-Rank) in this column will not be ordered.
- C. SB-Quotient: The Subject Baseline Quotient represents each student's baseline performance in a given subject relative to all other students in the current classroom. Because all students in a single classroom may not all be working on the same series in a content area, resulting in a different "N" for each content subject, "quotients" will be used to find each student's average rank across all subjects (ASB-Quotient.)
 - a. Elementary: The SB-Quotient is calculated by dividing the SB-Rank by the total number of students studying that subject in that classroom and subtracting that number from one. The SB-Quotient is calculated for each student for each subject and recorded on the appropriated Form "A"
 - b. Secondary: The SB-Quotient shall be calculated by dividing the SB-Rank by the total number of ranked students in the period or class and subtracting that number from one. 1 - <u>SB-Rank</u> = SB-Quotient
 - Special Education & Instructional Intervention Specialists:
 - 1. Elementary: For students in the Specialist's Virtual Elementary Classroom, the SB-Rank shall be the same as the regular classroom teachers.
 - 2. Secondary: For students in the Specialist's Virtual Secondary Classroom, the SB-Rank shall be the same as the regular classroom teachers.
- D. ASB-Quotient: The Average Subject Baseline Quotient represents each student's rank averaged across all subjects, relative classmates in the current classroom.
 - Elementary: Each student's SB-Quotients for all subjects studied by that student shall be added together and then divided by the number of quotients added, to produce the student's average quotient across all subjects (ASB-Quotient).
 - Secondary: Column left blank (single subject classrooms are not averaged on Form "A")

SB-Quotient = ASB-Quotient # Quotients

Special Education & Instructional Intervention Specialists

- 1. Elementary: The ASB- Quotient shall be the same as assigned by the regular classroom teacher. Note: These quotients represent relative performance in the <u>regular</u> classroom for each student in the Specialists virtual classroom.
- 2. Secondary: For students in the Specialist's secondary classroom, the SB-Ranking number from each of a student's periods or classes shall be added together and then divided by the number of items added, to produce that student's average quotient across all subjects (ASB-Quotient).
- E. ASB-Rank: The Average Subject Baseline Rank represents each student's baseline rank averaged across all relevant subjects relative to students in the current classroom.
 - a. Elementary: Each student's ASB-Quotient shall be ranked in descending ordered and assigned the appropriate "rank" number (ASB-Rank) (i.e., the student with the highest ASB-Quotient is ranked "1". The lowest rank equals the total number of students in the classroom. Neither grade nor age shall be considered.
 - Secondary: For each single subject regular secondary school classroom, the ASB-Rank column should be disregarded although the rank-ordered ASB-Rank column will match the SB-Rank column.
 - Special Education & Instructional Intervention Specialists:

- 1. Elementary: The SB-Quotient shall be used to produce a rank-order (ASB-Rank) of students that comprise the Specialist's classroom. Note: The ASB-Rank represent a student's rank in the Specialist's classroom relative to each student's rank in the regular teacher's classroom averaged across all relevant content subjects.
- 2. Secondary: Each student's ASB-Quotient shall be ranked in descending ordered and assigned the appropriate "rank" number (ASB-Rank) (i.e., the student with the highest ASB-Quotient number is ranked "1". The lowest ranked number equals the total number of baseline scores within the classroom.
- F. Preparedness: The rank-ordered list of students shall be divided into three equal groups and tentatively identified as high, adequate, and low (preliminary list of Targeted Students). After the Targeted populations of students are identified and any additional students are moved from the high or adequate groups into the "targeted groups" the three groups remain unaltered for the remainder of the academic year regardless of student performance.
 - a. Elementary: The rank-ordered (ASB-Rank) list of students shall be divided into three equal groups.
 - 1. The first group in the list of students shall be tentatively identified as "High"
 - 2. The second group in the list of students shall be tentatively identified as "Adept"
 - 3. The third group in the list of students shall be tentatively be identified as "targeted"
 - b. Secondary: The rank-ordered (SB-Rank) list of students shall be divided into three equal groups.
 - 1. The first group in the list of students shall be tentatively identified as "High"
 - 2. The second group in the list of students shall be tentatively identified as "Adequate"
 - 3. The third group in the list of students shall be tentatively identified as "Targeted"
 - c. Special Education & Instructional Intervention Specialists:
 - 1. Elementary & Secondary Virtual Classrooms: The ASB-Rank ordered lists of students produced for the Specialists classrooms shall be divided into three equal groups.
 - i. The first group in the list of students shall be tentatively identified as "High"
 - ii. The second group in the list of students shall be tentatively identified as "Adequate"
 - iii. The third group in the list of students shall be tentatively identified as "Targeted"
- G. Targeted: Targeted Students in each classroom: Identifies groups of students who display the lowest performance and who warrant intensive intervention. After Targeted populations of students are identified and any additional students are moved from the high or adequate groups into the "targeted groups" targeted groups remain unaltered for the remainder of the academic year regardless of student performance.
 - a. Elementary & Secondary Students in regular education classrooms: Students who are not already in the targeted groups but scored "FFB" or "A" in any content area on the prior year AMO shall be moved from the high or adequate groups into targeted groups.
 - b. Special Education & Instructional Intervention Specialists / Elementary & Secondary Virtual classrooms: Students who are not already in the targeted groups but scored "FFB" or "A" in any content area on the prior year AMO shall be moved from the high or adequate groups into targeted groups.
- H. Grade Level: Student's grade level
- I. Grade Equivalent Benchmarks / Normal Grade Level Equivalent (NGL-Benchmark) by Subject: The NGL provides benchmarks in Accelerated Learning Laboratory's instructional materials that are predictive of student performance on the AMO. Subject areas tested by AMO are aligned with a "Trial" number in the appropriate subject series relevant to grade. The NGL-Benchmark shall be taken from the chart supplied by the administration.
- J. Classroom-wide Student Learning Objectives by Subject (CS-SLO): Provides reasonable-but-rigorous individualized academic goals for all students in all relevant subject areas. To determine the C-SLO in each subject, the number of contact weeks shall be multiplied by 2 and this product shall be added to each student's baseline numbers for each subject.
- K. Year End Classroom-wide Subject Student Learning Objectives (Y-end CS- SLO): Indicates the degree to which the teacher meets or approaches his/her goal for each student in the relevant subject. For meeting 100-90% of the goal enter a "4", 89-80% "3", 79-70% "2", 69-60% "1".
- L. Year End Classroom-wide Subject Average Student Learning Objectives (Y-end CSA- SLO): Indicates the degree to which the teacher meets or approaches his/her goal for each student averaged across relevant subjects. For meeting 100-90% of the goal enter a "4", 89-80% "3", 79-70% "2", 69-60% "1".
- M. Targeted Student Learning Objectives by Subject (T-SLO): For each targeted student, his/her Grade Equivalent Benchmark and C-SLO shall be determined for each relevant subject including the number of trials for each. The larger of the two numbers shall be multiplied by .8 to arrive at the students T-SLO for each subject. T-SLO's are calculated for only Targeted Students.
- N. Year End Targeted Student Learning Objectives by Subject (Y-end T-SLO-S): Indicates the degree to which the teacher meets or approaches his/her goal for each targeted student in the relevant subject. For meeting 100-90% of the goal enter a "4", 89-80% "3", 79-70% "2", 69-60% "1", calculated for only Targeted Students.
- O. Year End Targeted Student Learning Objectives Averaged across all Subjects (Y-end T-SLO-AS): Indicates the degree to which the teacher meets or approaches his/her goals for each targeted student averaged across all subjects. For meeting 100-90% of the

goal enter a "4"	', 89-80% "3", 7	9-70% "2", 69-60	% "1", calculated	for only Targeted	Students.	

Measuring of Educator Effectiveness

Baselines by Classroom and Subject / Classroom Wide SLO Goals by Subject / Targeted Students / Target SLO's for Targeted Students

Instruction	al Se	ries /	Class	s Title	e / Su	bject									
Revision n	umbe	r:		_		Sped / Intervention classroom	lemei	ntary		S	econo	dary			
Instructor	Namo	e:				Instructor Signature:					_ D	ate:			
Evaluator	Name	e:				Evaluator Signature:					_ D	ate:			
Teacher	identi	fied a	n appı	ropria	te S-E	Baseline for each student. Teacher has <u>NOT</u> identified ap	propr	iate S	-Bas	elines	for e	ach s	tuden	t.	
Teacher	identif	fied ar	ı appr	opriat	te CS-	SLO for each student. Teacher has <u>NOT</u> selected an a	approp	riate	CS-S	SLO f	or eac	h stu	dent.		
Teacher	appro	priate	ely ide	entifie	d targ	eted students. Teacher has <u>NOT</u> appropriatel	y iden	tified	targ	eted s	tuden	ts.			
Teacher	ident	ified a	an app	ropria	ate T-	SLO for each targeted student. Teacher has <u>NOT</u> identified an	appro	priat	e T-S	SLO f	or eac	h tar	geted	stude	ent.
F	Α	В	С	D	E	Student Name	Н	I	J	K	L	М	N	0	
Preparedness	S-Baseline	SB- Rank	SB-Rank Quotient	ASB- Quotient	ASB-Rank		grade level	NGL Benchmark	OTS-SD	Y-end CS-SLO	Y-end CSA-SLO	T-SLO	Y-end T-SLO-S	Y- end T-SLO-AS	Y-End Subject Exam
High					1										
					2										
					3										
					5										
					6										
					7										
					8										
A 14-					9										
Adequate					10										
					12										
					13										
					14										
					15										
					16										
					17 18										
G					19										
Targeted					20										
Students					21										
					22										
					23										
					24 25										
					26										
					27										
90-100% met		4 ndivid	ualized	l SLO	8	3 2 0-89% met their individualized SLO 60-79% met their individualized SLO	SLO	I	ess th	an 60°	% met	1 indiv	idualiz	zed SI	.0

% of targeted students meeting T-SLO-AS	Classroom wide % of students meeting CSA-SLO	

Accelerated Learning Laboratory Measure of Educator Effectiveness g Performance / Formal Observation Evaluation / Post Observation Confer

To be completed by the Evaluator after Formal Observations and reviewed at Observation Evaluation Conferences Evaluator determines whether the teach	approp	riat	te Teacl	ner-Ev	valua	ator (conf	erenc	es Ac	dditio	nal pag	ges m	nay be	attached				evaluator duri	ng Post-
Observation Evaluation Conferences Evaluation determines whether the code.	101 15 111	uki	ng ucce	puote	pro	B1 03.	3 101	, vara		ondar		_		ation #1	P	robationa	arv	Sped / Inte	ervention
Elementary Grade Range / Secondary Disciplin	••						_	_	_		_	_					· L		
Elementary Grade Range / Secondary Discipin	ic								Elen	nenta	ry	Ol	oserva	ation #2		ontinuin	g		
								_											
Teacher Printed Name								Tea	icher S	signat	ture							Date	
Evaluator / Observer Printed Name							Ev	valua	tor / Ol	bserv	er Sign	ature	,					Date	
Diametry cosciler range		Ob	servatio	n 1	Ot	bserv			.01 / 01	0001	or orga							Dute	
Ι	Date:																		
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		tory		ped	tory	1		ped			in ling	>	ssin						
		sfac	ent	guist	sfac		ent	guist	otal		ficat	actor	ogre						
		Unsatisfactory	Basic Proficient	Distinguished	Unsatisfactory	Basic	Proficient	Distinguished	Sub-total	- 1	Final Teaching Classification	Sa isfactory	Not progressing						
		Ō	B G		ō	Ř	ď		Š	Ü	ΙÖ	Š	ž	_		C	ommer	nts	
Domain 1: Planning and Preparation 18 possible points					_							_							
1a. Content Knowledge		0	1 2	3	0	1	2	3		_			Щ						
1b. Knowledge of Students		0	1 2	3	0	1	2	3											
1c. Setting / Instructional Outcomes		0	1 2	3	0	1	2	3											
1d. Knowledge of Resources		0	1 2	3	0	1	2	3											
le. Coherent Instruction		0	1 2	3	0	1	2	3	-										
1f. Student Assessments Domain 1		0	$\frac{1}{\alpha}$ and	Drone	U	on T	Z FOT	CAI											
Domain 1	. Flaii	11111	g anu .	гтера	пан	.011	101	AL											
Domain 2: The Classroom Environment 15 possible points																			
2a. Respect and rapport		0	1 2	3	0	1	2	3											-
2b. Culture for Learning		0	1 2	3	0	1	2	3											
2c. Managing Classroom Procedures		0	1 2	3	0	1	2	3											
2d. Managing Student Behavior		0	1 2	3	0	1	2	3											
2e. Organization of Physical Space		0	1 2	3	0	1	2	3											
Domain 2: Th	e Clas	sro	om En	viror	ıme	nt [ГΟΊ	AL											
Domain 3: Instruction 15 possible points																			
3a. Communicating with Students		0	1 2	3	()	1	2	3											
3b. Using Questioning / Prompts / Discussion		0	1 2	3	()	1	2	3											
3c. Engaging Students in Learning		0	1 2	3	0	1	2	3											
3d. Using Assessment in Instruction		0	1 2	3	0	1	2	3											
3e. Demonstrating Flexibility and Responsiveness		0	1 2	3	0	1	2	3											
	D	om	ain 3:	Instru	ictic	on T	ΓΟΊ	ΓAL											
																			-
Domain 4: Brofossional Paragraphilities 10 77 1	-4-																		
Domain 4: Professional Responsibilities 18 possible poin 4a. Reflecting on Teaching	- 1	0	1 2	3	\cap	1	2	3		1		Г							
4b. Maintaining Accurate Records		0	1 2	3	0	1	2	3											
4c. Communicating with Families		0	1 2	3	0	1	2	3											
4d. Participating in a Professional Community		0	1 2	3	0	1	2	3	<u> </u>	+			H						
4e. Growing and Developing Professionally		0	1 2	3	0	1	2	3		\dashv			H						
4f. Showing Professionalism		0	1 2	3	0	1	2	3											
Domain 4: Pro	ofessio	onal	l Resp	onsib	iliti	es 7	ГОТ	ΓAL											
											_								

Domain 4 adjustment	(Weighted to compensate for po	oint accı	ımul	ated in the peer reviews) TOT	AL	Χ.	67 =						
		Acce	ele M	Performance TOTAL (60 point rated Learning leasure of Educator Effe	Locti	al vei	porator ness	у					
administered in grades K-2 Summative Performance (5 Highly effective very high level 6 Effective: Tea indicates high valued educato 7 Developing: T moderate level educator with I leffective: Te satisfaction University	aluator at the end of yearly evaluation Domain 4 is weighted to comp Classifications for Educator Effective: Teacher consistently demonstrated is of satisfaction. Top performer in a cher consistently demonstrates teach levels of satisfaction. Very good per or Strong evidence is required for refreacher consistently demonstrates reacher consistently demonstrates researcher consistently demonstrates researcher rarely demonstrates teaching promise eacher rarely demonstrates teaching insatisfactory performer in most area ting a teacher as Ineffective.	n period a ensate for tiveness es teachin Il areas in ning effectormer in ating a tea asonable to performer	and re or po ng eff ncluditiven all an acher teach in al	int(s) accumulated in the peer ectiveness above stated expectation ing student achievement. Convinces at or above stated expectations reas including student achievemen as Effective ing effectiveness at stated expectat I areas including student achievement reasonable expectations, meets for	alua rev ns, e ing (, me t W ions ent	exceevidets of hile	conference Ad s for grades 3 eds all objective ence is required or exceeds all of there may be so eets most goals nile there are are s established for	-8. Dor s, goals for ratin ojectives ome area establish as that r student most ar	and targets ng a teacher , goals and is that requi	for student as Highly largets for s re minor de ent performater developi e, survey de cing evider	performa Effective student pe velopmen ance, surv ment the to ata indica ace and hi	ades K-2. nce, survey de rformance, su t the teacher see data indicate eacher is a value low levels of the search	ata indicate arvey data is a highly ate lued
	D (G 1 D) : 1			D. (1. 17.11			Probationary	K-2		Seco	-	•	ervention
Elementary Grade	Range / Secondary Discipline			Rating Table			Continuing	Grad	les 3-8	Elem	entary	N/Y Prior	r year data
Te	eacher Printed Name				Т	eacl	ner Signature					Dat	e
Performance Classification	for this teacher ending this evaluation	on period		Е	valu	iatoi	r / Observer Sig	nature	T	1		Dat	e
Teaching Performance				Comments					K-2 , 3-8 Points Possible	Points Earned	Weigl	Final Points	Previous Year points
Domain 1: Planning and Preparation Domain 2: The									18		x1		
Classroom Environment									15		x1		
Domain 3: Instruction Domain 4: Professional									15		x1	,	
Responsibilities							Total Teac	ning Pe	18 rformance	Points (60	x.67 Dipossible		
Student Acade	emic Progress Data			Results	/ C	om	ments				Points Possible	l l	Previous Year
						То	otal Student A	cademi	c Progress	Points (40) possible		
Survey Data				Results / Comments						Points Possible grades K-2	Points Possible grades 3-8	e Points Earned	Previous Year
Student Survey										-	15		
Parent Survey										5	2		
Self-Review										1	1		
Peer Survey										4	2		
- a				Total Survey Po	oint	s (g	grades K-2 pos	sible =	10, grades	3-8 possi	ble = 20))	
Performance Classif	ication Component Sumn	nary		Results / Comments						Points Possible grades K-2	Points Possible grades 3-8	l l	Previous Year

Teaching Performance		66	60	
Student Academic Progress		44	40	
School Level and Survey Data		10	20	
	Total Performance Classification Component Po	oints (120	possible)	

State of Hawaii – Department of Education

SCHOOL CALENDAR

Teachers' Work Year - 1st Semester: July 23, 2015 to January 5*, 2016; 2nd Semester: January 6, 2016 to May 30, 2016 Students' Work Year - 1st Semester: July 29, 2015 to December 17, 2015; 2nd Semester: January 6, 2016 to May 26, 2016

	Days	Days		Su	М	Т					
1		2	July	19	20	21	22	23	24	25	Ist SEMESTER - 91 Student Days
2	3	7		26	27	28	29	30	31	1	Jul. 23 - First Day for Teachers
3	8	12		2	3	4	5	6	7	8	Jul. 29 - First day for Students
4	13	17		9	10	11	12	13	14	15	
5	17	21	August	16	17	18	19	20	21	22	Aug. 21 - Statehood Day
6	22	26	•	23	24	25	26	27	28	29	<u>Q1</u> 46 days
7	27	31		30	31	1	2	3	4	5	40 days
8	31	35		6	7	8	9	10	11	12	Sep. 7 - Labor Day
9	36	40	September	13	14	15	16	17	18	19	·
10	41	45	•	20	21	22	23	24	25	26	
11	46	50		27	28	29	30	1	2	3	1st Qtr (46 days) Ends - Oct. 2
12				4	5	6	7	8	9	10	Oct. 5-9 - Fall Break***
13	50	55		11	12	13	14	15	16	17	Oct. 12-16 - One student day off for EO & Teacher Institute Day
14	55	60	October	18	19	20	21	22	23	24	(date for each island TBD and subject to change.)
15	60	65		25	26	27	28	29	30	31	(
16	65	70		1	2	3	4	5	6	7	Q2
17	69	74		8	9	10	11	12	13	14	Nov. 11 - Veterans' Day 45 days
18	74	79	November	15	16	17	18	19	20	21	Nov. 26 - Thanksgiving Day
19	77	82		22	23	24	25	26	27	28	Nov. 27 - School Holiday
20	82	87		29	30	1	2	3	4	5	
21	87	92		6	7	8	9	10	11	12	2nd Quarter (45 days) and 1st Semester Ends - Dec. 17
22	91	96	December	13	14	15	16	17	18	19	Dec. 18 - 12-month teachers work day
23			December	20	21	22	23	24	25	26	Dec. 25 - Christmas; Jan. I - New Year's
24			2015	27	28	29	30	31	1	2	Dec. 21-Jan. I - Winter Break**
25	94	100	2016	3	4	5	6	7	8	9	Jan 4 12-month teachers work day
26	99	105		10	11	12	13	14	15	16	Jan. 5 - Teacher work day (no students)*
27	103	109	January	17	18	19	20	21	22	23	2nd SEMESTER - 91 Student Days
28	108	114	janaary	24	25	26	27	28	29	30	·
29	113	119		31	1	2	3	4	5	6	Jan. 18 - Martin Luther King Day
30	118	124		7	8	9	10	11	12	13	48 days
31	122	128	February	14	15	16	17	18	19	20	Feb. 15 - Presidents' Day
32	127	133	rebludiy	21	22	23	24	25	26	27	Teb. 13 - Tresidents Day
33	132	138		28	29	1	2	3	4	5	
34	137	143		6	7	8	9	10	11	12	2nd Quarter (49 days) Ends May 15
35	139	145	March	13	14	15	16	17	18	19	3rd Quarter (48 days) Ends - Mar. 15 Mar. 16-24 - Spring Break***
36	138	140	March	20	21	22	23	24	25	26	
37	143	149		27	28	29	30	31	1	20	Mar. 25 Kuhio Day Good Friday Mar. 28 - Observance of Kuhio Day
38	148	154		3	4	5	6	7	8	9	1 Iai. 20 - Obset valice of Kullio Day
39	153	159		10	11	12	13	14	15	16	
			A 5 == 11		18		20		22	23	<u>Q4</u> 43 days
40	158	164	April	17		19		21			45 days
41	163	169		24	25	26	27	28	29	30 7	
42	168	174		1	2	3	4	5	6		
43	173	179		8	9	10	11	12	13	14	May 26: Last Day for Students®
44	178	184	May	15	16	17	18	19	20	21	4th Quarter (43 days) and 2nd Semester Ends - May 26
45	182	189		22	23	24	25	26	27	28	May 27: Last Teacher Day
	-2^	+1^^		29	30	31	1	2	3	4	May 30 - Memorial Day
	180	190									

^2 Instructional days shall be converted to a non-student day for school planning and "equivalent day") for training and collaboration meetings beyond the teacher's regular work day.

Statehood Day: August 21,2015 Labor Day: September 7, 2015 Veterans Day: November 11, 2015 Thanksgiving Day: November 26, 2015 Christmas Day: December 25, 2015

Presidents' Day: Good Friday:

New Year's Day: January 1, 2016 Dr. Martin Luther King Jr. Day: January 18, 2016 February 15, 2016 Prince Jonah Kuhio Kalanianaole Day: March 25, 2016 March 25, 2016 Memorial Day: May 30, 2016

***For 10 month teachers - Intersessions: Oct 5-9, Dec 18, Jan 4, Mar 16, 17; Recesses: Dec 21-Jan 1 & Mar 18-24

Teacher Institute Days: Oct 12 – 16

Rationale: ALL-Hawaii will adopt the state's annual calendar, as it is advantageous to student and staff recruitment, and it matches our school's mission and vision.

ALL Hawaii Elementary School's Weekly Schedule

	<u>Monday</u>	<u>Tuesday</u>	<u>Wednesday</u>	<u>Thursday</u>	<u>Friday</u>
7am	School Opens				
7:45	Morning classes begin				
8am					
9am					
10am					
10:45	Morning recess				
11am		Specials: PE/Art/Language		Specials: PE/Art/Language	
12pm	Lunch	Lunch	Lunch	Lunch	Lunch
12:30	Afternoon class begins	Afternoon class begins	Afternoon class begins	Afternoon class begins	Afternoon class begins
1pm	Elementary students Dismissed				
1:15	In house training: 1:15-2:15				
2pm		Elementary students Dismissed	Elementary students Dismissed	Elementary students Dismissed	Elementary students Dismissed
2:15	Teacher planning period				
3pm					

	ELEMENTARY	<u>DAILY</u>			
	Tues-Friday	Monday			
7am	School Opens	School Opens			
	Morning Choral	Morning Choral			
7:45					
	Numeric	Numeric			
8am	Operations	Operations			
9am	Lexicon/Syntax	Lexicon/Syntax			
10am	Science	Science			
	Morning recess	Morning recess			
10:45					
	Specials or				
11am	Science	Reading			
12pm	Lunch	Lunch			
	Numeric	Numeric			
12:30	Operations	Operations			
		Elementary			
	Reading or	students			
1pm	Science	Dismissed			
		In-house			
		training: 1:15 to			
1:45	Afternoon choral	2:15			
	Students				
2pm	dismissed				
	Teacher planning	Teacher planning			
2:15 -	period followed by teacher dismissal	y period followed by teacher dismissal			
3pm	teather distillssal	teather distillssal			

ALL Hawaii Middle School's Weekly Schedule

	<u>Monday</u>	<u>Tuesday</u>	<u>Wednesday</u>	<u>Thursday</u>	<u>Friday</u>
7am	School Opens				
8am	Period 1				
9am	Period 2				
10am	Period	Period	Period	Period	Period
11am	Period 4				
12pm	LUNCH	LUNCH	LUNCH	LUNCH	LUNCH
12:30	Period 5	LUNCH	LUNCH	LUNCH	LUNCH
1pm	Period 6	Period 5	Period 5	Period 5	Period 5
2pm	Students Dismissed	Period 6	Period 6	Period 6	Period 6
3pm	In House training: 2:15-3:15	Students Dismissed	Students Dismissed	Students Dismissed	Students Dismissed
3:15pm	Teacher Planning Period: 3:15-4pm				
4pm					

ALL Hawaii Middle School's Daily Schedule

Tuesday-Friday

Monday

	, ,	<u> </u>
7am	School Opens	School Opens
8am	Period one	Period one
9am	Period 2	Period 2
10am	Period 3	Period 3
11am	Period 4	Period 4
	Student & teacher lunch	Student & teacher lunch
12pm		
	student lunch continued	
12:30		Period 5
1pm	Period 5	Period 6
2pm	Period 6	Students Dismissed
3pm	Students dismissed	In house training: 2:15 to 3:15
3:15pm	Teacher planning period	Teacher planning period
4pm	Teachers dismissed	Teachers Dismissed

BY-LAWS

OF

ACCELERATED LEARNING LABORATORY- HAWAI'I

(A Hawai'i Public Charter School)

ARTICLE I - NAME

The name of the Charter School shall be ACCELERATED LEARNING LABORATORY-HAWAI'I: A Hawai'i Public Charter School.

ARTICLE II - OFFICES

The principal office of the Charter School shall be located in [street address tbd], Kapolei, Hawai'i, 96707. The Charter School may also maintain offices at such other places where this Charter School is qualified to conduct its activities, as the Board of Directors may, from time to time, determine.

ARTICLE III - LIMITATIONS ON BYLAWS

In the event that these bylaws violate or are inconsistent with the terms of the School's Charter Contract, the terms of ALL's state charter contract will prevail, and the Board will amend one or both documents to achieve consistency, whenever possible.

ARTICLE IV - EDUCATIONAL PURPOSES

The Charter School shall operate a Charter School in the State of Hawai'i pursuant to H.R.S. § 302B and 414D. The Charter School shall provide a learning environment that will present academic, social, and personal skills children need to become life-long learners and productive members of society and provide additional academic choices for parents.

ARTICLE V - BOARD OF DIRECTORS

Section 5.1 - Name, Numbers, Election and Term of Office:

(a) The Board of Directors of the Charter School (hereinafter referred to as "the Board") shall be known and described as the Board of Directors of the Charter School.

- (b) The number of said Directors of this Charter School shall be not less than one (1) nor more than seven (9), provided that said number may be changed by an amendment to the By-laws, duly adopted by the Board, subject always to any restrictions of law as to the minimum number of Directors and subject to the requirements that the number of Directors shall be no less than one (1).
- (c) The individuals designated on the Charter School's Charter School Application (Applicant Board) shall be the initial Board.
- (d) Additional members of the Board may be sought from the community, interested parties, or parents of the Charter School. Except as may otherwise be provided in the Charter Agreement or appropriate laws, any members of the Board shall be elected by a majority vote of the votes cast at a regular or special meeting to be held by the Directors, present in person or telephonically, that are entitled to vote in the election. Entitlement to vote in any such election shall be limited to Directors that have served at least one month prior to any election held to elect members to the Board. Vacancies in the Board shall be filled as prescribed in these by-laws.
- (e) Each Director who is not personally liable in connection with the school (by contract or otherwise), shall hold office for a period of one (1) year, and until his/her successor is elected and qualified, or until his/her prior death, resignation, or removal. Any director personally liable in connection with the school (by contract or otherwise), may hold office until the director's personal liability is extinguished, or satisfied by surety.

Section 5.2 - Qualifications:

- (a) Each member of the Board must be over the age of eighteen (18);
- (b) Each member must pass a background check as requested by the Department of Education and any appropriate sponsoring board of the Charter School, which will include as a minimum, a fingerprint check showing that there exists no criminal record which could adversely affect the Charter School or its operation as a public school.
- (c) Each member of the Board must establish that each such Director possesses significant experience and qualifications to further the Board's commitment to the educational purposes of the Charter School as set forth herein including, without limitation, educational, business, managerial and fund-raising skills.

Section 5.3 - Duties and Powers:

The Board of Directors shall appoint members and be responsible for the authorization, oversight and, when required, ratification of acts to be carried out by a Governing Board for the Charter School being operated by the Charter School which Governing Board shall be responsible for the ratification of the acts of the Administration/School Directors and the performance of any and all other acts required to be performed by the Governing Board by state or federal statute and the Charter Contract entered into by the Sponsoring Board pursuant to Hawai'i Charter School Law, A.R.S. § 302-B7

Section 5.4 - Expressed Limitations on Power to Act:

The Board shall preserve the Charter School's status by the observance of prudent fiscal and monetary controls herein set forth. The Charter School, by and through the Board, shall not:

- (a) Incur debt on behalf of the school (state entity)
- (b) Pay any compensation in excess of a reasonable allowance for salaries or other compensation for personal services that are actually rendered;
- (c) Make any part of its services available on a preferential basis;

Section 5.5 - Manner of Acting:

- (a) Except as otherwise provided by these By-laws, at all meetings of the Board, each member of the Board, present in person, telephonically, shall have one vote.
- (b) Except as otherwise provided by statute, the Charter Contract, or these By-laws, the action of a majority of the Directors present at any meeting at which a quorum is present shall be the act of the Board. Any act authorized, in writing, by all of the Directors entitled to vote thereon and filed with the minutes of the Charter School shall be the act of the with the same force and effect as if the same had been passed by unanimous vote at a duly called meeting of the Board.

Section 5.6 - Director Deadlock:

In the event of a deadlock on any substantial matter affecting the Charter School's operations, the Board shall appoint a mutually agreed upon third party neutral to aid the Board in facilitating the decision making process. In the event deadlock persists, the Board shall promptly refer the issue to the Hawai'i Dispute Resolution Association or another suitable dispute resolution service and request the appointment of a mediator who shall facilitate discussions and encourage pursuing solutions. If mediation fails and deadlock persists, the Board shall agree upon a third party neutral arbitrator who shall have the authority to issue binding decisions on issues at deadlock that detrimentally affect the Charter School, its activities, and its operations.

Section 5.7 - Vacancies:

- (a) Any vacancy in the Board occurring by reason of an increase in the number of Directors shall be filled by a majority vote of the votes cast at a regular or special meeting by the Board, present in person, telephonically, or via the internet, that are entitled to vote in the election.
- (b) Vacancies occurring by reason of the death, resignation, disqualification, removal, or the inability to act of any Director, or otherwise, shall be filled by a majority vote of the votes cast at a regular or special meeting by the Board, present in person, telephonically, or via the internet, that are entitled to vote in the election, as a means to fill the unexpired portion of the term of any

such vacancy. In an election to fill the unexpired portion of any term, where the number of Directors qualified to vote is less than three (3) in number, which may be less than any specified quorum, the unexpired portion of any term shall be filled by a vote of a majority of the remaining Directors at any regular or special meeting of the Board called for that purpose.

Section 5.8 - Resignation:

Any Director may resign at any time by giving written notice to the Board, the Chairman/Chair of the Board, or the Secretary of the Board. Unless otherwise specified in such written notice, such resignation shall take effect upon receipt of such notice by the Board or such officer, and the acceptance of such resignation shall not be necessary to make it effective.

Section 5.9 - Removal:

- (a) Any director who is not personally liable in connection with the school (by contract or otherwise) may be removed from the Board with or without cause at any time by a resolution and vote of a two-thirds (2/3) of the Directors entitled to vote who are present in person cast at a regular meeting or special meeting convened for that purpose.
- (b) Any director personally liable in connection with the school (by contract or otherwise), may not be removed from their position as Director until the Director's personal liability in connection with the school is extinguished, or appropriately satisfied by surety which shall be determined by the director who has the personal liability.
- (c) Any director who has been designated as the "applicant" on an Application for a Charter School which has been approved by either the Hawai'i State Board of Education, the Hawai'i State Board for Charter Schools, or a school district ("Sponsor") or is the designated "Charter Representative" in any Charter Contract, and has executed assurances to said sponsor with respect to the Charter School's operations, cannot be removed without the approval of said Sponsor.

Section 5.10 - Salary:

No salary shall be paid to Directors of the Charter School for their services in such capacity as a Director of the Charter School. However nothing herein contained shall be construed or interpreted to prevent any person serving as a Director of the Charter School from also serving as an officer or employee of the Charter School and receiving a salary or other compensation for that position.

Section 5.11 - Contracts:

(a) No contract or other transaction between the Charter School and any other Charter School shall be impaired, affected, and/or invalidated nor shall any Director be liable in any way by reason of the fact that any one or more of the Directors of the Charter School may be interested in any such other Charter School or may serve as a director or officer of any such other Charter

School(s), provided that such other interests or involvements with such other Charter School(s) and/or other relevant material facts are disclosed in writing to the Directors, including, without limitation, the nature of such Director's involvement with such other Charter School(s), including, without limitation, such Director's ability to influence the action of such other Charter School(s), and any tangible or intangible benefit or profit that may accrue to such Director as a result of any contract or transaction between the Charter School and any other Charter School(s). In addition, the contract or transaction must be fair and reasonable to the Charter School when it is authorized, approved, and ratified in accordance with the following paragraph.

(b) Any Director, personally and individually, may be a party to or may be interested in any contract or transaction of this Charter School, and no Director shall be liable in any way by reason of such interest, provided that the Director discloses the interest or makes the interest known to the Board of Directors, and the Board of Directors authorizes, approves, or ratifies such contract or transaction by the vote (not counting the vote of any such Director) of a majority of a quorum, and notwithstanding the presence of any such Director at the meeting at which such action is taken. Although the interested Director cannot vote, the Director may be counted in determining the presence of a quorum at the meeting. This Section shall not be construed to impair or invalidate or in any way affect any contract or other transaction which would be otherwise valid under the law (common, statutory, or otherwise) applicable thereto.

Section 5.12 – Conflicts of Interest:

- (a) The Board shall adopt a conflict of interest policy ("Conflict of Interest policy") to be followed by the members of the Board in executing their duties, and in lieu of any formal policy shall be bound by the provisions in this section.
- (b) The Conflict of Interest Policy must provide for the disclosure of any duality of interest or possible conflict of interest on the part of any Board Member and such duality of interest or possible conflict must be made a part of the record of the Charter School either through an annual procedure or when the interest becomes a matter requiring Board action and then recorded in the appropriate minutes wherein an action related to this issue is taken.
- (c) No Board Member having a duality of interest or possible conflict of interest shall vote or use his/her personal influence on the issue being decided however, the Board Member may participate in the information gathering and answer appropriate questions related to the issue. The minutes of any meeting where a conflict is present should reflect:
 - 1. That a disclosure of the conflict was made:
 - 2. That the Board Member with the conflict abstained from voting; and
 - 3. Any other relevant factors necessary.
- (d) All Board members shall be informed and advised of the Conflict of Interest Policy prior to entering or assuming the duties of his/her office.

(e) The Board shall be allowed to rely on statements and opinions of the Charter School's legal counsel, accountants, and other experts in making decisions related to the fairness or reasonableness of any transactions where duality of interests exist.

Section 5.13 - Committees:

The Board, by resolution adopted by a majority of the entire Board present at a duly-authorized meeting, may from time to time designate from among its members an executive committee, and may also designate from among its members and non-members such other committees as the Board may deem desirable, each consisting of three (3) or more Board members, with such powers and authority (to the extent permitted by law) as may be provided in such a resolution. Each such committee shall serve at the pleasure of the Board.

ARTICLE VI - MEETINGS OF THE BOARD

Section 6.1 - Annual Meetings:

The annual meeting of the Board shall be held at a time designated by the Board, for the purpose of electing members of the Board, ratifying any actions deemed necessary, election of any school governing boards, voting on a budget, setting policy and transacting such other business as may properly come before the meeting.

Section 6.2 - Monthly Meetings:

The Board may, but is not obligated to convene and hold monthly meetings for the purposes of transacting approval of any actions necessary and the conduct of the Charter School and its functions.

Section 6.3 - Special Meetings:

Special meetings of the Board may be called at any time by the Chairman/Chair of the Board or the Secretary at the written request of two (2) members of the Board, as otherwise required under the provisions of appropriate laws, or as may be deemed necessary to resolve the issues.

Section 6.4 - Place of Meetings:

- (a) All meetings of the Board shall be held at the principal office of the Charter School, or at such other places as shall be designated in the notice or waiver of notice of such a meeting or meetings.
- (b) The Charter School must file a disclosure statement with the Secretary of State identifying where any public notices of its meetings will be posted. The location identified must be a place to which the public has reasonable access. The location should have normal business hours, should not be geographically isolated, should not have limited access, and should not be too difficult to find.

<u>Section 6.5 - Notice of Meetings</u>:

- (a) Notice of all meetings, including annual, monthly, and special meetings, shall specifically set forth an agenda for said meeting.
- (b) Except as otherwise provided by statute, written notice of each meeting of the Board, whether annual or special, stating such time and place where it is to be held, shall be served either personally, by mail, e-mail, or fax not less than twenty-four (24) hours before the meeting. If mailed, e-mailed, or faxed, such notice shall be directed to each Director at his address as it appears on the records of the Charter School, unless the Director shall have previously filed with the Secretary a written request that notices intended for that Director be also mailed to some other address, in which case it shall be mailed to the address designated in such request.
- (c) Notice is deemed to have been received upon the date that the letter is mailed, e-mailed, or the date that the fax is issued.
- (d) Notice of any regular or special meeting shall not be required to be given to any Director who shall attend such a meeting without protesting prior thereto or at its commencement the lack of notice to him, or who submits a signed waiver of notice, whether before or after the meeting. Notice of any adjourned meeting shall not be required to be given.
- (e) Meetings may be conducted by consent without the requirements of notice if all Directors execute a duly authorized minute entry reflecting consent to the actions.
- (f) Meetings may be conducted telephonically, so long as all relevant parties are informed of the need or existence of the non-personal attendance.
- (g) The agenda must contain such information as is reasonably necessary to inform the Board Members of the matters to be discussed or decided.

Section 6.6 – Chairman/Chair of Meetings:

At all meetings of the Board, the Chair shall preside. If he/she shall be absent, then the Vice Chair or another available officer shall preside as a temporary Chairman for such a meeting or adjournments.

Section 6.7 - Quorum:

(a) Except as otherwise provided herein, or by statute, at all meetings of the Board, the presence at the commencement of such meetings of the Directors, in person or telephonically, which attains a majority of the total number of the Directors entitled to vote, shall be necessary and sufficient to constitute a quorum for the transaction of any business. The withdrawal of any Director after the commencement of any meeting shall have no effect on the existence of a quorum or any decisions, after a quorum has been established at such a meeting.

(b) Despite the absence of a quorum at any annual meeting or special meeting of the Board, the Directors, by a majority of the votes cast by the Directors entitled to vote thereon, may adjourn the meeting. At any adjourned meeting at which a quorum is present, any business may be transacted at the meeting as originally called.

Section 6.8 - Voting:

- (a) Except as otherwise provided by statute, the Charter Contract, or these By-laws, any corporate action taken by a vote of the Directors, other than the election or removal of Directors, as provided herein and voting on amendments to the Charter Contract or By-laws, shall be authorized by a majority of the votes cast at each meeting.
- (b) Each Director is entitled to one vote which may be cast in person or telephonically.

<u>Section 6.9 - Conduct of Meeting:</u>

A duly adopted agenda for each meeting shall be prepared by the Chair or other designated Director or officer. The meeting shall be conducted in accordance with the agenda. The Chair or any Chairman of the meeting shall have the right to limit discussion on any particular item and shall have the right to provide time limits for any party wishing to speak on any appropriate point. Meetings shall be conducted in accordance with respect and harmony at all times, and to maintain a positive yet responsive environment.

ARTICLE VII - GOVERNING BOARD

Section 7.1 – Name, Numbers, Election and Term of Office:

- (a) The Governing Board of the Charter School shall be known and described as the Governing Board of the Charter School.
- (b) The number of said members of the Governing Board shall be four (4), provided that said number may be changed by an amendment to the By-laws, duly adopted by the Board of Directors.
- (c) The members of the Governing Board shall be appointed by a majority vote of the votes cast at a regular or special meeting to be held by the Board of Directors, present in person or telephonically, that are entitled to vote in the election. Vacancies in the Governing Board shall be filled as prescribed in these By-laws.
- (d) Each member of the Governing Board shall hold office for a period of one (1) year, and until his/her successor is elected and qualified, or until his/her prior death, resignation, or removal

Section 7.2 – Qualifications:

- (a) Each member of the Governing Board must be over the age of eighteen (18);
- (b) Each member must be able to pass a background check as requested by the Department of Education and any appropriate sponsoring board of the Charter School, which will include as a minimum, a fingerprint check showing that there exists no criminal record which could adversely affect the Charter School or its operation as a public school.
- (c) Each member of the Governing Board must establish that each such member possesses significant experience, qualifications, and desire to further the Board of Directors' commitment to the educational purposes of the Charter School as set forth herein including, without limitation, educational, business, managerial and fund-raising skills.

Section 7.3 – Duties and Powers:

The Governing Board shall govern the Charter School's operations. The Governing Board shall be responsible for establishing, by resolution, policies and procedures for the administration, operation and governance of the Charter School including, without limitation, the ratification of the acts of the Charter School administrators (the "Administration") and the performance of any and all other acts required to be performed by the Governing Board by state or federal statute and/or the Charter Contract entered into by the Charter School and the governmental body sponsoring the Charter School (the "Sponsoring Board") pursuant to Hawai'i Charter School Law,

Section 7.4 – Expressed Limitations on Power to Act:

The Governing Board shall preserve the nonprofit status of the Charter School by the observance of prudent fiscal and monetary controls herein set forth. The Charter School, acting by and through the Governing Board, shall not:

- (a) Incur debt on behalf of the School (state entity)
- (b) Pay any compensation in excess of a reasonable allowance for salaries or other compensation for personal services that are actually rendered;
- (c) Make any part of its services available on a preferential basis;

Section 7.5 – Manner of Acting:

- (a) Except as otherwise provided by these By-laws, at all meetings of the Governing Board, each member of the Governing Board, present in person or telephonically, shall have one vote.
- (b) Except as otherwise provided by statute, the Charter Contract, or these By-laws, the action of a majority of the members of the Governing Board present at any meeting at which a quorum is present shall be the act of the Governing Board. Any act authorized, in writing, by all of the members of the Governing Board entitled to vote thereon and filed with the minutes of the

Charter School shall be the act of the Governing Board with the same force and effect as if the same had been passed by unanimous vote at a duly called meeting of the Governing Board.

Section 7.6 – Vacancies:

- (a) Any vacancy in the Governing Board occurring by reason of a duly authorized determination and vote of the Board of Directors to increase the number of members of the Governing Board, shall be filled by a majority vote of the votes cast at a regular or special meeting by the Board of Directors, present in person or telephonically, that are entitled to vote in the election.
- (b) Vacancies occurring by reason of the death, resignation, disqualification, removal, or any inability to act of any member of the Governing Board, or otherwise, shall be filled by a majority vote of the votes cast at a regular or special meeting by the Board of Directors, present in person or telephonically, that are entitled to vote in the election, as a means to fill the unexpired portion of the term of any such vacancy.
- (c) In an election where the number of Directors qualified to vote is less than three (3) in number, the unexpired portion of any term shall be filled by a vote of a majority of the remaining Directors, though less than any specified quorum, at any regular or special meeting of the Board of Directors called for that purpose.

<u>Section 7.7 – Resignation</u>:

Any member of the Governing Board may resign at any time by giving written notice to the Board of Directors and either the Chairman of the Governing Board or the Secretary of the Charter School. Unless otherwise specified in such written notice, such resignation shall take effect upon receipt of such notice by the Board of Directors or such officer, and the acceptance of such resignation shall not be necessary to make it effective.

Section 7.8 – Removal:

Any member of the Governing Board may be removed from the Governing Board with or without cause at any time by a resolution and vote of a two-thirds (2/3) of the Board of Directors entitled to vote who are present in person, or telephonically, cast at a regular meeting or special meeting convened for that purpose.

Section 7.9 – Salary:

No stated salary shall be paid to members of the Governing Board, as such, for their services; however nothing herein contained shall be construed or interpreted to prevent any person serving as a member of the Governing Board of the Charter School from also serving as an officer or employee of the Charter School and receiving a salary or other compensation for that position.

Section 7.10 – Contracts:

- (a) No contract or other transaction between the Charter School and any other Charter School shall be impaired, affected, and/or invalidated nor shall any Governing Board member be liable in any way by reason of the fact that any one or more of the Governing Board members of the Charter School may be interested in any such other Charter School or may serve as a director or officer of any such other Charter School(s), provided that such other interests or involvements with such other Charter School(s) and/or other relevant material facts are disclosed in writing to the Board of Directors and to the Governing Board, including, without limitation, the nature of such Governing Board member's involvement with such other Charter School(s), including, without limitation, such Governing Board member's ability to influence the action of such other Charter School(s), and any tangible or intangible benefit or profit that may accrue to such Governing Board member as a result of any contract or transaction between the Charter School and any other Charter School(s). In addition, the contract or transaction must be fair and reasonable to the Charter School when it is authorized, approved, and ratified in accordance with the following paragraph.
- (b) Any Governing Board member, personally and individually, may be a party to or may be interested in any contract or transaction of this Charter School, and no Governing Board member shall be liable in any way by reason of such interest, provided that the Governing Board member discloses the interest or makes the interest known to the Board of Directors and the Governing Board, and the Board of Directors and Governing Board authorize, approve, or ratify such contract or transaction by the vote (not counting the vote of any such Governing Board member) of a majority of a quorum, and notwithstanding the presence of any such Governing Board member at the meeting at which such action is taken. Although the interested Governing Board member cannot vote, the Governing Board member may be counted in determining the presence of a quorum at the meeting. This Section shall not be construed to impair or invalidate or in any way affect any contract or other transaction which would be otherwise valid under the law (common, statutory, or otherwise) applicable thereto.

Section 7.11 – Conflicts of Interest:

- (a) The Governing Board shall adopt a conflict of interest policy ("Conflict of Interest policy") to be followed by the members of the Governing Board in executing their duties, and in lieu of any formal policy shall be bound by the provisions in this section.
- (b) The Conflict of Interest Policy must provide for the disclosure of any duality of interest or possible conflict of interest on the part of any Governing Board Member and such duality of interest or possible conflict must be made a part of the record of the Charter School either through an annual procedure or when the interest becomes a matter requiring Governing Board action and then recorded in the appropriate minutes wherein an action related to this issue is taken.
- (c) No Governing Board member having a duality of interest or possible conflict of interest shall vote or use his/her personal influence on the issue being decided however, the Governing Board member may participate in the information gathering and answer appropriate questions related to the issue. The minutes of any meeting where a conflict is present should reflect:

- 1. That a disclosure of the conflict was made;
- 2. That the Governing Board member with the conflict abstained from voting; and
- 3. Any other relevant factors necessary.
- (d) All Governing Board members shall be informed and advised of the Conflict of Interest Policy prior to entering or assuming the duties of his/her office.
- (e) The Governing Board shall be allowed to rely on statements and opinions of the Charter School's legal counsel, accountants, and other experts in making decisions related to the fairness or reasonableness of any transactions where duality of interests exist.

Section 7.12 – Committees:

The Governing Board, with authorization from the Board of Directors as prescribed herein, by resolution adopted by a majority of the entire Governing Board present at a duly-authorized meeting, may from time to time designate from among its members an executive committee, and may also designate from among its members and non-members such other committees as the Governing Board may deem desirable, each consisting of three (3) or more Governing Board members, with such powers and authority (to the extent permitted by law) as may be provided in such a resolution. Each such committee shall serve at the pleasure of the Governing Board.

ARTICLE VIII - MEETINGS OF THE GOVERNING BOARD

Section 8.1 –Monthly Meetings:

The Governing Board may convene and hold monthly meetings for the purposes of transacting approval and conducting the appropriate monitoring of the Charter School and its functions.

<u>Section 8.2 – Special Meetings:</u>

Special meetings of the Governing Board may be called at any time by the written request of two (2) or more of the Governing Board members, the Board of Directors, the Chair of the Charter School, the Chairman or Secretary of the Governing Board, or as otherwise required under the provisions of appropriate laws.

<u>Section 8.3 – Place of Meetings</u>:

All meetings of the Governing Board shall be held at the principal office of the Charter School, or at such other places as shall be designated in the notice or waiver of notice of such a meeting or meetings.

<u>Section 8.5 – Notice of Meetings:</u>

(a) Notice of all meetings shall specifically set forth an agenda for said meeting. This notice and agenda must comply with the Hawai'i Open Meeting laws.

- (b) Except as otherwise provided by statute, written notice of each meeting of the Governing Board, stating such time when and place where it is to be held, shall be served either personally, by mail, by E-mail, or fax not less than Twenty-four (24) hours before the meeting upon all members of the Board of Directors and Governing Board unless otherwise specified by statute. Notice of a special meeting shall also state the purpose or purposes for which the meeting is called, and shall indicate that it is being issued by, or at the direction of, the Governing Board member(s) or officer(s) calling the meeting. If mailed, e-mailed, or faxed, such notice shall be directed to each Director and Governing Board member at his address as it appears on the records of the Charter School, unless the Director or Governing Board member shall have previously filed with the Secretary a written request that notices intended for that Director or Governing Board member be also mailed to some other address, in which case it shall be mailed to the address designated in such request.
- (c) Notice is deemed to have been received upon the date that the letter is mailed or the date that the fax is issued.
- (d) Notice of any regular or special meeting shall not be required to be given to any Director or Governing Board member who shall attend such a meeting without protesting prior thereto or at its commencement the lack of notice to him, or who submits a signed waiver of notice, whether before or after the meeting. Notice of any adjourned meeting shall not be required to be given.
- (e) Meetings may be conducted telephonically so long as all relevant parties are informed of the need or existence of the non-personal attendance.

Section 8.6 – Chairman of Meetings:

The Chair of the Charter School, or his/her designee, shall serve and preside as Chairman for such meetings or adjournments.

Section 8.7 – Quorum:

- (a) Except as otherwise provided herein, or by statute, at all meetings of the Governing Board, the presence at the commencement of such meetings of the Governing Board members, in person which attains a majority of the total number of the Governing Board members entitled to vote, shall be necessary and sufficient to constitute a quorum for the transaction of any business. The withdrawal of any Governing Board member after the commencement of any meeting shall have no effect on the existence of a quorum or any action, after a quorum has been established at such a meeting.
- (b) Despite the absence of a quorum at any annual meeting or special meeting of the Governing Board, the Governing Board members, by a majority of the votes cast by the members entitled to vote thereon, may adjourn the meeting. At any adjourned meeting at which a quorum is present, any business may be transacted at the meeting as originally called.

Section 8.8 – Voting:

- (a) Except as otherwise provided by statute, the school's charter contract, or By-laws, any corporate action, other than the election or removal of officers, taken by a vote of the Governing Board members, shall be authorized by a majority of the votes cast at each meeting.
- (b) Each Governing Board member is entitled to one vote which may be cast in person or telephonically.

Section 8.9 – Conduct of Meeting:

A duly adopted agenda for each meeting shall be prepared by the Chairman or Secretary of the Governing Board, or other designated Governing Board member. The meeting shall be conducted in accordance with the agenda. The Chairman of the Governing Board or any facilitator/Chairman of the meeting shall have the right to limit discussion on any particular item and shall have the right to provide time limits for any party wishing to speak on any appropriate point. Meetings shall be conducted in accordance with respect and harmony at all times, and to maintain a positive yet responsive environment.

ARTICLE IX - OFFICERS

Section 9.1 - Name, Numbers, Election and Term of Office:

- (a) The officers of the Charter School shall consist of the Chair, Vice Chair, Secretary, Treasurer, and any such other officers as the Board may from time to time deem acceptable. Any two or more offices may be held by the same person.
- (b) All the officers of the Charter School shall be elected by the Board of Directors at the regular annual meeting of the Board of Directors or at any other meeting established for this purpose.
- (c) Each officer shall hold office until the annual meeting of the Board next succeeding his election, and until his successor shall have been elected and qualified, or until his/her death, resignation, or removal.

Section 9.2 - Resignation:

Any officer may resign at any time by giving written notice of such resignation to the Board, the Chair, or the Secretary of the Charter School. Unless it is otherwise specified in such written notice, such resignation shall take effect upon receipt thereof by the Board or by such officer, and the acceptance of such resignation shall not be necessary to make it effective.

Section 9.3 - Removal:

Any officer may be removed from office with or without cause at any time by a resolution and vote of two-thirds (2/3) of the Board of Directors entitled to vote who are present in person, or telephonically, cast at a regular meeting or special meeting convened for that purpose.

Section 9.4 - Vacancies:

A vacancy in any office by reason of death, resignation, the inability to act, or any other cause whatsoever, may at any time be filled for the unexpired portion of the term by the Board of Directors with a two-thirds (2/3) vote of the votes cast by the Board members at a special meeting of the Board of Directors called for that purpose.

Section 9.5 – Powers and Duties of the Chair:

- (a) The Chair shall be the Chief Executive Officer ("CEO") of the Charter School, subject to the control of the Board, and shall have general charge of the Charter School's business, and supervision of its affairs. The Chair shall keep the Board of Directors fully informed and freely consult with them in regard to the business of the Charter School and make due reports to them as necessary.
- (b) In addition to the powers and duties elsewhere provided in these By-laws, the Chair shall sign, when duly authorized to do so, all contracts, orders, deeds, liens, guarantees, licenses and other instruments of a special nature.
- (c) Subject to any direction of the Board of Directors, the Chair shall have such other powers and duties as are incident to said office and not inconsistent with these By-laws, or as may at any time be assigned by the Board of Directors.

Section 9.6 – Powers and Duties of the Vice Chair:

- (a) The Vice Chair(s), if any, shall familiarize themselves with the affairs of the Charter School, and in the event of the disability or absence of the Chair from any place in which the business in hand is to be done, the Vice Chair(s), in the order designated by the Board of Directors, shall have all the powers and perform all the duties of the Chair.
- (b) The Vice Chair(s) shall have such other powers and duties as may at any time be assigned to them by the Board.

Section 9.7 – Powers and Duties of the Treasurer:

- (a) The Treasurer, subject to the control of the Board of Directors and together with the Chair, shall have general supervisory authority over the Charter School's finances.
- (b) Duties of the Treasurer include the care of, and responsibility for, all moneys, securities, evidences of value and corporate instruments of the Charter School, and supervision of the officers and any other persons authorized to deposit, handle, and disburse any funds, ensuring retention of information as to whether all deposited have been duly made and all expenditures duly authorized and evidenced by proper receipts and vouchers. The Treasurer shall cause full and accurate books to be kept, showing the transactions of the Charter School, its accounts,

assets, liabilities, and financial condition, which shall at all times be open to the inspection of the Board, and such statements and reports as are required of him/her by law.

- (c) Subject to the Board, the Treasurer shall have such other powers and duties as are incident to the office and not inconsistent with these By-laws, or as may at any time be assigned to the Treasurer by the Board.
- (d) This position may be combined with the position of Secretary.

<u>Section 9.8 – Powers and Duties of the Secretary:</u>

- (a) The Secretary shall cause to be entered in the minute books the minutes of all meetings of all committees and of the Board; shall have charge of all books and papers pertaining to said office; and shall be responsible for the giving of all notices and for the making of all statements and reports required of the Charter School or of the Secretary by law. The Secretary shall attest by signature to all instruments duly authorized and requiring the same.
- (b) The Secretary shall perform such other duties as are incident to the office, and shall have such other powers and duties, in addition to any powers and duties provided elsewhere in these By-laws, as may be at any time assigned by the Board.
- (c) This position may be combined with the Treasurer.

Section 9.6 - Sureties and Bonds:

In case the Board shall so require, any officer, employee, or agent of the Charter School shall execute to the Charter School a bond in such sum, and with such surety or sureties as the Board may direct, conditioned upon the very faithful performance of his duties to the Charter School. including responsibility for negligence and for the accounting for all property, funds, or securities of the Charter School which may come into his hands. Such requirements herein set forth shall be in accord with all appropriate laws.

ARTICLE XI - SEAL

The Board's seal, if any, shall be in such form as shall be approved from time to time by the Board of Directors.

ARTICLE XII - FISCAL YEAR

The fiscal year of the Charter School shall be fixed by the Board from time to time, subject to applicable law. The initial fiscal year shall end on December 31.

ARTICLE XIII – AMENDMENTS TO BY-LAWS

Section 13.1 - Power of the Board of Directors:

The Board of Directors shall have the power to amend the By-laws, except as provided herein, at any duly called meeting for that purpose. No amendment of the Board may adversely affect the Charter School's purpose, or amend any provisions dealing with the Charter School's charter status under Hawaii state law.

Section 13.2 - Limitations on the Board:

The Board of Directors shall have no power to change any provision of the By-laws regarding the election, term of office, or removal of Directors or the filling of vacancies without the unanimous consent of all members of the Board of Directors.

Section 13.3 - Voting:

- (a) Except as otherwise provided by in this Article, statute, School's Charter Contract, and Bylaws, all other By-laws of the Charter School shall be subject to alteration or repeal, and new Bylaws may be approved, by a two-thirds (2/3) vote of the votes cast at such a meeting to be held by the Board of Directors, present in person telephonically, or by electronic conference that are so entitled to vote, provided that the notice or waiver of such notice of the meeting shall have summarized or set forth in full therein, the proposed change.
- (b) Entitlement to vote in any such meeting to adopt, alter, repeal, or amend such By-laws shall be limited to Directors that have served at least six months prior to any such meeting.
- (c) Any individual who is personally liable for the Charter School or the Charter School (by contract or otherwise) or who is designated by the Charter Contract as the "Charter Representative" shall have the right to veto any change in these By-laws which they feel in their sole discretion is contrary to the goals and purposes of the Charter School and the Charter School.

ARTICLE IVX - INDEMNITY

(a) Any person made a party to any action, suit, or proceeding, by reason of the fact that they, their testator or intestate representative is or was a Director, Board member, officer, or employee of the Charter School, or of any Charter School in which they served as such at the request of the Charter School, shall be indemnified by the Charter School against reasonable expenses, including such attorney's fees actually and necessarily incurred by them in connection with the defense of such action, suit, or proceeding, or in connection with any appeal therein, except in relation to matters as to which it shall be adjudged in such action, suit, or proceeding, or in connection with any appeal therein that such officer, Director, Governing Board member or employee is liable for gross negligence or misconduct in the performance of their duties.

- (b) The foregoing right of indemnification shall not be deemed exclusive of any other rights to which any officer, Director, Governing Board member, or employee may be entitled apart from the very provisions of this section.
- (c) The amount of indemnity to which any officer, Director, or Governing Board member may be entitled may be fixed by the Board, except that in any case where there is no such disinterested majority of the Board available, at which time the indemnity shall apply to all officers, directors, or governing board members who are not liable for gross negligence or misconduct in the performance of their duties.
- (d) The foregoing right of indemnification shall not apply in any circumstance where the indemnification would adversely affect the tax-exempt status of the Charter School, as determined by the Board of Directors after consultation with legal counsel.

ARTICLE XV - STATUS

This Charter School shall not carry on propaganda, or otherwise attempt to influence legislation, nor shall any of its funds be used to support or oppose any political issue or candidate or do any other acts which could endanger its qualification as a Non-Profit Charter School in the State of Hawai'i.

ARTICLE XVI - PROHIBITION AGAINST PRIVATE INUREMENT

Section 16.1 – Net Earnings:

No Director, Governing Board member, officer, employee of the Charter School, member of a committee of the Charter School, or any other private individual shall receive at any time any of the net earnings or pecuniary profit of the Charter School, except that the Charter School can pay reasonable compensation for services rendered; provided, however, that compensation shall not be paid if such payment would constitute an unreasonable act of self-dealing.

Section 16.2 – Dissolution:

No Director, Governing Board member, officer, employee of the Charter School, member of a committee of the Charter School, or any other private individual shall be entitled to share in the distribution of any of the corporate assets in the event of the Charter School's dissolution. All Directors shall be deemed to have expressly consented and agreed that upon such dissolution or winding up of the Charter School's affairs, whether voluntary or involuntary, all of the Charter School's assets remaining after all debts have been satisfied shall be distributed exclusively to other tax-exempt Charter Schools operating with similar purposes as the Charter School's purposes provided in the Charter Contract

ARTICLE XVII – MEMBERSHIP

The Charter School shall not have members nor shall the Charter School be authorized to issue memberships.

ARTICLE XVIII - NONDISCRIMINATORY POLICY

The Charter School, in its operation as a public charter school (the "Charter School") that is non-sectarian and publicly funded, shall admit students of any gender, religion, race, color, national and ethnic origin to all the rights, privileges, programs, and activities generally accorded or made available to students at the Charter School. The Charter School shall not discriminate on the basis of gender, religion, race, color, national and ethnic origin in the Charter School's administration of its educational policies, admissions policies, or Charter School administered programs.

ARTICLE IXX - FINANCES AND BANKING

All of the Charter School's funds and money shall be deposited, handled, and disbursed, and all bills, notes, checks, and like obligations and endorsements, for deposit or collection, shall be signed by the Chair or the Treasurer or such other officers as the Board of Directors shall from time to time designate. Any officer or person performing said functions shall account therefore to the Charter School and to the Board of Directors or as they may require. All money, funds, bills, notes, checks, and other negotiable instruments coming to the Charter School shall be collected and promptly deposited in the name of the Charter School in such depositories as the Board shall select.

ARTICLE XX – SPECIAL CORPORATE ACTS

<u>Section 20.1 – Order for Payment of Money:</u>

All checks, drafts, notes, bonds, bills of exchange and orders for payment of money of the Charter School from its Charter School operations shall be signed by such officer or officers or such other person or persons as the Board of Directors may from time to time designate.

Section 20.2 – Executing Contracts and Conveyances:

The Board may, in any instance, designate the officer and/or agent who shall have the authority to execute any contract, conveyance, mortgage or other instrument on the Charter School's behalf, or may ratify or confirm any such execution. When the execution of any instrument has been authorized without specifying the executing officers or agents, the Chair, a Vice Chair, the Secretary or the Treasurer may execute the same in the name and on behalf of the Charter School and may affix the corporate seal, if necessary, thereto.

CERTIFICATION OF ADOPTION OF BYLAWS

I,	, as Secretary of Accelerated Learning Laboratory-
Hawaii, a Hawai'i nonprofit Charter S	chool, hereby certify that the foregoing constitutes this
Charter School's by-laws as adopted a	and in full force and effect on the day of
-	, Secretary

Statement of Assurances

Please print this form, and initial each item in the box provided. The form must be SIGNED by an authorized representative of the Applicant Governing Board.

The Applicant Governing Board agrees to comply with all of the following provisions, specifically, if approved the governing board and school:

will operate in compliance with all applicable state and federal laws, including, but not limited to, HRS Chapter 302D;

will operate as a public, nonsectarian, non-religious public school with control of instruction vested in the governing board of the school under the general supervision of the Commission and in compliance with the Charter Contract and HRS Chapter 302D;

will operate in accordance with and comply with all of the requirements of Master Collective Bargaining Agreements, pursuant to HRS Chapter 89, and negotiate any supplemental agreements necessary;

will, for the life of the Charter Contract, participate in all data reporting and evaluation activities as requested by the U.S. Department of Education and the Hawaii Department of Education, including participation in any federal or state funded charter school evaluations or studies, final grant report documentation, and financial statements;

will provide special education services for students as provided in Title 49, Chapter 10, and

Section 504 of the Rehabilitation Act of 1973, Title II of the Americans with Disabilities Act of 1990, and Part B of the Individuals with Disabilities Education Act;

will ensure that a student's records and, if applicable, a student's individualized education program, as defined in Section 602(11) of the Individuals with Disabilities Act, will follow the student, in accordance with applicable law (P.L. 107-110, section 5208);

will comply with all provisions of Elementary and Secondary Education Act, including, but not limited to, provisions on school prayer, the Boy Scouts of America Equal Access Act, the Armed Forces Recruiter Access to Students and Student Recruiting Information, the Unsafe School Choice Option, the Family Educational Rights and Privacy Act, and assessments [P.L. 107-110];

will follow all federal and state laws and constitutional provisions prohibiting discrimination on the basis of disability, race, creed, color, national origin, religion, ancestry, or need for special education services, including, but not limited to, the Age Discrimination Act of 1975, Title VI of the Civil Rights Act of 1964, Title IX of the Education Amendments of 1972, Section 504 of the Rehabilitation Act of 1973, and Part B of the Individuals with Disabilities Education Act;

will adhere to all provisions of federal law relating to students who are limited English proficient, including Title VI of the Civil Rights Act of 1964 and the Equal Educational Opportunities Act of 1974, that are applicable to it;

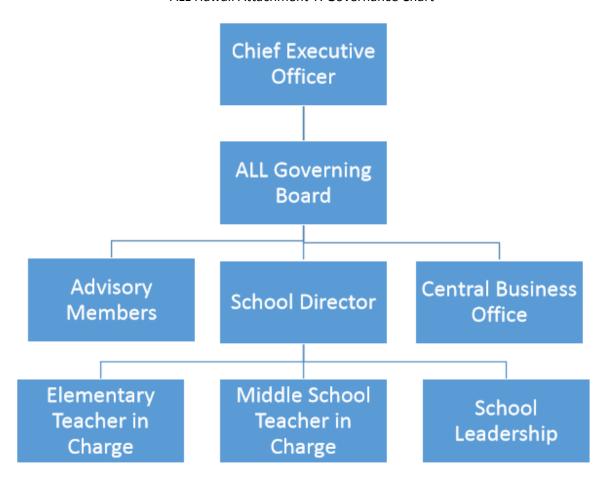
will ensure equitable program participation, as required under Section 427 of the General Education Provision Act;

will follow any federal and state court orders in place in the local school district;

Lwill comply with federal and state applicable health and safety standards;

Ø₽	will read, understand, and agree to comply with all parts of the Charter Contract, including, but not limited to, the performance standards and requirements established by the Charter Contract and attached performance framework.
ØV.	will prepare and publish an annual financial report that encompasses all funds and includes the audited financial statements of the charter school; and
No.	will maintain its accounts and records in accordance with generally accepted accounting principles;
W LAN	will operate on a July 1 to June 30 fiscal year and will adopt and operate under an annual budget for such fiscal year;
AM	will employ individuals to teach who hold a license to teach in a public school in Hawaii or meet the minimum requirements for licensure as defined by the State Board of Education;
77 05	will comply with all federal and state audit requirements and ensure that arrangements have been made to finance those mandatory audits;
E.	will permit the Commission to audit, review, and inspect the operator's activities, books, documents, papers, and other records;

ALL Hawaii Attachment T: Governance Chart



Board Member Information

To be completed individually by each Applicant Governing Board member.

All forms must be signed by hand.

Serving on a public charter school governing board is a position of public trust and fiduciary responsibility. As a governing board member of a public school, you are responsible for ensuring the quality of the school's plans, competent stewardship of public funds, and the school's fulfillment of its public obligations and all terms of its Charter Contract.

As part of the application for a new charter school, the Commission requests that each prospective governing board member respond individually to this questionnaire. Where narrative responses are required, brief responses are sufficient.

The purpose of this questionnaire is twofold: 1) to give application reviewers a clearer introduction to the team behind each school proposal in advance of the applicant interview; and 2) to encourage governing board members to reflect individually, as well as collectively, on their common mission, purposes, and obligations at the earliest stage of school development. Please add the full name of your school to the footer of this document so that it appears on all pages.

	Background
1.	Name of charter school on whose governing board you intend to serve: Accelerated Learning Laboratory-Hawaii
2.	Contact information: Name: David Jones Phone: E-mail:
3.	Describe your educational and employment history. No narrative response is required if a resume and professional biography are attached. Resume and professional bio are attached to this form.
4.	Indicate whether you currently or have previously served on a board of a school district, another charter school, a non-public school, or any nonprofit organization. Does not apply to me X Yes
5,	Why do you wish to serve on the governing board of the proposed charter school? Because I am convinced that it can do a significant amount of social good including by creating a model with which other educational institutions can benefit from.
6,	What is your understanding of the appropriate role of a public charter school governing board member? The purposes to oversee that the decisions correspond with the vision and mission statement without managing day-to-day activities. To oversee general decisions and operations and support the mission and the vision of the public charter school. As well as ensure financial stability of the school. And to ensure that the organization complies to state and federal laws.

- Describe any previous experience you have that is relevant to serving on the charter school's governing board (e.g., other board service). If you have not had previous experience of this nature, explain why you have the capability to be an effective board member.
 - I have served on a long track of practical experience in the field of education including serving on numerous boards, designing curriculum and training teachers.
- Describe the specific knowledge and experience that you would bring to the governing board.
 Systems management, fiscal accountability, and community interface, in addition to extensive knowledge in the practical application of theoretical pedagogical constructs.

School Mission and Plan

1. What is your understanding of the school's mission and guiding beliefs?

To first serve its students and then to serve the public's interests.

What is your understanding of the school's proposed academic plan?

It is a refinement of an engineered educational system that has demonstrated high effectiveness across a broad range of socioeconomic levels.

3. What do you believe to be the characteristics of a successful school?

Consensus building within the school population, with the general community the school is located in, and with political and regulatory agencies.

4. How will you know that the school is succeeding or is not succeeding in its mission?

Differentials between where the students began and where they are in terms of academic achievement, and their continual growth in maturity more generally, stakeholder enthusiasm, and recognition by the general public and the Department of Education

Governance

Describe the role that the governing board will play in the school's operation.

Oversight, philosophical guidance, assistance in interfacing with the public, and financial support.

How will you know if the school is successful at the end of the first year of operation?

Financial solvency, high student academic growth rates across demographic groups.

[ALL-Hawaii]

Attachment U - Page 2

3.	How will you know at the end of five years if the school is successful?
	Community recognition and support, positive impact on academic achievement by all students, and financial solvency.
4.	What specific steps do you think the governing board will need to take to ensure that the school is successful?
	Community outreach and establishment of a local advisory board.
5.	How would you handle a situation in which you believe one or more members of the governing board were acting unethically or not in the best interests of the school?
	First investigate to the point of becoming fully informed then take internal actions with the intent of resolving the problem. If unsuccessful, take all legally required and morally necessary steps to protect the integrity of the school.
	Disclosures
1.	Indicate whether you or your spouse knows the other prospective governing board members for the proposed school. If so, please indicate the precise nature of your relationship. I/we do not know these individuals Yes I have a professional, working relationship with Olga, Jennifer, and Marcus. Serel is a long-term acquaintance/friend.
2.	Indicate whether you or your spouse knows any person who is, or has been in the last two years, a school employee. If so, indicate the precise nature of your relationship. I/we do not know any such employees X Yes
	I am currently the CEO of ALL Tucson.
3.	Indicate whether you or your spouse knows anyone who is doing, or plans to do, business with the charter school (whether as an individual or as a director, officer, employee, or agent of an entity). If so, indicate and describe the precise nature of your relationship and the nature of the business that such person or entity is transacting or will be transacting with the school. I/we do not know any such persons Yes
	As part of the Applicant Board, I have spoken with Peter Kwan, one of the community members that has been vital to our efforts to gain community support in the Kapolei area.
4,	Indicate if you, your spouse, or other immediate family members anticipate conducting, or are conducting, any business with the school. If so, indicate the precise nature of the business that is being or will be conducted, I/we do not anticipate conducting any such business Yes
	At this time there has been no specific or general discussion of providing anything except donated services by any specific individual or organization.

5.	If the school intends to contract with an education service provider or management organization, indicate whether you or your spouse knows any employees, officers, owners, directors, or agents of that provider. If the answer is in the affirmative, please describe any such relationship.
	Not applicable because the school does not intend to contact with an education service provider or school
	management organization.
	☐ I/we do not know any such persons ☐ Yes
6,	If the school contracts with an education service provider, please indicate whether you, your spouse, or other immediate family members have a direct or indirect ownership, employment, contractual, or management interest in the provider. For any interest indicated, provide a detailed description. N/A. I/we have no such interest Yes
7.	If the school plans to contract with an education service provider, indicate if you, your spouse, or other immediate family member anticipate conducting, or are conducting, any business with the provider. If so, indicate the precise nature of the business that is being or will be conducted.
	N/A I/we or my family do not anticipate conducting any such business Yes
8.	Indicate whether you, your spouse, or other immediate family members are a director, officer, employee, partner, or member of, or are otherwise associated with, any organization that is partnering with the charter school. To the extent you have provided this information in response to prior items, you may so indicate. Does not apply to me, my spouse or family X Yes
	Yes, I am the CEO of ALL Tucson, which will have a sister-school relationship with ALL Hawaii, which will be mutually supportive and beneficial to both parties.
9.	Indicate any potential ethical or legal conflicts of interests that would or are likely to exist should you serve on the school's governing board. None Yes
	Unknown, however none are anticipated. If some such conflict of interest should arise, I would immediately recuse myself from participating in any such discussions or decisions.
	Certification
7.	D 11 T
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	information I am providing to the State Public Charter School Commission as a prospective terning board member is true and correct in every respect.
80	erning board member is true and correct in every respect.
	02/12/20/6
Sig	nature Date

David Lee Jones

Brief Resumé



Ph.D. Candidate (Educational Psychology / Measurement & Methodology) – not completed: University of Arizona Post-Baccalaureate Program (Teacher Certification) – Arizona Teacher Certification – Standard K-8: University of Arizona

MFA (Research Assistantship; Teaching Assistantship; Alumni Grants): University of Arizona

BA: Utah State University

Professional Overview

Experience in The Field of Education

Chief Executive Officer; Headmaster; Charter Holder (K-12)

Accelerated Elementary and Secondary Schools: 5245 N. Camino de Oeste, Tucson, Arizona

Accelerated Learning Laboratory Elementary School Accelerated Learning Laboratory Secondary School

In-service Provider

Instructor: Taught post-graduate Career Ladder Classes; open district wide

Provided: In situ demonstrational modeling and instructional coaching; project schools Directed: In-service project design and teacher training on campus; project schools

Tucson Unified School District: Tucson, AZ

Hayden-Winkleman Unified School District: Gila County, AZ

Marana Unified School District; Marana, AZ

Project Director/ Pedagogy and Curriculum Development

Cognitive Learning Project (project schools and districts):

Accelerated Elementary and Secondary Schools: Tucson, AZ Tucson Unified School District (multiple school sites): Tucson, AZ

Castle Hill (one site private school): Tucson, AZ Satori (one site private school for the gifted): Tucson, AZ

Lushan International Experimental School (one site public/private K-12 school): Hunan Province, China

Shazitang Primary School (one site public/private school): Hunan Province, China

Adopted K-5 Cognitive Learning Math Curriculum (author, math text book series)

Tucson Unified School District: Tucson, AZ

Consultant; Educational Software Design and Development: Mindplay / Methods and Solutions: Tucson, Arizona

Significant contributor to software titles including: Fraction-Oids; Fraction-Oids II; Fraction-Oids III; Jo-Jo's Reading Rocket; Jo-Jo's Reading River; Jo-Jo's Reading Circus; Jo-Jo's Reading River; Jo-Jo's Reading Castle, Ace Reporter, etc.

Interim Principal / consultant: Systems Evaluator, Teacher Evaluations; Instructional Design and Implementation

Tucson Urban League (middle and high school): 2305 South Park, Tucson, AZ

Director of Education

Tucson Museum of Art School: Tucson, AZ

Instructor

University of Arizona: Tucson, AZ Pima Community College: Tucson, AZ Tucson Museum of Art School: Tucson, AZ

Additional Professional Experience

Editor-in-Chief

Arizona Artist (Bimonthly Publication); Tucson, AZ. Exclusive Interviews: Agnes Martin, Helen Frankenthaler, John Perrault,

Consultant: miscellaneous services

Southwestern Film Consortium: Tucson, AZ

Old Pueblo Museum: Tucson, AZ.

Chairperson

Tucson Visiting Artist Consortium: Cofounder/ Board of Directors

Evan Macham Recall Committee (Tucson Chapter)/ Board of Directors

Caucus Chairperson; Delegate Selection Chairperson; Arizona Legislative District 11

Committee Member / Board Member

Arizona Commission on the Arts and Humanities Awards Committee

Executive Agenda Planning Committeeman

Tucson Commission on the Arts and Culture: committee member

Coalition for Human Services Tucson, AZ: committee member

Precinct Committeeman

The Coalition for Technology in Education of Southwestern Arizona: Board of Directors

Accelerated Elementary and Secondary Schools: Board of Directors

Institutional Grants / RFP & Independently Initiated: Author / Often Project Director

Federal: Comprehensive Employment and Training Act, project director

National Endowment for the Arts: Many, project director

Arizona Commission on the Arts: Many, project director

Panel Member / Presenter / Invited Speaker

Multiple Intelligence Conferences (3)

Association of University Women Colloquium

Arts Education Colloquium

AAAE Conference

Artist-in-Residence: National Endowment for the Arts: Arizona

Property Development

Eaglesmere Subdivision; Partner: Tucson, AZ.

Design Consultants, Principal Partner: Tueson, AZ

Board Member Information

To be completed individually by each Applicant Governing Board member.

All forms must be signed by hand.

Serving on a public charter school governing board is a position of public trust and fiduciary responsibility. As a governing board member of a public school, you are responsible for ensuring the quality of the school's plans, competent stewardship of public funds, and the school's fulfillment of its public obligations and all terms of its Charter Contract.

As part of the application for a new charter school, the Commission requests that each prospective governing board member respond individually to this questionnaire. Where narrative responses are required, brief responses are sufficient.

Th	e purpose of this questionnaire is twofold: 1) to give application reviewers a clearer introduction to
	e team behind each school proposal in advance of the applicant interview; and 2) to encourage
	verning board members to reflect individually, as well as collectively, on their common mission,
_	
	rposes, and obligations at the earliest stage of school development. Please add the full name of your
SCI	nool to the footer of this document so that it appears on all pages.
	Background
1.	Name of charter school on whose governing board you intend to serve:
	Accelerated Learning Laboratory-Hawaii
2.	Contact information:
	Name: Marcus Calhoun-Lopez
	Phone:
	E-mail:
3.	Describe your educational and employment history. No narrative response is required if a resume and
3	professional biography are attached.
	Resume and professional bio are attached to this form.
4.	Indicate whether you currently or have previously served on a board of a school district, another charter
	school, a non-public school, or any nonprofit organization.
	☑ Does not apply to me ☐ Yes
5.	Why do you wish to serve on the governing board of the proposed charter school?
	Effective education is the bedrock upon which economic, scientific, and cultural success is
	built. Any opportunity to contribute to such a worthwhile endeavor is a privilege.
	Santanini at taninini ta sanini sa sanini sa
6.	What is your understanding of the appropriate role of a public charter school governing board member?
	The role of a public charter school governing board member is to provide regular direction,
	guidance, and oversight to the institution.
	guidance, and oversight to the institution.
7.	Describe any previous experience you have that is relevant to serving on the charter school's governing board
	(e.g., other board service). If you have not had previous experience of this nature, explain why you have the
	capability to be an effective board member.
	I have not served on any other board, but I have worked on numerous advisory committees
	at both the college and consider school level 1 belond direct advectional valing for

[ALL-Hawaii]

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- individual students, classes, and departments.
- 8. Describe the specific knowledge and experience that you would bring to the governing board. Both of my parents are in the field of education. It was commitment to education that lifted my father and his sisters into the middle class. I joined the "family business" in sixth grade as a tutor. Since then, I have never been far from the classroom including seven years teaching secondary students (4th-12th grade). I have advanced degrees and deep knowledge in mathematics, physics, and computer science. I am also the lead developer of MARC, the student grade and record keeping software.

School Mission and Plan

1. What is your understanding of the school's mission and guiding beliefs? Simply put, I believe in the mission statement of our school:

The Accelerated Elementary and Secondary Schools community will demonstrate that children exhibit gifted level performance when a comprehensive curriculum is coupled with pedagogy based on scientifically sound theories of human learning. Our educational model will demonstrate that curricular design and instructional practices are the predominant factors influencing academic performance, rather than ethnicity, social status, economic privilege, or gender. We embrace the tenet that all children exhibit brilliance when their innate talents are nurtured in a challenging, supportive, and civil environment. AESS shall introduce a 21st Century educational model in which student performance exceeds all previous outcomes.

- 2. What is your understanding of the school's proposed academic plan? Our curriculum is developed by its board members, who are experts in their fields. It uses well-established scientific principles of human learning to maximize the efficiency with which students acquire new knowledge. It harnesses the power of group instruction (need-to-know and corralling exercises) without sacrificing the needs of any individual student (students can be on different Expert Trials within the same class). It maximizes motivation by, for example, providing immediate feedback and removing the ceiling effect. The academic plan also incorporates the direct teaching of metacognitive and soft skills, essentially teaching students how to be more effective students.
- 3. What do you believe to be the characteristics of a successful school? A successful school provides a risk-free environment in which all students are succeeding. This is best achieved when a school is dedicated to its educational mission, is financially stable, retains top teaching talent, and has close connections to the community it serves.
- 4. How will you know that the school is succeeding or is not succeeding in its mission? The school is succeeding if the students are succeeding. Some metrics of student success are scores on standardized tests, progress through the curriculum, acceptances into colleges, high scores on Teacher/Student satisfaction surveys, and success in extracurricular activities (e.g. the Science Olympiad).

Governance

- Describe the role that the governing board will play in the school's operation.
 A governing board helps formulate goals for the school. It assists in the design of strategies to achieve those goals. It regularly ensures that adequate progress is being made towards those goals.
- 2. How will you know if the school is successful at the end of the first year of operation? The students should be doing well on summative assessments (e.g. standardized tests). The students should be making adequate progress through the curriculum. Both student and parent satisfaction should be high. We should have both parents and students excited about coming back for a second year.
- 3. How will you know at the end of five years if the school is successful? The student should be excelling on summative assessments (e.g. standardized tests). The students should not only be progressing but accelerating through the curriculum. Parent/Student satisfaction should be high with word-of-mouth encouraging new students to attend the school.
- 4. What specific steps do you think the governing board will need to take to ensure that the school is successful?

 The governing board can ask difficult questions, offer constructive criticism, and propose solutions to problems. If, for example, the number Expert Trials passed per week is too low, we know there is a problem. Not only are the students not gaining the skills they need, but, perhaps worse, they could easily lose motivation. Our online grading system automatically flags such cases, and we can take corrective action before a small problem becomes large.
- 5. How would you handle a situation in which you believe one or more members of the governing board were acting unethically or not in the best interests of the school?
 No institution long endures without trust. Any ethics violation undermines trust and must be taken seriously. If I became aware of such a violation, I would follow the procedures outlined in the Bylaws and Ethics Rules and attempt to resolve the situation in an open and honest manner.

Disclosures

	Disclosures
1.	Indicate whether you or your spouse knows the other prospective governing board members for the proposed school. If so, please indicate the precise nature of your relationship. I/we do not know these individuals Yes
	I have a professional, working relationship with Olga, David, Serei, and Jennifer.
2.	Indicate whether you or your spouse knows any person who is, or has been in the last two years, a school employee. If so, indicate the precise nature of your relationship. I/we do not know any such employees Yes I am an employee of a school, but not ALL-Hawaii. At least one of my coworkers is listed as a potential employee of ALL-Hawaii.
3.	Indicate whether you or your spouse knows anyone who is doing, or plans to do, business with the charter

Sig	gnature Date
	2/12/2016
	e information I am providing to the State Public Charter School Commission as a prospective verning board member is true and correct in every respect.
	Marcus Calheun-Lapez, certify to the best of my knowledge and ability that
	Certification
9.	Indicate any potential ethical or legal conflicts of interests that would or are likely to exist should you serve on the school's governing board. None Yes
	Does not apply to me, my spouse or family Yes At least one of my coworkers is listed as a potential employee of ALL-Hawaii.
8.	Indicate whether you, your spouse, or other immediate family members are a director, officer, employee, partner, or member of, or are otherwise associated with, any organization that is partnering with the charter school. To the extent you have provided this information in response to prior items, you may so indicate.
	N/A I/we or my family do not anticipate conducting any such business Yes
7.	If the school plans to contract with an education service provider, indicate if you, your spouse, or other immediate family member anticipate conducting, or are conducting, any business with the provider. If so, indicate the precise nature of the business that is being or will be conducted.
	Interest in the provider. For any interest indicated, provide a detailed description. N/A. I/we have no such interest Yes
6.	immediate family members have a direct or indirect ownership, employment, contractual, or management
	management organization. I/we do not know any such persons Yes
	the answer is in the affirmative, please describe any such relationship. Not applicable because the school does not intend to contact with an education service provider or school
5.	whether you or your spouse knows any employees, officers, owners, directors, or agents of that provider. If
4.	Indicate if you, your spouse, or other immediate family members anticipate conducting, or are conducting, any business with the school. If so, indicate the precise nature of the business that is being or will be conducted. I/we do not anticipate conducting any such business Yes
	At least one of my coworkers is listed as a potential employee of ALL-Hawaii.
	I/we do not know any such persons Yes
	school (whether as an individual or as a director, officer, employee, or agent of an entity). If so, indicate and describe the precise nature of your relationship and the nature of the business that such person or entity is transacting or will be transacting with the school.

[ALL-Hawaii]

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Marcus Calhoun-Lopez



Education IOWA STATE UNIVERSITY

Ames, IA

Ph.D. in Applied Mathematics in the summer of 2003.

IOWA STATE UNIVERSITY

Ames, IA

M.S. in Applied Mathematics in the summer of 2001.

Minor in physics.

UNIVERSITY OF CHICAGO

Chicago, IL

B.S. in Applied Mathematics in the spring of 1999.

Qualified for B.S. in pure mathematics.

Qualified for B.A. in physics.

Research Experience

JEANSEE CORPORATION

Rome, NY

2008-2009

Contractor at the Rome Air Force Research Lab

UNIVERSITY OF NEW MEXICO

Albuquerque, NM

2006-2008

Graduate Student in Computer Science

UNIVERSITY OF MARYLAND

College Park, MD

2003-2006

VIGRE Postdoctoral Associate

SANDIA NATIONAL LABORATORIES

Albuquerque, NM

Summer of 2002–Spring of 2003

Student Internship Program

IOWA STATE UNIVERSITY

Ames, IA

2001-2003

Ph.D. Thesis:

Numerical Simulations of Hyperbolic Conservation Laws: Incorporating Multi-Resolution Viscosity Methods into the Finite Element Framework

SANDIA NATIONAL LABORATORIES

Albuquerque, NM

Summer of 2001

Student Internship Program at Sandia National Laboratories

IOWA STATE UNIVERSITY

Ames, IA

2000-2001

Master of Science Thesis:

Numerical Simulations of Superconducting Rings

Using a Ginzburg-Landau Model

IOWA STATE UNIVERSITY

Ames, IA

Summer of 1998

Research Experience for Undergraduates

Teaching Experience

ACCELERATED LEARNING LABORATORY

Tucson, AZ

2009 -

Teacher, Head of the STEM Programs, Science Olympiad Coach, Senior Research Project Advisor, College Mentor

SUNY GENESEO

Geneseo, NY

Summer of 2009

Advisor to Summer Research Students

UNIVERSITY OF MARYLAND

College Park, MD

2003-2006

Taught Courses in

- Ordinary Differential Equations
- Elementary Calculus
- Differential Equations for Scientists and Engineers
- Geometry for Computer Graphics
 (A discontinued class until I resurrected it)
- Introduction to Analysis
- Multivariable Calculus, Linear Algebra,
 & Differential Equations (Honors)

IOWA STATE UNIVERSITY

Ames, IA

1999-2002

Teaching Assistant

IOWA STATE UNIVERSITY

Ames, IA

Summer of 2000

Research Experience of Undergraduates Assistant

UNIVERSITY OF CHICAGO

Chicago, IL

1997-1999

Junior Tutor (Calculus Teaching Assistant)

Programming Skills

C, C++, Fortran 77/90, Java, Matlab, OpenMP, MPI, HTML, LATEX, PHP, SQL

Talks and Presentations

- Teacher Inservice Training, Accelerated Learning Laboratory, August 2014, August 2015
- Student Learning Objectives, Presentation to Arizona Educational Officials, Accelerated Learning Laboratory, August 2013
- College Night: How to Get Into College and What to Expect Once You Get There, Accelerated Learning Laboratory, June 2013
- The NSF Workshop on Emerging Models and Technologies for Computation: Bio-Inspired Computing and the Biology and Computer Science Interface, Poster Presentation, Princeton University, July 2008
- The 13th International Meeting on DNA Computing, Poster Presentation, University of Memphis, June 2007
- Embarking on a Mathematical Career, Panel Member, University of Maryland, October 2005
- Numerical Analysis Conference, University of Dundee, July 2005
- Numerical Analysis Seminar, North Carolina State University, April 2005
- Applied and Computational Mathematics Seminar, University of Tulane, April 2005
- PDE & Numerical Methods Seminar, Penn State University, February 2005
- Computer Programming for Mathematicians: Is There Anything Besides Matlab?, Multi-lecture Minicourse, University of Maryland, February 2005

- Preparing for Life Beyond Graduate School, Panel Member, University of Maryland, November 2004
- Numerical Analysis Seminar, University of Maryland, September 2003

Papers

- Numerical Simulations of Superconducting Rings using the Finite Element Method
- A finite element, multi-resolution viscosity method for hyperbolic conservation laws; SIAM Journal on Numerical Analysis
- The efficient implementation of a finite-element, multi-resolution viscosity method for nonlinear conservation laws; Journal of Computational Physics
- Reaction Simulations: A Rapid Development Framework
- A Simplified Mathematical Framework for XYZ to Spectrum Conversions; Submitted

Awards

New Mexico Information Technology Fellowship (2006–2007)

Alberta Wolfe Scholarship (1999–2002)

Henry Thielman Award for Outstanding Work by an M.S. Student (2001)

SIP 2001 Symposium Presentation Award (2001)

Graduate College TA Award (1999)

Software

MARC (Measurement and Analysis Report Compiler): an automated data analysis and management system for student records and grades

Grants

Qwest/AzTEA Classroom Technology Integration Project: Ray Tracing a Path to the Future (2011)

Board Member Information

To be completed individually by each Applicant Governing Board member. All forms must be signed by hand.

Serving on a public charter school governing board is a position of public trust and fiduciary responsibility. As a governing board member of a public school, you are responsible for ensuring the quality of the school's plans, competent stewardship of public funds, and the school's fulfillment of its public obligations and all terms of its Charter Contract.

As part of the application for a new charter school, the Commission requests that each prospective governing board member respond individually to this questionnaire. Where narrative responses are required, brief responses are sufficient.

The purpose of this questionnaire is twofold: 1) to give application reviewers a clearer introduction to the team behind each school proposal in advance of the applicant interview; and 2) to encourage

pu	verning board members to reflect individually, as well as collectively, on their common mission, rposes, and obligations at the earliest stage of school development. Please add the full name of you nool to the footer of this document so that it appears on all pages.
1.	Background Name of charter school on whose governing board you intend to serve:
20	Accelerated Learning Laboratory-Hawaii
2.	Contact information: Name: Jennifer Wittman
	Phone
	E-mail
3.	Describe your educational and employment history. No narrative response is required if a resume and professional biography are attached.
	Resume and professional bio are attached to this form.
4.	Indicate whether you currently or have previously served on a board of a school district, another charter school, a non-public school, or any nonprofit organization. Does not apply to me Yes
5.	Why do you wish to serve on the governing board of the proposed charter school?
	I want to have a greater impact within the field of education, and I want to serve the
	community by contributing my time, experiences, and effort to a school whose vision and mission I believe in.
6.	What is your understanding of the appropriate role of a public charter school governing board member?
	A governing board member's role is to assist the school in its mission to provide a high
	quality education to its students. The Board's role is to help formulate and choose
	strategies that will allow ALL to reach its academic goals, to provide critical feedback and to
	monitor and evaluate the school's effectiveness. As such, the role of individual members is to strictly adhere to the Board's bylaws, the state's regulations, and the school's mission.
	Specifically, I believe that a board member does this by remaining neutral, being honest about conflicts of interest, and putting the school's wellbeing above personal preference.

[ALL-Hawaii]

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- 7. Describe any previous experience you have that is relevant to serving on the charter school's governing board (e.g., other board service). If you have not had previous experience of this nature, explain why you have the capability to be an effective board member.
 While I have not served on any other board, I have worked in an advisory capacity within the legal and educational fields. I understand that critical feedback—both positive and negative—is vital to long term success. Further, I am familiar and comfortable with statutory guidelines, legal issues, and ethical guidelines, as I've received my law degree and passed the Bar exam. My sincere desire to impact education, paired with my practical and educational background, give me a skillset that will allow me to serve as an effective board member.
 - 8. Describe the specific knowledge and experience that you would bring to the governing board. I have hands on training in education—both in training and teaching. I have hands on experience working in the legal field—both civil and criminal. I was raised on various Native American reservations, so I understand the unique academic needs and issues that arise in non-traditional school districts. Most importantly, I have seen just how vital a quality education is to a community, as I grew up attending schools where the students were overlooked and discounted due to either their "at-risk" community or their "strange" cultural beliefs and traditions.

School Mission and Plan

- 1. What is your understanding of the school's mission and guiding beliefs? The school's mission is to provide all students equal access to the most effective education that the nation can offer, regardless of their social, economic, or cultural status. Specifically, it is guided by cognitive science, and it applies innovative, scientifically supported methods to its curriculum and implementation. Finally, its goal is to share this data with other educational entities, so that its outcomes can lead to benefits for other students across the nation.
- 2. What is your understanding of the school's proposed academic plan? The school employs a curriculum that is custom developed by several of the applicant board members. The curriculum utilizes Cognitive Science Research and Best Instructional Practices in its Expert and Trial series. It removes the ceiling effect of the educational process, which allows students to control their academic growth at a rate that is impossible in a traditional school setting. It emphasizes metacognition and soft skills, so that its students acquire not just content, but efficient and sound learning methods.
- 3. What do you believe to be the characteristics of a successful school? A successful school must be solvent, stable, and willing to create a learning-oriented environment that pushes the students while honoring the community from which the students are from. A school cannot effectively work alone—a student is most successful when the school is part of his or her community, which supports and drives him or her to success. Therefore, a successful school integrates into its community, which ensures its solvency and stability, while the community benefits from a local and rigorous learning

environment.

4. How will you know that the school is succeeding or is not succeeding in its mission? Student outcome is the most neutral starting point for evaluating a school's success. Whether it be growth scores or high percentiles on various exams, the school is only as successful as its students. In this case, ALL specifically strives to offer a competitive, rigorous education to its students, so initial student growth, paired with long term trends toward high performing students, will be strong indications of success. Obviously, the board will also employ specific evaluation materials that will use data to assess how the school is progressing towards its goals.

Governance

- Describe the role that the governing board will play in the school's operation.
 A governing board's role is to assist the school in its mission to provide a high quality education to its students. The Board's role is to help formulate and choose strategies that will lead the school to reaching its academic goals, to provide critical feedback and to monitor and evaluate the school's effectiveness.
- 2. How will you know if the school is successful at the end of the first year of operation? At the end of the first year, the evaluation protocols in place should clearly indicate its success. Financially it should be solvent. Academically, the students should meet the school's year 1 goals. As an organization, it should have met its requirements and deadlines with the State of Hawaii. Ideally, it will have also achieved more intangible success—its reputation within the community should be established as one of academic integrity and rigor.
- 3. How will you know at the end of five years if the school is successful? The most obvious sign of success would be a renewal of the charter contract. Second, the annual evaluations would indicate that the school is still on-track and successful. Finally, its students will be doing better than they were in year 1, and the school will, hopefully, be a valued asset to its community.
- 4. What specific steps do you think the governing board will need to take to ensure that the school is successful?

 I think it's most important role will be critical, knowledgeable, and sometimes blunt feedback. A school is a gigantic undertaking, and the governing board is tasked with watching the big picture, which is sometimes hard for the staff to see, as they are inundated with the day to day affairs of the school. Recognizing and taking initiative to anticipate issues and guide the school is, I believe, an important responsibility of the governing board.
- 5. How would you handle a situation in which you believe one or more members of the governing board were acting unethically or not in the best interests of the school?
 Any questions of ethical issues within the board will be attributed to the school, so it is vital to handle such matters openly, honestly, and fairly. I'd turn to the Bylaws, Ethic's

Rules, and I'd follow the procedure that would allow me to bring it to the board's collective attention as soon as possible.

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Indicate whether you or your spouse knows the other prospective governing board members for the proposed school. If so, please indicate the precise nature of your relationship. I/we do not know these individuals Yes
I have a professional, working relationship with Olga, David, Serei, and Marcus.
Indicate whether you or your spouse knows any person who is, or has been in the last two years, a school employee. If so, indicate the precise nature of your relationship.
☐ I/we do not know any such employees ☑ Yes
ersonally am an employee of a school, but not ALL-Hawaii. However, I am listed as a potential employee of ALL- Hawaii on its application.
Indicate whether you or your spouse knows anyone who is doing, or plans to do, business with the charter school (whether as an individual or as a director, officer, employee, or agent of an entity). If so, indicate and describe the precise nature of your relationship and the nature of the business that such person or entity is transacting or will be transacting with the school. I/we do not know any such persons Yes
Indicate if you, your spouse, or other immediate family members anticipate conducting, or are conducting, any business with the school. If so, indicate the precise nature of the business that is being or will be conducted. [] I/we do not anticipate conducting any such business Yes
I am currently listed as the School's Director on the ALL-Hawaii Application.
If the school intends to contract with an education service provider or management organization, indicate whether you or your spouse knows any employees, officers, owners, directors, or agents of that provider. If the answer is in the affirmative, please describe any such relationship.
 ✓ Not applicable because the school does not intend to contact with an education service provider or school management organization. ✓ I/we do not know any such persons
If the school contracts with an education service provider, please indicate whether you, your spouse, or other immediate family members have a direct or indirect ownership, employment, contractual, or management interest in the provider. For any interest indicated, provide a detailed description. N/A. I/we have no such interest Yes
If the school plans to contract with an education service provider, indicate if you, your spouse, or other immediate family member anticipate conducting, or are conducting, any business with the provider. If so, indicate the precise nature of the business that is being or will be conducted.
N/A
Indicate whether you, your spouse, or other immediate family members are a director, officer, employee, partner, or member of, or are otherwise associated with, any organization that is partnering with the charter school. To the extent you have provided this information in response to prior items, you may so indicate. Does not apply to me, my spouse or family X Yes
ndicated above, the ALL-Hawaii application lists me as an applicant board member, the school's primary contact, and the school's director.
Indicate any potential ethical or legal conflicts of interests that would or are likely to exist should you serve on the school's governing board.
.L-Hawaii] Attachment U – Page 4

Attachment U - Page 4

□ None ✓ Yes				
As indicated above	e, my potential employment b	y the school would requ	ire me to abstain from matters	that
conflict with my ro	le as School Director.			
		Certification		
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Munder			t of my knowledge and abilit	y that
	providing to the State Pub		imission as a prospective	
governing board, mer	mber is true and correct	every respect.	0 0	
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				4
Signature	00		Date /	
V				

JENNIFER A. WITTMAN

EDUCATION

University of Arizona James E. Rogers College of Law, Tucson, AZ

Juris Doctor, May 2011

- Passed the Summer 2011 Bar Exam
- Bertha B. Hollis Native American Scholarship recipient
- Volunteer Lawyers Program, Outstanding Student of the Month Award
- 2L Moot Court, Volunteer Lawyer Program Child Support Clinic, Primavera Men's Shelter Legal Referral Clinic, Phi Alpha Delta Legal Fraternity, Student Bar Association, Latino Law Student Association, Gonzales-Villarreal Bridge Program

University of Arizona, Tucson, AZ

Bachelor of Arts, Creative Writing, May 2008

☐ Dean's List: Fall '04, Spring '05, Fall '05, Spring '06; UA Provost Scholarship (Full Tuition); UA Spirit of Discovery Scholarship; Robert C. Byrd Scholarship

EXPERIENCE

ENGLISH DEPARTMENT HEAD & INSTRUCTOR, ALL Tucson

(August 2011-present)

Developed curriculum for differentiated instruction. Taught classes comprised of multiple grade levels and ranges. Trained and received training in Cognitive Research based Teaching Methodology and Implementation. Taught ages 11 to 18. Debate Coach. Mentored new teachers in curriculum implementation.

Project Based Research, Tucson, AZ

Sarbane-Oxley Research (April 2011-August 2011)

Performed project based research for former Department of Labor ARB Judge in regards to Sarbane Oxley changes occurring after he left the Board. Researched new and impending legislation, as well as how those changes have been interpreted and how they alter procedure and grounds of potential lawsuits.

Pima County Public Defender's Office: Felony Division, Tucson, AZ

38(d) Student Lawyer with Michael Rosenbluth (January 2010-July 2010)

Co-counsel on two criminal trials: 1) prohibited possession 2) kidnapping, aggravated assault with a deadly weapon, domestic violence. Not guilty on kidnapping and aggravated assault with deadly weapon charges. Argued purposeful destruction of evidence motion for dui/manslaughter case. Researched, drafted and edited numerous motions for all ranges of criminal cases and argued hearings for all stages of criminal defense. Successfully argued for a class six open to be designated a misdemeanor at sentencing. Researched and wrote mitigation memos and conducted the sentencing hearing. Interviewed clients, witnesses, and deputies.

JENNIFER A. WITTMAN

EXPERIENCE CONT.

City of Tucson Public Defenders Office, Tucson, AZ

Summer Intern (June 2009-July 2009)

Performed detailed statutory research and drafted motions on various matters, including DUI, assault, domestic violence, animal laws, jurisdiction, and sentencing. City Judge granted motion to withdraw plea. Drafted an appeal. Reviewed police interviews and evidence interrogatories for trial. Observed all stages of court proceedings.

Yanker Law Firm, Tucson, AZ

Administrative Associate (June 2006-August 2008)

Trained and supervised administrative associates. Researched trust, tax, and intellectual property issues. Prepared client documentation for civil litigation. Drafted trust and will documents. Managed Tucson office.

Catalina Foothills Unified School District, Tucson, AZ

C.A.R.E. Program Aide (August 2005-May 2006)

Supervised elementary school students in before and after school programs. Created and led student activities. Provided homework help, interacted with parents and school employees.

St. Michael's Day School, Tucson, AZ

Assistant Softball Coach (October 2004-January 2005)

Created and implemented junior varsity middle school squad practice program. Worked with Varsity coach to coordinate overall practice schedule. Interacted with students, parents, and school employees.

VOLUNTEER WORK

City of Tucson Homeless Court

Volunteer Advocate on behalf of homeless clients in need of legal services

Sunnyside School District, Tucson, AZ

Latino Law Student Association: Career Information Sessions (September 2008-May 2011)

AZSportsNetwork, Tucson, AZ

Chess camp coach

Gospel Rescue Missions, Tucson, AZ

Holiday Server & Volunteer

Board Member Information

To be completed individually by each Applicant Governing Board member.

All forms must be signed by hand.

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As part of the application for a new charter school, the Commission requests that each prospective governing board member respond individually to this questionnaire. Where narrative responses are required, brief responses are sufficient.

The purpose of this questionnaire is twofold: 1) to give application reviewers a clearer introduction to the team behind each school proposal in advance of the applicant interview; and 2) to encourage governing board members to reflect individually, as well as collectively, on their common mission, purposes, and obligations at the earliest stage of school development. Please add the full name of your school to the footer of this document so that it appears on all pages.

Background

1. Name of charter school on whose governing board you intend to serve:

	Accelerated Learning Laboratory – Hawaii
2.	Contact information:
	Name: Olga McDaniel Phone: E-mail:
3.	Describe your educational and employment history. No narrative response is required if a resume and professional biography are attached.
	Resume and professional bio are attached to this form.
4.	Indicate whether you currently or have previously served on a board of a school district, another charter school, a non-public school, or any nonprofit organization. Does not apply to me Yes
5.	Why do you wish to serve on the governing board of the proposed charter school?
	I believe in vision and mission of the proposed school, and I am confident that my expertise in accounting and finance will be great contribution to assist the school in its mission to provide a high quality education to its students.
6.	What is your understanding of the appropriate role of a public charter school governing board member?
	Role of a public charter school governing board member is acting effectively and ethically in

their duties related to overseeing the school's mission, fiscal integrity, and educational quality, and to recruiting, supporting, and evaluating the chief executive. Public board have the additional responsibilities of maintaining the public trust and balancing the needs of the state of Hawaii and the school, pursuing what is best for the public they serve and the school they govern.

7. Describe any previous experience you have that is relevant to serving on the charter school's governing board (e.g., other board service). If you have not had previous experience of this nature, explain why you have the capability to be an effective board member.

While I have not served on any other board, I have worked in an advisory capacity within financial and accounting field for Accelerated Learning Laboratory for more than 3 years. I have more than 15 years of education and experience in Statistics, Accounting and Finance, that will allow me to serve effectively on the school's governing board. I am hardworking and have earned a reputation as a dependable and creative problem solver. My experience and contacts have prepared me for this step in my career.

8. Describe the specific knowledge and experience that you would bring to the governing board.

I will be a key member of the Finance Team. Through successful relationship building and business partnering with all levels of the organization, my role will provide forecasting, reporting, analysis and decision support for school and central office finance unit.

School Mission and Plan

What is your understanding of the school's mission and guiding beliefs?

The school's mission is to provide all students equal access to the most effective education that the nation can offer, regardless of their social, economic, or cultural status. Our goal is to share our expertise with other educational institutions, so other students nationwide could benefit as well.

2. What is your understanding of the school's proposed academic plan?

The school employs a curriculum that is custom developed by several of the applicant board members. The curriculum utilizes Cognitive Science Research and Best Instructional Practices in its Expert and Trial series. It removes the ceiling effect of the educational process, which allows students to control their academic growth at a rate that is impossible in a traditional school setting. It emphasizes metacognition and soft skills, so that its students acquire not just content, but efficient and sound learning methods.

3. What do you believe to be the characteristics of a successful school?

The characteristics of a successful school are:

 Vision: having a common understanding of goals and principles for everyone on the learning community;

ALL-Hawaii

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- Leadership: having our governing board members dedicated to helping the learning community reach its vision;
- 3) High Academic Standards;
- Professional Development: providing consistent opportunities for teachers and staff to engage in continuous learning;
- 4. How will you know that the school is succeeding or is not succeeding in its mission?

As an evidence of success should be:

- Student outcome, as the most important indicator. The board will use evaluation materials, collecting and analyzing data about students, and evaluating their progress.
- 2) Collecting and analyzing data about staff;
- 3) Collecting and analyzing data about programs;
- 4) Interpreting financial data.

Governance

1. Describe the role that the governing board will play in the school's operation.

A Board's role is to assist the school in its mission to provide a high quality education to its students. The Board's role is to help formulate and choose strategies that will lead the school to reaching its academic goals, to provide critical feedback and to monitor and evaluate the school's effectiveness.

2. How will you know if the school is successful at the end of the first year of operation?

The evaluation protocols in place will indicate schools success.

- 1) Students should meet year 1 goals in academics
- ALL-Hawaii will provide to the Commission any data necessary and reasonably required by the Commission to meet its oversight and reporting obligations
- 3) Appropriate funds use
- 4) The school enrollment will not decrease.
- 3. How will you know at the end of five years if the school is successful?
 - 1) Renewal of the charter school contract
 - 2) Annual Evaluations would indicate that the school is still on-track and successful
 - 3) Students' academic progress.

Discl	osu	res
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1.	Indicate whether you or your spouse knows the other prospective governing board members for the proposed school. If so, please indicate the precise nature of your relationship. I/we do not know these individuals Yes
	Jennifer Wittman, David Jones, Serei Kay, and Marcus Calhoun-Lopez are my
	colleagues and I /we know them for more than 3 years.
	I know Peter Kwan for more than one year. Peter Kwan is working with developers and

the prospective school. It's mostly telephone/ e-mail correspondence. 2. Indicate whether you or your spouse knows any person who is, or has been in the last two years, a school employee. If so, indicate the precise nature of your relationship. I am an employee of a charter school, but not ALL-Hawaii. I am listed as a Board member of ALL -Hawaii on its application. 3. Indicate whether you or your spouse knows anyone who is doing, or plans to do, business with the charter school (whether as an individual or as a director, officer, employee, or agent of an entity). If so, indicate and describe the precise nature of your relationship and the nature of the business that such person or entity is transacting or will be transacting with the school. | I/we do not know any such persons | Yes 4. Indicate if you, your spouse, or other immediate family members anticipate conducting, or are conducting, any business with the school. If so, indicate the precise nature of the business that is being or will be conducted. I/we do not anticipate conducting any such business Yes 5. If the school intends to contract with an education service provider or management organization, indicate whether you or your spouse knows any employees, officers, owners, directors, or agents of that provider. If the answer is in the affirmative, please describe any such relationship. Not applicable because the school does not intend to contact with an education service provider or school management organization. I/we do not know any such persons Yes 6. If the school contracts with an education service provider, please indicate whether you, your spouse, or other immediate family members have a direct or indirect ownership, employment, contractual, or management interest in the provider. For any interest indicated, provide a detailed description. N/A. I/we have no such interest Yes If the school plans to contract with an education service provider, indicate if you, your spouse, or other immediate family member anticipate conducting, or are conducting, any business with the provider. If so, indicate the precise nature of the business that is being or will be conducted. N/A I/we or my family do not anticipate conducting any such business Yes 8. Indicate whether you, your spouse, or other immediate family members are a director, officer, employee, partner, or member of, or are otherwise associated with, any organization that is partnering with the charter school. To the extent you have provided this information in response to prior items, you may so indicate. Does not apply to me, my spouse or family X Yes 9. Indicate any potential ethical or legal conflicts of interests that would or are likely to exist should you serve on the school's governing board.

keep me posted about his / developers progress . He also provided ROM Estimate for

ALL-Hawaii

☐ None X Yes

Certification

the State Public Charter School Commission	owledge and ability that the information I am providing to as a prospective governing board member is true and
correct in every respect	
	02/12/2018
	Valla Duk
Signature	Date



OBJECTIVE

Positions that represent a good match with my background and skills are working as a Financial Analyst, Staff Accountant, Bookkeepert. I will accept full-time positions only.

SUMMARY OF QUALIFICATIONS

Qualifications include record-keeping, accounting, computer, analytical and communication skills. My base of experience includes, maintaining entire business ledger, including accounts payable and receivable, payroll, taxes preparation and pay, generating and auditing documents and financial reports, performing statistical analyses, researching discrepancies, analyzing problems and answering questions, verifying forms for accuracy and completeness.

EXPERIENCE

I have 6 years' experience in Statistics (Statistics of Labor) and 2 years' experience in Accounting. A considerable amount of this experience came while employed with Ukrainian Government, Department of Statistics, Kharkov, Ukraine.

2012-now Finance Administrator(Accelerated Elementary and Secondary Schools)

Director (Accelerated Learning laboratory Preschool)

Accelerated Elementary and Secondary Schools

Accelerated Learning Laboratory Preschool

Tucson, AZ

My present duties include maintaining entire business ledger for two separate businesses- the Charter School and the Preschool. I maintain Accounts Payable and Accounts Receivable. I do billing for Preschool tultion and aftercare programs on monthly basis. Collections. Bi-weekly payroll processing for ALL Preschool. Sending PR data to PR Company bi-weekly for the Charter School; accordingly GL entry of payroll data on monthly basis (from database that I have received from Compupay Inc.) Monthly Bank Reconciliation of bank accounts and credit cards(6 accounts). Processing and paying payroll taxes, and TRT-1. Reporting Form 1099. Payment plan tracking and Collections. Charter School Annual Budget and Annual Financial Report, other financial reports. Grants application / grants management (federal and state funding). I'm proficient in QUICKBOOKS, Excell Spreadsheet software, Word Processing software, MS OUTLOOK.

2011-2012 Accounting Assistant

Tucson Greyhound Park

Tucson, AZ

Assisting the controller in all aspects of general accounting. Accounts Payable and Accounts Receivable. Bi-weekly payroll processing and payroll taxes. Preparing and pay sales and gambling taxes. Filing and data entry.

I used CYMA Accounting Software, MS WORD, MS EXCELL, MS Outlook, DOS.

2010-2011 Branch Associate,

BBVA Compass Bank,

Tucson, AZ

Provide an exceptional customer experience. Perform all paying and receiving functions within delegated authority levels. Serve as the primary customer service personnel in the branch. Make sales referrals to FSA, PRM, ABM, and BRE. Answer general branch telephone inquiries and refer to appropriate channel if needed. Make risk assessments on transactions based on delegated authorities. Support the branch team by obtaining referral goals and participate in targeted sales campaigns.

2003-2008 Statistics Specialist 1 (Statistics of Labor Department)

Kharkov Department of Statistics,

Kharkov, Ukraine

Collecting and checking statistical reports (Statistics of Labor) from firms and organizations of city of Kharkov (Ukraine). Data entry. Prepared documents, and reports which statistically described the economic activity for the city and region of Kharkov. Audit.

EDUCATION AND TRAINING

Kharkov National University of Karazin, Kharkov, Ukraine, 09/01/1997-07/05/2002

Graduated with honors (gold level), in Economics and Statistics (Bachelor's degree).

Fluent in Russian, Ukrainian and English. TOEFL iBT score is 78 out of 120 (as of 02/26/2010).

Notes:

US Citizen.

References available upon request.

Board Member Information

To be sompleted individually by each Applicant Governing Board member.

All forms must be signed by hand.

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As part of the application for a new charter school, the Commission requests that each prospective governing board member respond individually to this questionnaire. Where narrative responses are required, brief responses are sufficient.

	unica, and responses and same con-
the go	e purpose of this questionnaire is twofold: 1) to give application reviewers a clearer introduction to team behind each school proposal in advance of the applicant interview; and 2) to encourage verning board members to reflect individually, as well as collectively, on their common mission, rposes, and obligations at the earliest stage of school development. Please add the full name of your gool to the footer of this document so that it appears on all pages.
	Background
1.	Name of charter school on whose governing board you intend to serve:
	Accelerated Learning Laboratory-Hawaii
2.	Contact Information: Name: Michael Todnem
	Phone:
	E-mail:
3.	Describe your educational and employment history. No narrative response is required if a resume and professional biography are attached.
	Resume and professional bio are attached to this form.
4.	Indicate whether you currently or have previously served on a board of a school district, another charter school, a non-public school, or any nonprofit organization. Does not apply to me Yes
-	Why do you wish to serve on the governing board of the proposed charter school?
5.	I value education, and want to contribute my time, experiences, and effort to a school
	whose vision and mission I believe in.
6.	What is your understanding of the appropriate role of a public charter school governing board member?
	A governing board member's role is to assist the school in its mission to provide a high
	quality education to its students. It must provide evaluations, feedback, and critical
	guidance. It must serve as a voice for the community
7.	Describe any previous experience you have that is relevant to serving on the charter school's governing board (e.g., other board service). If you have not had previous experience of this nature, explain why you have the
	capability to be an effective board member. I have years of experience working for and with
	government entities, dealing with constituents and their concerns. I speak regularly with

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Home Owners Associations and Boards/Commissions on problem resolution within budgetary constraints. Additionally, my son attended this school with outstanding results, I believe in this school and the opportunities it presents for success.

8. Describe the specific knowledge and experience that you would bring to the governing board.
I have experience serving as a board member, experience in financial management, and have experienced the educational field from a parent's perspective.

School Mission and Plan

- What is your understanding of the school's mission and guiding beliefs?
 The school's mission is to provide all students equal access to the most effective education that the nation can offer, regardless of their social, economic, or cultural status. It uses cognitive science. The school's goal is to improve the field of education.
- 2. What is your understanding of the school's proposed academic plan? The school employs a curriculum that is custom developed by various board members, and it applies Cognitive Science. Each class has experts and challenges, which allow the students to progress at amazing rates, and to develop their skillset regardless of how low they are or what grade level they are "supposed" to be at.
- What do you believe to be the characteristics of a successful school?
 A successful school must be responsible, stable, and oriented towards the needs of the students.
- 4. How will you know that the school is succeeding or is not succeeding in its mission? Community reputation and student success is informal but telling in regards to a school's success. More formally, evaluation protocols should very clearly indicate the school's success.

Governance

- Describe the role that the governing board will play in the school's operation.
 A governing board's role is to assist the school in its mission and help lead the school to success. It must evaluate and guide the school.
- 2. How will you know if the school is successful at the end of the first year of operation? It will have met its obligations to the state, maintained financial stability, demonstrated student growth and achievement, and have a group of students eager to reenroll for the following school year. And, the evaluation will formally reflect the success of the organization.
- How will you know at the end of five years if the school is successful?
 The school will be stable, and have a positive evaluations from year to year. The school will be successful if it gets its contract renewed.
- 4. What specific steps do you think the governing board will need to take to ensure that the school is

[ALL-Hawait] Attachment U = Page 2

	successfur? The board must be ethical, responsible, and take the initiative to provide useful, applicable
	feedback as soon as Year O begins,
5.	How would you handle a situation in which you believe one or more members of the governing board were acting unethically or not in the best interests of the school?
	Issues of ethics should be brought to the attention of the board, and ethics policies and
	policies should be applied to resolve the problem.
	Disclosures
1.	Indicate whether you or your spouse knows the other prospective governing board members for the proposed school. If so, please indicate the precise nature of your relationship.
	☐ I/we do not know these individuals ☑ Yes
	I have served on a board with David and Serei.
2.	Indicate whether you or your spouse knows any person who is, or has been in the last two years, a school employee. If so, indicate the precise nature of your relationship.
	I/we do not know any such employees Yes
3.	Indicate whether you or your spouse knows anyone who is doing, or plans to do, business with the charter
	school (whether as an individual or as a director, officer, employee, or agent of an entity). If so, indicate and describe the precise nature of your relationship and the nature of the business that such person or entity is
	transacting or will be transacting with the school.
	☐ I/we do not know any such persons ☐ Yes
4.	Indicate if you, your spouse, or other immediate family members anticipate conducting, or are conducting, any business with the school. If so, indicate the precise nature of the business that is being or will be conducted.
	I/we do not anticipate conducting any such business
5.	If the school intends to contract with an education service provider or management organization, indicate
	whether you or your spouse knows any employees, officers, owners, directors, or agents of that provider. If the answer is in the affirmative, please describe any such relationship.
	Not applicable because the school does not intend to contact with an education service provider or school
	management organization. I/we do not know any such persons Yes
	4. 프레이어 전 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.
6.	If the school contracts with an education service provider, please indicate whether you, your spouse, or other immediate family members have a direct or indirect ownership, employment, contractual, or management
	interest in the provider. For any interest indicated, provide a detailed description.
	☐ N/A. ☑ I/we have no such interest ☐ Yes
7.	If the school plans to contract with an education service provider, indicate if you, your spouse, or other
	immediate family member anticipate conducting, or are conducting, any business with the provider. If so, indicate the precise nature of the business that is being or will be conducted.
	□ N/A ☑ I/we or my family do not anticipate conducting any such business □ Yes
8.	Indicate whether you, your spouse, or other immediate family members are a director, officer, employee,
	partner, or member of, or are otherwise associated with, any organization that is partnering with the charter school. To the extent you have provided this information in response to prior items, you may so indicate.
	Does not apply to me, my spouse or family Yes
A	LL-Hawaii] Attachment U – Page 3

 Indicate any potential ethical or legal of the school's governing board. None ☐ Yes 	onflicts of interests that would or are likely to exist should you serve on
	Certification
MICHAEL TODWEN	, certify to the best of my knowledge and ability that
the information I am providing to the S	tate Public Charter School Commission as a prospective
governing board member is true and co	prrect in every respect.
	12 FEB 2016
Signature	Date

Michael Todnem

Experience

2013-Present

Town of Oro Valley

Oro Valley, Az.

StormWater Division Manager, P.E., Department of Public Works/StormWater Utility Division

- Duties include management of day to day operations of the StormWater Utility.
- Field Inspections of all Town owned Drainage Facilities.
- Conducts activities essential to fulfilling the requirements of the current ADEQ/EPA approved Stormwater Quality Management Plan (SWMP).
- Primary liaison with ADEO/EPA regarding stormwater quality regulations and requirements for changes to the SWMP.
- Works with the Pima County Regional Flood Control District (PCRFCD), ADWR, and FEMA to ensure compliance and consistency of the Town's adopted Floodplain and Erosion Hazard Ordinance and in the resolution of floodplain mapping issues.
- Participates with Town staff and Stormwater Utility Commission (SWUC) members to implement required activities necessary to fulfill the Town's SWMP
- Reviews and recommends updates to the Town manuals and ordinances regarding stormwater issues.
- Helps develop the budget for the Town's stormwater management program.
- Provides guidance to Town staff on EPA, ADEQ, ADWR, and FEMA regulatory requirements and the implications to current Town regulations.
- Responds to and advises local residents on stormwater quality regulations and quantity issues.
- Manages contractors and consultants who provide stormwater related services, products, and construction to support the Town's Stormwater Utility and programs.
- Performs technical analysis and review of drainage and soil reports for all development and improvement plans to ensure appropriate stormwater infrastructure is provided and incorporated into the existing Utility system.
- Performs technical analysis and review of actions that impact FEMA regulatory floodplains within the Town to include LOMRs, LOMAs, levee certifications and any supporting environmental or geotechnical reports completed in support of the proposed actions.
- Performs minor in-house hydrologic and hydraulic studies, drainage reports and construction designs to support in-house operations projects.
- Provide technical analysis and inspection support on Stormwater Pollution Prevention Plans and Notice of Termination requests submitted for construction projects to meet the ADEQ Stormwater Construction General Permit.
- Assists in development of the capital improvement program project proposals to correct
- drainage and erosion issues, for submittal for funding from the PCRFCD

and FEMA, as appropriate.

· Responsible for day to day supervision of Stormwater staff

2010–2013 Town of Oro Valley Oro Valley, Az. Civil Engineer, P.E., Department of Public Works/Engineering Division

- Field Inspector for Lambert Lane project including 2-4 lane improvements with associated drainage box culverts and drop inlets.
- Field Inspector for Lambert Lane project with additional duties including Soil Nail Wall monitoring
- Field Inspector for James D. Kreig Park/ Oro Valley Aquatic Center Demo and New Facility Construction.

2006–2010 Town of Oro Valley Oro Valley, Az. Civil Engineer, P.E., Department of Public Works/Operations Division

- Project Manager of multiple small scale projects throughout the Town of Oro Valley including monument signs, building additions, new buildings and generator backup systems.
- Construction Manager for Town Solar Production Project and Energy Efficiency Project
- Supervisor for Pavement Management section Initiated and developed Pavement Management Program for the Town of Oro Valley including Sequel Server Database and system management
- Technical Support for Roads and Streets/Maintenance Division
- Supervisor for Traffic Control/Signals
- Supervisor for Facilities Maintenance for all structures owned by the Town
 of Oro Valley/contract administration for all annual contract services
- Supervisor for Landscape Maintenance of Town owned right-ofways/contract administration and supervision

2004–2006 Town of Oro Valley Oro Valley, Az. Civil Engineer, E.I.T., Department of Public Works/Operations

- Pavement Management Supervisor: Developed Pavement Management System for the Town of Oro Valley. Responsibilities include initiation and development of Sequel Server database for evaluating conditions and forecast analysis for all roads within Town limits, collection and evaluation of field data and scheduling of maintenance projects, written specifications, draft plans, and cost estimates for contract documents, management of contractor scheduling and performance, inspection of on-going and completed work and acceptance to project specifications and safety standards.
- Development Review of Subdivision and Commercial Projects: including review of Hydrology/Hydraulics, Soils, Traffic and Structural Reports, associated Site plan review of Development Plans, Preliminary Plats, Final Plats, and Improvement Plans/As-Builts
- · Technical Support for Roads and Streets/Maintenance Division
- Supervisor for Traffic Control/Signals.
- Supervisor for Facilities Maintenance for all structures owned by the Town of Oro Valley

2002-2004

Civil Engineer Technician, E.I.T., Department of Public Works/Development Review Division

- Development Review of Subdivision and Commercial Projects: including review of Hydrology/Hydraulics, Soils, Traffic and Structural Reports, associated Site plan review of Development Plans, Preliminary Plats, Final Plats, and Improvement Plans/As-Builts
- Developed Retaining Wall Review Process and supplemental training for
- Developed and managed databases for tracking projects in the review process.

2001-2002

Town of Oro Valley

Oro Valley, Az

Civil Engineer Technician, Department of Public Works/Development Review Division

- Grading Review and Retaining/Site Wall Review of Custom Residence Submittals.
- Developed and managed databases for tracking projects.
- Developed trial-basis of on-line review of Custom lot submittals.

1999-2001

Vistoso Builders

Oro Valley, Az.

Site Superintendent

 In charge of layout, grading and building foundations systems for homebuilder on various projects

1986-1999

3 Geotechnical Engineering firms. Southern Az.

Geotechnical Engineering Technician

- Desert Earth Engineering Soils, Asphalt, Concrete Materials Testing, field work and Lab Manager
- Terracon Consultants West Soils, Asphalt, Concrete Materials Testing, field work and Lab Manager
- Construction, Inspection and Testing Soils, Asphalt, Concrete Materials Testing, Field and Lab responsibilities

Education

1980-1982 Illinois State University Normal, II Normal, II 1985-1986 Illinois State University 1986-1988 Pima Community College Tucson, Az. University of Az Tucson, Az. 1988-1990 Major in Physics at Illinois State and Major in Civil Engineering at U. of A. E.I.T., Engineer In Training, Cert # 09208/Dec. 2003

P.E., June 2006

Board Member Information

To be completed individually by each Applicant Governing Board member.

All forms must be signed by hand.

Serving on a public charter school governing board is a position of public trust and fiduciary responsibility. As a governing board member of a public school, you are responsible for ensuring the quality of the school's plans, competent stewardship of public funds, and the school's fulfillment of its public obligations and all terms of its Charter Contract.

As part of the application for a new charter school, the Commission requests that each prospective governing board member respond individually to this questionnaire. Where narrative responses are required, brief responses are sufficient.

The purpose of this questionnaire is twofold: 1) to give application reviewers a clearer introduction to the team behind each school proposal in advance of the applicant interview; and 2) to encourage governing board members to reflect individually, as well as collectively, on their common mission, purposes, and obligations at the earliest stage of school development. Please add the full name of your school to the footer of this document so that it appears on all pages.

	rposes, and obligations at the earliest stage of school development. Please add the full name of you nool to the footer of this document so that it appears on all pages.
1.	Name of charter school on whose governing board you intend to serve: Accelerated Learning Laboratory-Hawaii Contact information: Name: Serei Kay
3.	Describe your educational and employment history. No narrative response is required if a resume and professional biography are attached. Resume and professional bio are attached to this form. My educational background was in accounting, but that was and is not where my passion lies. It is working with children that lights my fire. I've owned a few businesses which I sold when I opened a preschool on the campus of Accelerated Elementary and Secondary Schools in 2000. In 2001, I was asked to work for AESS as the office manager and later other positions. During my employment with AESS, I have served as Grants Coordinator, Finance, Teacher's Assistant, SAT/PSAT Coordinator, AZELLA Coordinator, AIMS Coordinator, National Honor/National Junior Honor Society Advisor, Student Council Advisor, Science Olympiad Coach and Student Advisor among other roles.
4.	Indicate whether you currently or have previously served on a board of a school district, another charter school, a non-public school, or any nonprofit organization. Does not apply to me Yes
5.	Why do you wish to serve on the governing board of the proposed charter school? I believe that children should be invested in. They deserve to have brighter futures as well as opportunity to make their mark in history. Contributing my energy, effort and time serving on a board of a school whose vision and mission is to ensure that ALL children have equal access and opportunity to experience and obtain a great education is an extremely worthwhile cause to me.

- 6. What is your understanding of the appropriate role of a public charter school governing board member? A governing board member bears the responsibility of collaborating with other members of the governing board to provide assistance and oversight, set guidelines, monitor, evaluate and provide feedback so that the school can fulfill its mission, follow the vision, adhere to federal and state regulations, bylaws and protocols set in order for children to obtain the highest quality education possible. It is also incumbent upon the board member to remain neutral, be honest, open and excuse himself/herself from decisions where conflicts of interest is present, put aside all personal preferences and have first and foremost the best interest of the school at heart.
- 7. Describe any previous experience you have that is relevant to serving on the charter school's governing board (e.g., other board service). If you have not had previous experience of this nature, explain why you have the capability to be an effective board member.

Given my experiences in many different areas of education over the span of 16 years, I believe I have the insights to understand and provide sound suggestions/guidance to positively impact the students' education in an environment where learning is fun and long term knowledge is gained.

8. Describe the specific knowledge and experience that you would bring to the governing board. Working in a school over the last 16 years have given me much insight, experience and knowledge as to what are some things that make a good school where children are enthusiastic and take charge of their own learning. My experiences as an advisor to students in a number of areas have provided me with the insight to understand children and what motivates them among other things. Growing up in a third world culture house-hold where education for females was not appraised, I understand, cherish and appreciate the impact of what a good quality education will do for a person and how enriching a life one can live.

School Mission and Plan

1. What is your understanding of the school's mission and guiding beliefs?

The mission of the school is to make accessible to and provide all children equal opportunity to the best education this nation has to offer, regardless of their cultural background, ethnicities, religious, gender or socio-economic status. The guiding force is the firm belief that all children will exhibit extraordinarily gifted brilliance and performance when a comprehensive curriculum is coupled with pedagogy based on scientifically sound theories of human learning and when their innate talents are nurtured in a challenging, supportive, and civil environment.

2. What is your understanding of the school's proposed academic plan?

The curriculum is developed by a group of educational professionals based on Cognitive Science Research and Best Instructional Practices and teachers are trained to teach the curriculum in a manner that correlates to the way humans learn naturally. There is no ceiling effect, students move as rapidly and as high as they're capable of and/or driven, students' drives to learn come from within themselves and learning is fun and insatiable. Metacognition, soft skills and learning to learn prepares students with skills, not just for the present but for the rest of their lives.

3. What do you believe to be the characteristics of a successful school?

In order for a school to be successful, it must be stable, follow sound fiscal policies and procedures, be solvent, and create an environment that is centered on the learner, learner-oriented. It must also create an atmosphere where students are responsible for and take ownership of their community. When students have a vested interest in their learning and their community, they are driven to succeed and make their environment better. A school must also integrate and include all members of the community and resources available from local and surrounding areas to enrich a rigorous learning environment

4. How will you know that the school is succeeding or is not succeeding in its mission?

The success of a mission can be evaluated by looking at student outcomes. Continual growth data from standardized exams and various other measuring tools will project long term trends. While standardized exams are point-in-time evaluation tools, it should not be used as the only reflection of student outcomes or teacher performance. Frequent and consistent data must be collected to project a true picture of whether students are learning or if academic goals are met. ALL-Hawaii will strive to offer a rigorous and competitive education where students will be challenged but not overwhelm them. Frequent evaluation outcomes based on true and actual data showing a consistent upward trend will be the truest picture of success. Successful students means a successful school.

Governance

Describe the role that the governing board will play in the school's operation.

A governing board plays the role of providing assistance and oversight, set guidelines, monitor, evaluate and provide feedback so that the school can fulfill its mission, follow the vision, adhere to federal and state regulations, bylaws and protocols set in order for children to obtain the highest quality education possible.

- 2. How will you know if the school is successful at the end of the first year of operation? Financial solvency and data collected from evaluations will indicate success. Students should be academically progressing and goals met. All federal and state reports should be filed in a timely fashion and have met all deadlines. Academic integrity and reputation is established within the community.
- How will you know at the end of five years if the school is successful?
 Annual evaluations, feedbacks from academic measurement tools and continuous goals met will indicate success.
- 4. What specific steps do you think the governing board will need to take to ensure that the school is successful?

Meetings to discuss outcomes in an unbiased and objective environment will enable all parties involved to collaborate and formulate strategies, methods, protocols and resolve any issues that may present itself.

5. How would you handle a situation in which you believe one or more members of the governing board were acting unethically or not in the best interests of the school?

If I believed that one or more members of the governing board were acting in an unethical fashion, I would follow bylaws and regulations that are in place to handle such a situation, but I would do so in an open, fair, honest and objective fashion/environment.

	Disclosures
1.	Indicate whether you or your spouse knows the other prospective governing board members for the proposed school. If so, please indicate the precise nature of your relationship. I/we do not know these individuals Yes I have a professional, working relationship with Olga, Marcus and Jennifer. David is a long term acquaintance/friend.
2. p	Indicate whether you or your spouse knows any person who is, or has been in the last two years, a school employee. If so, indicate the precise nature of your relationship. I/we do not know any such employees X Yes ersonally am an employee of a school, but not ALL-Hawaii.

3,	school (whether you or your spouse knows anyone who is doing, or plans to do, business with the charter school (whether as an individual or as a director, officer, employee, or agent of an entity). If so, indicate and describe the precise nature of your relationship and the nature of the business that such person or entity is transacting or will be transacting with the school. I/we do not know any such persons Yes
	M I/we do not know any such persons [] Yes
4.	Indicate if you, your spouse, or other immediate family members anticipate conducting, or are conducting, any business with the school. If so, indicate the precise nature of the business that is being or will be conducted. I/we do not anticipate conducting any such business Yes
5.	If the school intends to contract with an education service provider or management organization, indicate whether you or your spouse knows any employees, officers, owners, directors, or agents of that provider. If the answer is in the affirmative, please describe any such relationship. Not applicable because the school does not intend to contact with an education service provider or school management organization.
	☐ I/we do not know any such persons ☐ Yes
6.	If the school contracts with an education service provider, please indicate whether you, your spouse, or other immediate family members have a direct or indirect ownership, employment, contractual, or management interest in the provider. For any interest indicated, provide a detailed description. N/A I/we have no such interest Yes
7.	If the school plans to contract with an education service provider, indicate if you, your spouse, or other immediate family member anticipate conducting, or are conducting, any business with the provider. If so, indicate the precise nature of the business that is being or will be conducted. N/A I/we or my family do not anticipate conducting any such business Yes
8.	Indicate whether you, your spouse, or other immediate family members are a director, officer, employee, partner, or member of, or are otherwise associated with, any organization that is partnering with the charter school. To the extent you have provided this information in response to prior items, you may so indicate. Does not apply to me, my spouse or family Yes
lan	n listed as an applicant board member.
9.	Indicate any potential ethical or legal conflicts of interests that would or are likely to exist should you serve on the school's governing board. None Tyes
	Certification
	CENTILLATION
i, _	Sex ex Lau , certify to the best of my knowledge and ability that information I am providing to the State Public Charter School Commission as a prospective
gov	verning board member is true and correct in every respect.
	2/12/2016
Sig	Date

Board Member Information

To be completed individually by each Applicant Governing Board member.

All forms must be signed by hand.

Serving on a public charter school governing board is a position of public trust and fiduciary responsibility. As a governing board member of a public school, you are responsible for ensuring the quality of the school's plans, competent stewardship of public funds, and the school's fulfillment of its public obligations and all terms of its Charter Contract.

As part of the application for a new charter school, the Commission requests that each prospective governing board member respond individually to this questionnaire. Where narrative responses are required, brief responses are sufficient.

The purpose of this questionnaire is twofold: 1) to give application reviewers a clearer introduction to the team behind each school proposal in advance of the applicant interview; and 2) to encourage governing board members to reflect individually, as well as collectively, on their common mission, purposes, and obligations at the earliest stage of school development. Please add the full name of your school to the footer of this document so that it appears on all pages.

	Background
1.	Name of charter school on whose governing board you intend to serve: Accelerated Learning Laboratory-Hawaii
2.	Contact information: Name: David Jones Phone: E-mail:
3.	Describe your educational and employment history. No narrative response is required if a resume and professional biography are attached. Resume and professional bio are attached to this form.
4.	Indicate whether you currently or have previously served on a board of a school district, another charter school, a non-public school, or any nonprofit organization. Does not apply to me X Yes
5,	Why do you wish to serve on the governing board of the proposed charter school? Because I am convinced that it can do a significant amount of social good including by creating a model with which other educational institutions can benefit from.
6,	What is your understanding of the appropriate role of a public charter school governing board member? The purposes to oversee that the decisions correspond with the vision and mission statement without managing day-to-day activities. To oversee general decisions and operations and support the mission and the vision of the public charter school. As well as ensure financial stability of the school. And to ensure that the organization complies to state and federal laws.

- Describe any previous experience you have that is relevant to serving on the charter school's governing board (e.g., other board service). If you have not had previous experience of this nature, explain why you have the capability to be an effective board member.
 - I have served on a long track of practical experience in the field of education including serving on numerous boards, designing curriculum and training teachers.
- Describe the specific knowledge and experience that you would bring to the governing board.
 Systems management, fiscal accountability, and community interface, in addition to extensive knowledge in the practical application of theoretical pedagogical constructs.

School Mission and Plan

1. What is your understanding of the school's mission and guiding beliefs?

To first serve its students and then to serve the public's interests.

What is your understanding of the school's proposed academic plan?

It is a refinement of an engineered educational system that has demonstrated high effectiveness across a broad range of socioeconomic levels.

3. What do you believe to be the characteristics of a successful school?

Consensus building within the school population, with the general community the school is located in, and with political and regulatory agencies.

4. How will you know that the school is succeeding or is not succeeding in its mission?

Differentials between where the students began and where they are in terms of academic achievement, and their continual growth in maturity more generally, stakeholder enthusiasm, and recognition by the general public and the Department of Education

Governance

Describe the role that the governing board will play in the school's operation.

Oversight, philosophical guidance, assistance in interfacing with the public, and financial support.

How will you know if the school is successful at the end of the first year of operation?

Financial solvency, high student academic growth rates across demographic groups.

[ALL-Hawaii]

Attachment U - Page 2

3.	How will you know at the end of five years if the school is successful?
	Community recognition and support, positive impact on academic achievement by all students, and financial solvency.
4.	What specific steps do you think the governing board will need to take to ensure that the school is successful?
	Community outreach and establishment of a local advisory board.
5.	How would you handle a situation in which you believe one or more members of the governing board were acting unethically or not in the best interests of the school?
	First investigate to the point of becoming fully informed then take internal actions with the intent of resolving the problem. If unsuccessful, take all legally required and morally necessary steps to protect the integrity of the school.
	Disclosures
1.	Indicate whether you or your spouse knows the other prospective governing board members for the proposed school. If so, please indicate the precise nature of your relationship. I/we do not know these individuals Yes I have a professional, working relationship with Olga, Jennifer, and Marcus. Serel is a long-term acquaintance/friend.
2.	Indicate whether you or your spouse knows any person who is, or has been in the last two years, a school employee. If so, indicate the precise nature of your relationship. I/we do not know any such employees X Yes
	I am currently the CEO of ALL Tucson.
3.	Indicate whether you or your spouse knows anyone who is doing, or plans to do, business with the charter school (whether as an individual or as a director, officer, employee, or agent of an entity). If so, indicate and describe the precise nature of your relationship and the nature of the business that such person or entity is transacting or will be transacting with the school. I/we do not know any such persons Yes
	As part of the Applicant Board, I have spoken with Peter Kwan, one of the community members that has been vital to our efforts to gain community support in the Kapolei area.
4,	Indicate if you, your spouse, or other immediate family members anticipate conducting, or are conducting, any business with the school. If so, indicate the precise nature of the business that is being or will be conducted, I/we do not anticipate conducting any such business Yes
	At this time there has been no specific or general discussion of providing anything except donated services by any specific individual or organization.

5.	If the school intends to contract with an education service provider or management organization, indicate whether you or your spouse knows any employees, officers, owners, directors, or agents of that provider. If the answer is in the affirmative, please describe any such relationship. Not applicable because the school does not intend to contact with an education service provider or school
	management organization. I/we do not know any such persons Yes
6,	If the school contracts with an education service provider, please indicate whether you, your spouse, or other immediate family members have a direct or indirect ownership, employment, contractual, or management interest in the provider. For any interest indicated, provide a detailed description. N/A. I/we have no such interest Yes
7.	If the school plans to contract with an education service provider, indicate if you, your spouse, or other immediate family member anticipate conducting, or are conducting, any business with the provider. If so, indicate the precise nature of the business that is being or will be conducted. N/A
8.	Indicate whether you, your spouse, or other immediate family members are a director, officer, employee, partner, or member of, or are otherwise associated with, any organization that is partnering with the charter school. To the extent you have provided this information in response to prior items, you may so indicate. Does not apply to me, my spouse or family X Yes
	Yes, I am the CEO of ALL Tucson, which will have a sister-school relationship with ALL Hawaii, which will be mutually supportive and beneficial to both parties.
9.	Indicate any potential ethical or legal conflicts of interests that would or are likely to exist should you serve on the school's governing board. None Yes
	Unknown, however none are anticipated. If some such conflict of interest should arise, I would immediately recuse myself from participating in any such discussions or decisions.
	Certification
	certify to the best of my knowledge and ability that information I am providing to the State Public Charter School Commission as a prospective verning board member is true and correct in every respect.
	02/12/2010
Sig	nature Date

David Lee Jones

Brief Resumé



Ph.D. Candidate (Educational Psychology / Measurement & Methodology) - not completed: University of Arizona

Post-Baccalaureate Program (Teacher Certification) - Arizona Teacher Certification - Standard K-8: University of Arizona

MFA (Research Assistantship; Teaching Assistantship; Alumni Grants): University of Arizona

BA: Utah State University

Professional Overview

Experience in The Field of Education

Chief Executive Officer; Headmaster; Charter Holder (K-12)

Accelerated Elementary and Secondary Schools: 5245 N. Camino de Oeste, Tucson, Arizona

Accelerated Learning Laboratory Elementary School Accelerated Learning Laboratory Secondary School

In-service Provider

Instructor: Taught post-graduate Career Ladder Classes; open district wide

Provided: In situ demonstrational modeling and instructional coaching; project schools Directed: In-service project design and teacher training on campus; project schools

Tucson Unified School District: Tucson, AZ

Hayden-Winkleman Unified School District: Gila County, AZ

Marana Unified School District; Marana, AZ

Project Director/ Pedagogy and Curriculum Development

Cognitive Learning Project (project schools and districts):

Accelerated Elementary and Secondary Schools: Tucson, AZ Tucson Unified School District (multiple school sites): Tucson, AZ

Castle Hill (one site private school): Tucson, AZ Satori (one site private school for the gifted): Tucson, AZ

Lushan International Experimental School (one site public/private K-12 school): Hunan Province, China

Shazitang Primary School (one site public/private school): Hunan Province, China

Adopted K-5 Cognitive Learning Math Curriculum (author, math text book series)

Tucson Unified School District: Tucson, AZ

Consultant; Educational Software Design and Development: Mindplay / Methods and Solutions: Tucson, Arizona

Significant contributor to software titles including: Fraction-Oids; Fraction-Oids II; Fraction-Oids III; Jo-Jo's Reading Rocket; Jo-Jo's Reading Ranch; Jo-Jo's Reading Circus; Jo-Jo's Reading River; Jo-Jo's Reading Castle, Ace Reporter, etc.

Interim Principal / consultant: Systems Evaluator, Teacher Evaluations; Instructional Design and Implementation

Tucson Urban League (middle and high school): 2305 South Park, Tucson, AZ

Director of Education

Tucson Museum of Art School: Tucson, AZ

Instructor

University of Arizona: Tucson, AZ Pima Community College: Tucson, AZ Tucson Museum of Art School: Tucson, AZ

Additional Professional Experience

Editor-in-Chief

Arizona Artist (Bimonthly Publication); Tucson, AZ. Exclusive Interviews: Agnes Martin, Helen Frankenthaler, John Perrault,

Consultant: miscellaneous services

Southwestern Film Consortium: Tucson, AZ

Old Pueblo Museum: Tucson, AZ

Chairperson

Tucson Visiting Artist Consortium: Cofounder/ Board of Directors

Evan Macham Recall Committee (Tucson Chapter)/ Board of Directors

Caucus Chairperson; Delegate Selection Chairperson; Arizona Legislative District 11

Committee Member / Board Member

Arizona Commission on the Arts and Humanities Awards Committee

Executive Agenda Planning Committeeman

Tucson Commission on the Arts and Culture: committee member

Coalition for Human Services Tucson, AZ: committee member

Precinct Committeeman

The Coalition for Technology in Education of Southwestern Arizona: Board of Directors

Accelerated Elementary and Secondary Schools: Board of Directors

Institutional Grants / RFP & Independently Initiated: Author / Often Project Director

Federal: Comprehensive Employment and Training Act, project director

National Endowment for the Arts: Many, project director

Arizona Commission on the Arts: Many, project director

Panel Member / Presenter / Invited Speaker

Multiple Intelligence Conferences (3)

Association of University Women Colloquium

Arts Education Colloquium

AAAE Conference

Artist-in-Residence: National Endowment for the Arts: Arizona

Property Development

Eaglesmere Subdivision; Partner: Tucson, AZ.

Design Consultants; Principal Pattner: Tucson, AZ

Board Member Information

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All forms must be signed by hand.

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the go pu	e purpose of this questionnaire is twofold: 1) to give application reviewers a clearer introduction to e team behind each school proposal in advance of the applicant interview; and 2) to encourage verning board members to reflect individually, as well as collectively, on their common mission, rposes, and obligations at the earliest stage of school development. Please add the full name of your nool to the footer of this document so that it appears on all pages.
	Background
1.	Name of charter school on whose governing board you intend to serve: Accelerated Learning Laboratory-Hawaii
2.	Contact information:
	Name: Marcus Calhoun-Lopez Phone: E-mail:
3.	Describe your educational and employment history. No narrative response is required if a resume and professional biography are attached. Resume and professional bio are attached to this form.
4.	Indicate whether you currently or have previously served on a board of a school district, another charter school, a non-public school, or any nonprofit organization. Does not apply to me Yes
5.	Why do you wish to serve on the governing board of the proposed charter school?
	Effective education is the bedrock upon which economic, scientific, and cultural success is built. Any opportunity to contribute to such a worthwhile endeavor is a privilege.
6.	What is your understanding of the appropriate role of a public charter school governing board member? The role of a public charter school governing board member is to provide regular direction, guidance, and oversight to the institution.
7,	Describe any previous experience you have that is relevant to serving on the charter school's governing board (e.g., other board service). If you have not had previous experience of this nature, explain why you have the capability to be an effective board member.
	I have not served on any other board, but I have worked on numerous advisory committees
	at both the college and secondary school level. I helped direct educational policy for

- individual students, classes, and departments.
- 8. Describe the specific knowledge and experience that you would bring to the governing board. Both of my parents are in the field of education. It was commitment to education that lifted my father and his sisters into the middle class. I joined the "family business" in sixth grade as a tutor. Since then, I have never been far from the classroom including seven years teaching secondary students (4th-12th grade). I have advanced degrees and deep knowledge in mathematics, physics, and computer science. I am also the lead developer of MARC, the student grade and record keeping software.

School Mission and Plan

1. What is your understanding of the school's mission and guiding beliefs? Simply put, I believe in the mission statement of our school:

The Accelerated Elementary and Secondary Schools community will demonstrate that children exhibit gifted level performance when a comprehensive curriculum is coupled with pedagogy based on scientifically sound theories of human learning. Our educational model will demonstrate that curricular design and instructional practices are the predominant factors influencing academic performance, rather than ethnicity, social status, economic privilege, or gender. We embrace the tenet that all children exhibit brilliance when their innate talents are nurtured in a challenging, supportive, and civil environment. AESS shall introduce a 21st Century educational model in which student performance exceeds all previous outcomes.

- 2. What is your understanding of the school's proposed academic plan? Our curriculum is developed by its board members, who are experts in their fields. It uses well-established scientific principles of human learning to maximize the efficiency with which students acquire new knowledge. It harnesses the power of group instruction (need-to-know and corralling exercises) without sacrificing the needs of any individual student (students can be on different Expert Trials within the same class). It maximizes motivation by, for example, providing immediate feedback and removing the ceiling effect. The academic plan also incorporates the direct teaching of metacognitive and soft skills, essentially teaching students how to be more effective students.
- 3. What do you believe to be the characteristics of a successful school? A successful school provides a risk-free environment in which all students are succeeding. This is best achieved when a school is dedicated to its educational mission, is financially stable, retains top teaching talent, and has close connections to the community it serves.
- 4. How will you know that the school is succeeding or is not succeeding in its mission? The school is succeeding if the students are succeeding. Some metrics of student success are scores on standardized tests, progress through the curriculum, acceptances into colleges, high scores on Teacher/Student satisfaction surveys, and success in extracurricular activities (e.g. the Science Olympiad).

Governance

- Describe the role that the governing board will play in the school's operation.
 A governing board helps formulate goals for the school. It assists in the design of strategies to achieve those goals. It regularly ensures that adequate progress is being made towards those goals.
- 2. How will you know if the school is successful at the end of the first year of operation? The students should be doing well on summative assessments (e.g. standardized tests). The students should be making adequate progress through the curriculum. Both student and parent satisfaction should be high. We should have both parents and students excited about coming back for a second year.
- 3. How will you know at the end of five years if the school is successful? The student should be excelling on summative assessments (e.g. standardized tests). The students should not only be progressing but accelerating through the curriculum. Parent/Student satisfaction should be high with word-of-mouth encouraging new students to attend the school.
- 4. What specific steps do you think the governing board will need to take to ensure that the school is successful?

 The governing board can ask difficult questions, offer constructive criticism, and propose solutions to problems. If, for example, the number Expert Trials passed per week is too low, we know there is a problem. Not only are the students not gaining the skills they need, but, perhaps worse, they could easily lose motivation. Our online grading system automatically flags such cases, and we can take corrective action before a small problem becomes large.
- 5. How would you handle a situation in which you believe one or more members of the governing board were acting unethically or not in the best interests of the school?
 No institution long endures without trust. Any ethics violation undermines trust and must be taken seriously. If I became aware of such a violation, I would follow the procedures outlined in the Bylaws and Ethics Rules and attempt to resolve the situation in an open and honest manner.

Disclosures

	Disclosures
1.	Indicate whether you or your spouse knows the other prospective governing board members for the proposed school. If so, please indicate the precise nature of your relationship. I/we do not know these individuals Yes
	I have a professional, working relationship with Olga, David, Serei, and Jennifer.
2.	Indicate whether you or your spouse knows any person who is, or has been in the last two years, a school employee. If so, indicate the precise nature of your relationship. I/we do not know any such employees Yes I am an employee of a school, but not ALL-Hawaii. At least one of my coworkers is listed as a potential employee of ALL-Hawaii.
3.	Indicate whether you or your spouse knows anyone who is doing, or plans to do, business with the charter

Sig	nature		10	Date	
I				2/12/2016	
tne	information i a	m providing to the State I ember is true and correct	ublic Charter Scho	ool Commission as a prospective	
l,_	Marcus	Calhoun-Lapez	, certify to the	he best of my knowledge and ability that	
			Certification		
9.	Indicate any pot the school's gov None ☐ Y	erning board.	ts of interests that w	vould or are likely to exist should you serve on	
	the second of th	of my coworkers is listed		mployee of ALL-Hawaii.	
8.	partner, or men school. To the	ber of, or are otherwise ass	ociated with, any org s information in resp	nembers are a director, officer, employee, ganization that is partnering with the charter bonse to prior items, you may so indicate.	
		ve or my family do not antici	그리가 이 되는데 이 이 프랑스 그는 그 없는 그는데	a de vidente de la companya del companya de la companya del companya de la compan	
7.	immediate fami		cting, or are conduct	r, indicate if you, your spouse, or other ting, any business with the provider. If so,	
0.	If the school contracts with an education service provider, please indicate whether you, your spouse, or other immediate family members have a direct or indirect ownership, employment, contractual, or management interest in the provider. For any interest indicated, provide a detailed description. N/A. I/we have no such interest Yes				
				:	
	management or			t with an education service provider or school	
5.	whether you or		oloyees, officers, own	der or management organization, indicate ners, directors, or agents of that provider. If nship.	
4.	business with th		precise nature of the	s anticipate conducting, or are conducting, any e business that is being or will be conducted.	
	At least one	of my coworkers is lister	d as a potential er	mployee of ALL-Hawaii.	
	☑ I/we do not	know any such persons	Yes	THE RESERVE OF THE PERSON OF T	
	describe the pro-		ship and the nature o	ree, or agent of an entity). If so, indicate and of the business that such person or entity is	

[ALL-Hawaii]

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Marcus Calhoun-Lopez



Education IOWA STATE UNIVERSITY

Ames, IA

Ph.D. in Applied Mathematics in the summer of 2003.

IOWA STATE UNIVERSITY

Ames, IA

M.S. in Applied Mathematics in the summer of 2001.

Minor in physics.

UNIVERSITY OF CHICAGO

Chicago, IL

B.S. in Applied Mathematics in the spring of 1999.

Qualified for B.S. in pure mathematics.

Qualified for B.A. in physics.

Research Experience

JEANSEE CORPORATION

Rome, NY

2008-2009

Contractor at the Rome Air Force Research Lab

UNIVERSITY OF NEW MEXICO

Albuquerque, NM

2006-2008

Graduate Student in Computer Science

UNIVERSITY OF MARYLAND

College Park, MD

2003-2006

VIGRE Postdoctoral Associate

SANDIA NATIONAL LABORATORIES

Albuquerque, NM

Summer of 2002–Spring of 2003

Student Internship Program

IOWA STATE UNIVERSITY

Ames, IA

2001-2003

Ph.D. Thesis:

Numerical Simulations of Hyperbolic Conservation Laws: Incorporating Multi-Resolution Viscosity Methods into the Finite Element Framework

SANDIA NATIONAL LABORATORIES

Albuquerque, NM

Summer of 2001

Student Internship Program at Sandia National Laboratories

IOWA STATE UNIVERSITY

Ames, IA

2000-2001

Master of Science Thesis:

Numerical Simulations of Superconducting Rings

Using a Ginzburg-Landau Model

IOWA STATE UNIVERSITY

Ames, IA

Summer of 1998

Research Experience for Undergraduates

Teaching Experience

ACCELERATED LEARNING LABORATORY

Tucson, AZ

2009 -

Teacher, Head of the STEM Programs, Science Olympiad Coach, Senior Research Project Advisor, College Mentor

SUNY GENESEO

Geneseo, NY

Summer of 2009

Advisor to Summer Research Students

UNIVERSITY OF MARYLAND

College Park, MD

2003-2006

Taught Courses in

- Ordinary Differential Equations
- Elementary Calculus
- Differential Equations for Scientists and Engineers
- Geometry for Computer Graphics
 (A discontinued class until I resurrected it)
- Introduction to Analysis
- Multivariable Calculus, Linear Algebra,
 & Differential Equations (Honors)

IOWA STATE UNIVERSITY

Ames, IA

1999-2002

Teaching Assistant

IOWA STATE UNIVERSITY

Ames, IA

Summer of 2000

Research Experience of Undergraduates Assistant

UNIVERSITY OF CHICAGO

Chicago, IL

1997-1999

Junior Tutor (Calculus Teaching Assistant)

Programming Skills

C, C++, Fortran 77/90, Java, Matlab, OpenMP, MPI, HTML, LATEX, PHP, SQL

Talks and Presentations

- Teacher Inservice Training, Accelerated Learning Laboratory, August 2014, August 2015
- Student Learning Objectives, Presentation to Arizona Educational Officials, Accelerated Learning Laboratory, August 2013
- College Night: How to Get Into College and What to Expect Once You Get There, Accelerated Learning Laboratory, June 2013
- The NSF Workshop on Emerging Models and Technologies for Computation: Bio-Inspired Computing and the Biology and Computer Science Interface, Poster Presentation, Princeton University, July 2008
- The 13th International Meeting on DNA Computing, Poster Presentation, University of Memphis, June 2007
- Embarking on a Mathematical Career, Panel Member, University of Maryland, October 2005
- Numerical Analysis Conference, University of Dundee, July 2005
- Numerical Analysis Seminar, North Carolina State University, April 2005
- Applied and Computational Mathematics Seminar, University of Tulane, April 2005
- PDE & Numerical Methods Seminar, Penn State University, February 2005
- Computer Programming for Mathematicians: Is There Anything Besides Matlab?, Multi-lecture Minicourse, University of Maryland, February 2005

- Preparing for Life Beyond Graduate School, Panel Member, University of Maryland, November 2004
- Numerical Analysis Seminar, University of Maryland, September 2003

Papers

- Numerical Simulations of Superconducting Rings using the Finite Element Method
- A finite element, multi-resolution viscosity method for hyperbolic conservation laws; SIAM Journal on Numerical Analysis
- The efficient implementation of a finite-element, multi-resolution viscosity method for nonlinear conservation laws; Journal of Computational Physics
- Reaction Simulations: A Rapid Development Framework
- A Simplified Mathematical Framework for XYZ to Spectrum Conversions; Submitted

Awards

New Mexico Information Technology Fellowship (2006–2007)

Alberta Wolfe Scholarship (1999–2002)

Henry Thielman Award for Outstanding Work by an M.S. Student (2001)

SIP 2001 Symposium Presentation Award (2001)

Graduate College TA Award (1999)

Software

MARC (Measurement and Analysis Report Compiler): an automated data analysis and management system for student records and grades

Grants

Qwest/AzTEA Classroom Technology Integration Project: Ray Tracing a Path to the Future (2011)

Board Member Information

To be completed individually by each Applicant Governing Board member. All forms must be signed by hand.

Serving on a public charter school governing board is a position of public trust and fiduciary responsibility. As a governing board member of a public school, you are responsible for ensuring the quality of the school's plans, competent stewardship of public funds, and the school's fulfillment of its public obligations and all terms of its Charter Contract.

As part of the application for a new charter school, the Commission requests that each prospective governing board member respond individually to this questionnaire. Where narrative responses are required, brief responses are sufficient.

The purpose of this questionnaire is twofold: 1) to give application reviewers a clearer introduction to

the go pu	e team behind each school proposal in advance of the applicant interview; and 2) to encourage verning board members to reflect individually, as well as collectively, on their common mission, rposes, and obligations at the earliest stage of school development. Please add the full name of you nool to the footer of this document so that it appears on all pages.
1.	Background Name of charter school on whose governing board you intend to serve: Accelerated Learning Laboratory-Hawaii
2.	Contact information: Name: Jennifer Wittman Phone France: E-mail
3.	Describe your educational and employment history. No narrative response is required if a resume and professional biography are attached. Resume and professional bio are attached to this form.
4.	Indicate whether you currently or have previously served on a board of a school district, another charter school, a non-public school, or any nonprofit organization. Does not apply to me Yes
5.	Why do you wish to serve on the governing board of the proposed charter school? I want to have a greater impact within the field of education, and I want to serve the community by contributing my time, experiences, and effort to a school whose vision and mission I believe in.
6.	What is your understanding of the appropriate role of a public charter school governing board member? A governing board member's role is to assist the school in its mission to provide a high quality education to its students. The Board's role is to help formulate and choose strategies that will allow ALL to reach its academic goals, to provide critical feedback and to monitor and evaluate the school's effectiveness. As such, the role of individual members is to strictly adhere to the Board's bylaws, the state's regulations, and the school's mission. Specifically, I believe that a board member does this by remaining neutral, being honest about conflicts of interest, and putting the school's wellbeing above personal preference.

[ALL-Hawaii]

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- 7. Describe any previous experience you have that is relevant to serving on the charter school's governing board (e.g., other board service). If you have not had previous experience of this nature, explain why you have the capability to be an effective board member.
 While I have not served on any other board, I have worked in an advisory capacity within the legal and educational fields. I understand that critical feedback—both positive and negative—is vital to long term success. Further, I am familiar and comfortable with statutory guidelines, legal issues, and ethical guidelines, as I've received my law degree and passed the Bar exam. My sincere desire to impact education, paired with my practical and educational background, give me a skillset that will allow me to serve as an effective board member.
 - 8. Describe the specific knowledge and experience that you would bring to the governing board. I have hands on training in education—both in training and teaching. I have hands on experience working in the legal field—both civil and criminal. I was raised on various Native American reservations, so I understand the unique academic needs and issues that arise in non-traditional school districts. Most importantly, I have seen just how vital a quality education is to a community, as I grew up attending schools where the students were overlooked and discounted due to either their "at-risk" community or their "strange" cultural beliefs and traditions.

School Mission and Plan

- 1. What is your understanding of the school's mission and guiding beliefs? The school's mission is to provide all students equal access to the most effective education that the nation can offer, regardless of their social, economic, or cultural status. Specifically, it is guided by cognitive science, and it applies innovative, scientifically supported methods to its curriculum and implementation. Finally, its goal is to share this data with other educational entities, so that its outcomes can lead to benefits for other students across the nation.
- 2. What is your understanding of the school's proposed academic plan? The school employs a curriculum that is custom developed by several of the applicant board members. The curriculum utilizes Cognitive Science Research and Best Instructional Practices in its Expert and Trial series. It removes the ceiling effect of the educational process, which allows students to control their academic growth at a rate that is impossible in a traditional school setting. It emphasizes metacognition and soft skills, so that its students acquire not just content, but efficient and sound learning methods.
- 3. What do you believe to be the characteristics of a successful school? A successful school must be solvent, stable, and willing to create a learning-oriented environment that pushes the students while honoring the community from which the students are from. A school cannot effectively work alone—a student is most successful when the school is part of his or her community, which supports and drives him or her to success. Therefore, a successful school integrates into its community, which ensures its solvency and stability, while the community benefits from a local and rigorous learning

environment.

4. How will you know that the school is succeeding or is not succeeding in its mission? Student outcome is the most neutral starting point for evaluating a school's success. Whether it be growth scores or high percentiles on various exams, the school is only as successful as its students. In this case, ALL specifically strives to offer a competitive, rigorous education to its students, so initial student growth, paired with long term trends toward high performing students, will be strong indications of success. Obviously, the board will also employ specific evaluation materials that will use data to assess how the school is progressing towards its goals.

Governance

- Describe the role that the governing board will play in the school's operation.
 A governing board's role is to assist the school in its mission to provide a high quality education to its students. The Board's role is to help formulate and choose strategies that will lead the school to reaching its academic goals, to provide critical feedback and to monitor and evaluate the school's effectiveness.
- 2. How will you know if the school is successful at the end of the first year of operation? At the end of the first year, the evaluation protocols in place should clearly indicate its success. Financially it should be solvent. Academically, the students should meet the school's year 1 goals. As an organization, it should have met its requirements and deadlines with the State of Hawaii. Ideally, it will have also achieved more intangible success—its reputation within the community should be established as one of academic integrity and rigor.
- 3. How will you know at the end of five years if the school is successful? The most obvious sign of success would be a renewal of the charter contract. Second, the annual evaluations would indicate that the school is still on-track and successful. Finally, its students will be doing better than they were in year 1, and the school will, hopefully, be a valued asset to its community.
- 4. What specific steps do you think the governing board will need to take to ensure that the school is successful?

 I think it's most important role will be critical, knowledgeable, and sometimes blunt feedback. A school is a gigantic undertaking, and the governing board is tasked with watching the big picture, which is sometimes hard for the staff to see, as they are inundated with the day to day affairs of the school. Recognizing and taking initiative to anticipate issues and guide the school is, I believe, an important responsibility of the governing board.
- 5. How would you handle a situation in which you believe one or more members of the governing board were acting unethically or not in the best interests of the school?
 Any questions of ethical issues within the board will be attributed to the school, so it is vital to handle such matters openly, honestly, and fairly. I'd turn to the Bylaws, Ethic's

[ALL-Hawaii]

Rules, and I'd follow the procedure that would allow me to bring it to the board's collective attention as soon as possible.

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Indicate whether you or your spouse knows the other prospective governing board members for the proposed school. If so, please indicate the precise nature of your relationship. I/we do not know these individuals Yes
I have a professional, working relationship with Olga, David, Serei, and Marcus.
Indicate whether you or your spouse knows any person who is, or has been in the last two years, a school employee. If so, indicate the precise nature of your relationship.
☐ I/we do not know any such employees ☑ Yes
ersonally am an employee of a school, but not ALL-Hawaii. However, I am listed as a potential employee of ALL- Hawaii on its application.
Indicate whether you or your spouse knows anyone who is doing, or plans to do, business with the charter school (whether as an individual or as a director, officer, employee, or agent of an entity). If so, indicate and describe the precise nature of your relationship and the nature of the business that such person or entity is transacting or will be transacting with the school. I/we do not know any such persons Yes
Indicate if you, your spouse, or other immediate family members anticipate conducting, or are conducting, any business with the school. If so, indicate the precise nature of the business that is being or will be conducted. [] I/we do not anticipate conducting any such business Yes
I am currently listed as the School's Director on the ALL-Hawaii Application.
If the school intends to contract with an education service provider or management organization, indicate whether you or your spouse knows any employees, officers, owners, directors, or agents of that provider. If the answer is in the affirmative, please describe any such relationship.
 ✓ Not applicable because the school does not intend to contact with an education service provider or school management organization. ✓ I/we do not know any such persons
If the school contracts with an education service provider, please indicate whether you, your spouse, or other immediate family members have a direct or indirect ownership, employment, contractual, or management interest in the provider. For any interest indicated, provide a detailed description. N/A. I/we have no such interest Yes
If the school plans to contract with an education service provider, indicate if you, your spouse, or other immediate family member anticipate conducting, or are conducting, any business with the provider. If so, indicate the precise nature of the business that is being or will be conducted.
N/A
Indicate whether you, your spouse, or other immediate family members are a director, officer, employee, partner, or member of, or are otherwise associated with, any organization that is partnering with the charter school. To the extent you have provided this information in response to prior items, you may so indicate. Does not apply to me, my spouse or family X Yes
ndicated above, the ALL-Hawaii application lists me as an applicant board member, the school's primary contact, and the school's director.
Indicate any potential ethical or legal conflicts of interests that would or are likely to exist should you serve on the school's governing board.
.L-Hawaii] Attachment U – Page 4

Attachment U - Page 4

☐ Nor	ne 🛛 Yes					
		potential employme	nt by the school w	ould require me to	abstain from ma	atters that
conflict	with my role as	School Director.				
			Contification			
5	-0-	10 - 1	Certification			
15 PMV	VIJOR	W. The	W certify to	the best of my k	nowledge and	ability that
the informa	ation I am prov	iding to the State	Public Charter Sch	nool Commission	as a prospectiv	/e
		is true and correct	and the second s		A 20 10 10 10 10 10 10 10 10 10 10 10 10 10	
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JENNIFER A. WITTMAN

EDUCATION

University of Arizona James E. Rogers College of Law, Tucson, AZ

Juris Doctor, May 2011

- Passed the Summer 2011 Bar Exam
- Bertha B. Hollis Native American Scholarship recipient
- Volunteer Lawyers Program, Outstanding Student of the Month Award
- 2L Moot Court, Volunteer Lawyer Program Child Support Clinic, Primavera Men's Shelter Legal Referral Clinic, Phi Alpha Delta Legal Fraternity, Student Bar Association, Latino Law Student Association, Gonzales-Villarreal Bridge Program

University of Arizona, Tucson, AZ

Bachelor of Arts, Creative Writing, May 2008

☐ Dean's List: Fall '04, Spring '05, Fall '05, Spring '06; UA Provost Scholarship (Full Tuition); UA Spirit of Discovery Scholarship; Robert C. Byrd Scholarship

EXPERIENCE

ENGLISH DEPARTMENT HEAD & INSTRUCTOR, ALL Tucson

(August 2011-present)

Developed curriculum for differentiated instruction. Taught classes comprised of multiple grade levels and ranges. Trained and received training in Cognitive Research based Teaching Methodology and Implementation. Taught ages 11 to 18. Debate Coach. Mentored new teachers in curriculum implementation.

Project Based Research, Tucson, AZ

Sarbane-Oxley Research (April 2011-August 2011)

Performed project based research for former Department of Labor ARB Judge in regards to Sarbane Oxley changes occurring after he left the Board. Researched new and impending legislation, as well as how those changes have been interpreted and how they alter procedure and grounds of potential lawsuits.

Pima County Public Defender's Office: Felony Division, Tucson, AZ

38(d) Student Lawyer with Michael Rosenbluth (January 2010-July 2010)

Co-counsel on two criminal trials: 1) prohibited possession 2) kidnapping, aggravated assault with a deadly weapon, domestic violence. Not guilty on kidnapping and aggravated assault with deadly weapon charges. Argued purposeful destruction of evidence motion for dui/manslaughter case. Researched, drafted and edited numerous motions for all ranges of criminal cases and argued hearings for all stages of criminal defense. Successfully argued for a class six open to be designated a misdemeanor at sentencing. Researched and wrote mitigation memos and conducted the sentencing hearing. Interviewed clients, witnesses, and deputies.

JENNIFER A. WITTMAN

EXPERIENCE CONT.

City of Tucson Public Defenders Office, Tucson, AZ

Summer Intern (June 2009-July 2009)

Performed detailed statutory research and drafted motions on various matters, including DUI, assault, domestic violence, animal laws, jurisdiction, and sentencing. City Judge granted motion to withdraw plea. Drafted an appeal. Reviewed police interviews and evidence interrogatories for trial. Observed all stages of court proceedings.

Yanker Law Firm, Tucson, AZ

Administrative Associate (June 2006-August 2008)

Trained and supervised administrative associates. Researched trust, tax, and intellectual property issues. Prepared client documentation for civil litigation. Drafted trust and will documents. Managed Tucson office.

Catalina Foothills Unified School District, Tucson, AZ

C.A.R.E. Program Aide (August 2005-May 2006)

Supervised elementary school students in before and after school programs. Created and led student activities. Provided homework help, interacted with parents and school employees.

St. Michael's Day School, Tucson, AZ

Assistant Softball Coach (October 2004-January 2005)

Created and implemented junior varsity middle school squad practice program. Worked with Varsity coach to coordinate overall practice schedule. Interacted with students, parents, and school employees.

VOLUNTEER WORK

City of Tucson Homeless Court

Volunteer Advocate on behalf of homeless clients in need of legal services

Sunnyside School District, Tucson, AZ

Latino Law Student Association: Career Information Sessions (September 2008-May 2011)

AZSportsNetwork, Tucson, AZ

Chess camp coach

Gospel Rescue Missions, Tucson, AZ

Holiday Server & Volunteer

Board Member Information

To be completed individually by each Applicant Governing Board member. All forms must be signed by hand.

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As part of the application for a new charter school, the Commission requests that each prospective governing board member respond individually to this questionnaire. Where narrative responses are required, brief responses are sufficient.

The purpose of this questionnaire is twofold: 1) to give application reviewers a clearer introduction to the team behind each school proposal in advance of the applicant interview; and 2) to encourage governing board members to reflect individually, as well as collectively, on their common mission, purposes, and obligations at the earliest stage of school development. Please add the full name of your school to the footer of this document so that it appears on all pages.

Background

1. Name of charter school on whose governing board you intend to serve:

	Accelerated Learning Laboratory – Hawaii
2.	Contact information:
	Name: Olga McDaniel Phone: E-mail:
3.	Describe your educational and employment history. No narrative response is required if a resume and professional biography are attached.
	Resume and professional bio are attached to this form.
4.	Indicate whether you currently or have previously served on a board of a school district, another charter school, a non-public school, or any nonprofit organization. Does not apply to me Yes
5.	Why do you wish to serve on the governing board of the proposed charter school?
	I believe in vision and mission of the proposed school, and I am confident that my expertise in accounting and finance will be great contribution to assist the school in its mission to provide a high quality education to its students.
6.	What is your understanding of the appropriate role of a public charter school governing board member?
	Role of a public charter school governing board member is acting effectively and ethically in

their duties related to overseeing the school's mission, fiscal integrity, and educational quality, and to recruiting, supporting, and evaluating the chief executive. Public board have the additional responsibilities of maintaining the public trust and balancing the needs of the state of Hawaii and the school, pursuing what is best for the public they serve and the school they govern.

7. Describe any previous experience you have that is relevant to serving on the charter school's governing board (e.g., other board service). If you have not had previous experience of this nature, explain why you have the capability to be an effective board member.

While I have not served on any other board, I have worked in an advisory capacity within financial and accounting field for Accelerated Learning Laboratory for more than 3 years. I have more than 15 years of education and experience in Statistics, Accounting and Finance, that will allow me to serve effectively on the school's governing board. I am hardworking and have earned a reputation as a dependable and creative problem solver. My experience and contacts have prepared me for this step in my career.

8. Describe the specific knowledge and experience that you would bring to the governing board.

I will be a key member of the Finance Team. Through successful relationship building and business partnering with all levels of the organization, my role will provide forecasting, reporting, analysis and decision support for school and central office finance unit.

School Mission and Plan

What is your understanding of the school's mission and guiding beliefs?

The school's mission is to provide all students equal access to the most effective education that the nation can offer, regardless of their social, economic, or cultural status. Our goal is to share our expertise with other educational institutions, so other students nationwide could benefit as well.

2. What is your understanding of the school's proposed academic plan?

The school employs a curriculum that is custom developed by several of the applicant board members. The curriculum utilizes Cognitive Science Research and Best Instructional Practices in its Expert and Trial series. It removes the ceiling effect of the educational process, which allows students to control their academic growth at a rate that is impossible in a traditional school setting. It emphasizes metacognition and soft skills, so that its students acquire not just content, but efficient and sound learning methods.

3. What do you believe to be the characteristics of a successful school?

The characteristics of a successful school are:

 Vision: having a common understanding of goals and principles for everyone on the learning community;

ALL-Hawaii

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- Leadership: having our governing board members dedicated to helping the learning community reach its vision;
- 3) High Academic Standards;
- Professional Development: providing consistent opportunities for teachers and staff to engage in continuous learning;
- 4. How will you know that the school is succeeding or is not succeeding in its mission?

As an evidence of success should be:

- Student outcome, as the most important indicator. The board will use evaluation materials, collecting and analyzing data about students, and evaluating their progress.
- 2) Collecting and analyzing data about staff;
- 3) Collecting and analyzing data about programs;
- 4) Interpreting financial data.

Governance

1. Describe the role that the governing board will play in the school's operation.

A Board's role is to assist the school in its mission to provide a high quality education to its students. The Board's role is to help formulate and choose strategies that will lead the school to reaching its academic goals, to provide critical feedback and to monitor and evaluate the school's effectiveness.

2. How will you know if the school is successful at the end of the first year of operation?

The evaluation protocols in place will indicate schools success.

- 1) Students should meet year 1 goals in academics
- ALL-Hawaii will provide to the Commission any data necessary and reasonably required by the Commission to meet its oversight and reporting obligations
- 3) Appropriate funds use
- 4) The school enrollment will not decrease.
- 3. How will you know at the end of five years if the school is successful?
 - 1) Renewal of the charter school contract
 - 2) Annual Evaluations would indicate that the school is still on-track and successful
 - 3) Students' academic progress.

Discl	osu	res
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1.	Indicate whether you or your spouse knows the other prospective governing board members for the proposed school. If so, please indicate the precise nature of your relationship. I/we do not know these individuals Yes
	Jennifer Wittman, David Jones, Serei Kay, and Marcus Calhoun-Lopez are my
	colleagues and I /we know them for more than 3 years.
	I know Peter Kwan for more than one year. Peter Kwan is working with developers and

ALL-Hawaii

the prospective school. It's mostly telephone/ e-mail correspondence. 2. Indicate whether you or your spouse knows any person who is, or has been in the last two years, a school employee. If so, indicate the precise nature of your relationship. I am an employee of a charter school, but not ALL-Hawaii. I am listed as a Board member of ALL -Hawaii on its application. 3. Indicate whether you or your spouse knows anyone who is doing, or plans to do, business with the charter school (whether as an individual or as a director, officer, employee, or agent of an entity). If so, indicate and describe the precise nature of your relationship and the nature of the business that such person or entity is transacting or will be transacting with the school. | I/we do not know any such persons | Yes 4. Indicate if you, your spouse, or other immediate family members anticipate conducting, or are conducting, any business with the school. If so, indicate the precise nature of the business that is being or will be conducted. I/we do not anticipate conducting any such business Yes 5. If the school intends to contract with an education service provider or management organization, indicate whether you or your spouse knows any employees, officers, owners, directors, or agents of that provider. If the answer is in the affirmative, please describe any such relationship. Not applicable because the school does not intend to contact with an education service provider or school management organization. I/we do not know any such persons Yes 6. If the school contracts with an education service provider, please indicate whether you, your spouse, or other immediate family members have a direct or indirect ownership, employment, contractual, or management interest in the provider. For any interest indicated, provide a detailed description. N/A. I/we have no such interest Yes If the school plans to contract with an education service provider, indicate if you, your spouse, or other immediate family member anticipate conducting, or are conducting, any business with the provider. If so, indicate the precise nature of the business that is being or will be conducted. N/A I/we or my family do not anticipate conducting any such business Yes 8. Indicate whether you, your spouse, or other immediate family members are a director, officer, employee, partner, or member of, or are otherwise associated with, any organization that is partnering with the charter school. To the extent you have provided this information in response to prior items, you may so indicate. Does not apply to me, my spouse or family X Yes 9. Indicate any potential ethical or legal conflicts of interests that would or are likely to exist should you serve on the school's governing board.

keep me posted about his / developers progress . He also provided ROM Estimate for

ALL-Hawaii

☐ None X Yes

Certification

the State Public Charter School Commission as	vledge and ability that the information I am providing to a prospective governing board member is true and
correct in every respect	02/12/2018
Signature	Date Date



OBJECTIVE

Positions that represent a good match with my background and skills are working as a Financial Analyst, Staff Accountant, Bookkeepert. I will accept full-time positions only.

SUMMARY OF QUALIFICATIONS

Qualifications include record-keeping, accounting, computer, analytical and communication skills. My base of experience includes, maintaining entire business ledger, including accounts payable and receivable, payroll, taxes preparation and pay, generating and auditing documents and financial reports, performing statistical analyses, researching discrepancies, analyzing problems and answering questions, verifying forms for accuracy and completeness.

EXPERIENCE

I have 6 years' experience in Statistics (Statistics of Labor) and 2 years' experience in Accounting. A considerable amount of this experience came while employed with Ukrainian Government, Department of Statistics, Kharkov, Ukraine.

2012-now Finance Administrator(Accelerated Elementary and Secondary Schools)

Director (Accelerated Learning laboratory Preschool)

Accelerated Elementary and Secondary Schools

Accelerated Learning Laboratory Preschool

Tucson, AZ

My present duties include maintaining entire business ledger for two separate businesses- the Charter School and the Preschool. I maintain Accounts Payable and Accounts Receivable. I do billing for Preschool tultion and aftercare programs on monthly basis. Collections. Bi-weekly payroll processing for ALL Preschool. Sending PR data to PR Company bi-weekly for the Charter School; accordingly GL entry of payroll data on monthly basis (from database that I have received from Compupay Inc.) Monthly Bank Reconciliation of bank accounts and credit cards(6 accounts). Processing and paying payroll taxes, and TRT-1. Reporting Form 1099. Payment plan tracking and Collections. Charter School Annual Budget and Annual Financial Report, other financial reports. Grants application / grants management (federal and state funding). I'm proficient in QUICKBOOKS, Excell Spreadsheet software, Word Processing software, MS OUTLOOK.

2011-2012 Accounting Assistant

Tucson Greyhound Park

Tucson, AZ

Assisting the controller in all aspects of general accounting. Accounts Payable and Accounts Receivable. Bi-weekly payroll processing and payroll taxes. Preparing and pay sales and gambling taxes. Filing and data entry.

I used CYMA Accounting Software, MS WORD, MS EXCELL, MS Outlook, DOS.

2010-2011 Branch Associate,

BBVA Compass Bank,

Tucson, AZ

Provide an exceptional customer experience. Perform all paying and receiving functions within delegated authority levels. Serve as the primary customer service personnel in the branch. Make sales referrals to FSA, PRM, ABM, and BRE. Answer general branch telephone inquiries and refer to appropriate channel if needed. Make risk assessments on transactions based on delegated authorities. Support the branch team by obtaining referral goals and participate in targeted sales campaigns.

2003-2008 Statistics Specialist 1 (Statistics of Labor Department)

Kharkov Department of Statistics,

Kharkov, Ukraine

Collecting and checking statistical reports (Statistics of Labor) from firms and organizations of city of Kharkov (Ukraine). Data entry. Prepared documents, and reports which statistically described the economic activity for the city and region of Kharkov. Audit.

EDUCATION AND TRAINING

Kharkov National University of Karazin, Kharkov, Ukraine, 09/01/1997-07/05/2002

Graduated with honors (gold level), in Economics and Statistics (Bachelor's degree).

Fluent in Russian, Ukrainian and English. TOEFL iBT score is 78 out of 120 (as of 02/26/2010).

Notes:

US Citizen.

References available upon request.

Board Member Information

To be sompleted individually by each Applicant Governing Board member.

All forms must be signed by hand.

Serving on a public charter school governing board is a position of public trust and fiduciary responsibility. As a governing board member of a public school, you are responsible for ensuring the quality of the school's plans, competent stewardship of public funds, and the school's fulfillment of its public obligations and all terms of its Charter Contract.

As part of the application for a new charter school, the Commission requests that each prospective governing board member respond individually to this questionnaire. Where narrative responses are required, brief responses are sufficient.

the gove	purpose of this questionnaire is twofold: 1) to give application reviewers a clearer introduction to team behind each school proposal in advance of the applicant interview; and 2) to encourage erning board members to reflect individually, as well as collectively, on their common mission, poses, and obligations at the earliest stage of school development. Please add the full name of your pol to the footer of this document so that it appears on all pages.
	Background
	Name of charter school on whose governing board you intend to serve: Accelerated Learning Laboratory-Hawaii
2.	Contact information: Name: Michael Todnem
	Phone: E-mail:
	Describe your educational and employment history. No narrative response is required if a resume and professional biography are attached.
	Resume and professional bio are attached to this form.
	Indicate whether you currently or have previously served on a board of a school district, another charter school, a non-public school, or any nonprofit organization. Does not apply to me X Yes
	Why do you wish to serve on the governing board of the proposed charter school? I value education, and want to contribute my time, experiences, and effort to a school whose vision and mission I believe in.
	What is your understanding of the appropriate role of a public charter school governing board member? A governing board member's role is to assist the school in its mission to provide a high quality education to its students. It must provide evaluations, feedback, and critical guidance. It must serve as a voice for the community
	Describe any previous experience you have that is relevant to serving on the charter school's governing board (e.g., other board service). If you have not had previous experience of this nature, explain why you have the capability to be an effective board member. I have years of experience working for and with government entities, dealing with constituents and their concerns. I speak regularly with

Attachment U - Page 1

Home Owners Associations and Boards/Commissions on problem resolution within budgetary constraints. Additionally, my son attended this school with outstanding results, I believe in this school and the opportunities it presents for success.

8. Describe the specific knowledge and experience that you would bring to the governing board.
I have experience serving as a board member, experience in financial management, and have experienced the educational field from a parent's perspective.

School Mission and Plan

- What is your understanding of the school's mission and guiding beliefs?
 The school's mission is to provide all students equal access to the most effective education that the nation can offer, regardless of their social, economic, or cultural status. It uses cognitive science. The school's goal is to improve the field of education.
- 2. What is your understanding of the school's proposed academic plan? The school employs a curriculum that is custom developed by various board members, and it applies Cognitive Science. Each class has experts and challenges, which allow the students to progress at amazing rates, and to develop their skillset regardless of how low they are or what grade level they are "supposed" to be at.
- What do you believe to be the characteristics of a successful school?
 A successful school must be responsible, stable, and oriented towards the needs of the students.
- 4. How will you know that the school is succeeding or is not succeeding in its mission? Community reputation and student success is informal but telling in regards to a school's success. More formally, evaluation protocols should very clearly indicate the school's success.

Governance

- Describe the role that the governing board will play in the school's operation.
 A governing board's role is to assist the school in its mission and help lead the school to success. It must evaluate and guide the school.
- 2. How will you know if the school is successful at the end of the first year of operation? It will have met its obligations to the state, maintained financial stability, demonstrated student growth and achievement, and have a group of students eager to reenroll for the following school year. And, the evaluation will formally reflect the success of the organization.
- How will you know at the end of five years if the school is successful?
 The school will be stable, and have a positive evaluations from year to year. The school will be successful if it gets its contract renewed.
- 4. What specific steps do you think the governing board will need to take to ensure that the school is

[ALL-Hawait]

Attachment U - Page 2

	successful? The board must be ethical, responsible, and take the initiative to provide useful, applicable
	feedback as soon as Year O begins,
5.	How would you handle a situation in which you believe one or more members of the governing board were acting unethically or not in the best interests of the school?
	Issues of ethics should be brought to the attention of the board, and ethics policies and
	policies should be applied to resolve the problem.
	Disclosures
1.	Indicate whether you or your spouse knows the other prospective governing board members for the proposed school. If so, please indicate the precise nature of your relationship.
	☐ I/we do not know these individuals ☑ Yes
	I have served on a board with David and Serei.
2.	Indicate whether you or your spouse knows any person who is, or has been in the last two years, a school employee. If so, indicate the precise nature of your relationship.
	I/we do not know any such employees Yes
3.	Indicate whether you or your spouse knows anyone who is doing, or plans to do, business with the charter
	school (whether as an individual or as a director, officer, employee, or agent of an entity). If so, indicate and describe the precise nature of your relationship and the nature of the business that such person or entity is
	transacting or will be transacting with the school.
	☐ I/we do not know any such persons ☐ Yes
4.	Indicate if you, your spouse, or other immediate family members anticipate conducting, or are conducting, any business with the school. If so, indicate the precise nature of the business that is being or will be conducted.
	I/we do not anticipate conducting any such business
5.	If the school intends to contract with an education service provider or management organization, indicate
	whether you or your spouse knows any employees, officers, owners, directors, or agents of that provider. If the answer is in the affirmative, please describe any such relationship.
	Not applicable because the school does not intend to contact with an education service provider or school
	management organization. I/we do not know any such persons Yes
	4. 프레이어 전 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.
6.	If the school contracts with an education service provider, please indicate whether you, your spouse, or other immediate family members have a direct or indirect ownership, employment, contractual, or management
	interest in the provider. For any interest indicated, provide a detailed description.
	☐ N/A. ☑ I/we have no such interest ☐ Yes
7.	If the school plans to contract with an education service provider, indicate if you, your spouse, or other
	immediate family member anticipate conducting, or are conducting, any business with the provider. If so, indicate the precise nature of the business that is being or will be conducted.
	□ N/A ☑ I/we or my family do not anticipate conducting any such business □ Yes
8.	Indicate whether you, your spouse, or other immediate family members are a director, officer, employee,
	partner, or member of, or are otherwise associated with, any organization that is partnering with the charter school. To the extent you have provided this information in response to prior items, you may so indicate.
	Does not apply to me, my spouse or family Yes
A	LL-Hawaii] Attachment U – Page 3

 Indicate any potential ethical or legal co the school's governing board. None Yes 	nflicts of interests that would or are likely to exist should you serve on
	Certification
MICHAEL TOONEM	, certify to the best of my knowledge and ability that
the information I am providing to the Sta governing board member is true and con	ate Public Charter School Commission as a prospective
governing board member is true and con	Tell III every respect.
	12 FEB 2016
Signature	Date

[ALL-Hawali]

Michael Todnem

Experience

2013-Present

Town of Oro Valley

Oro Valley, Az.

StormWater Division Manager, P.E., Department of Public Works/StormWater Utility Division

- Duties include management of day to day operations of the StormWater Utility.
- Field Inspections of all Town owned Drainage Facilities.
- Conducts activities essential to fulfilling the requirements of the current ADEQ/EPA approved Stormwater Quality Management Plan (SWMP).
- Primary liaison with ADEQ/EPA regarding stormwater quality regulations and requirements for changes to the SVMP:
- Works with the Pima County Regional Flood Control District (PCRFCD), ADWR, and FEMA to ensure compliance and consistency of the Town's adopted Floodplain and Erosion Hazard Ordinance and in the resolution of floodplain mapping issues.
- Participates with Town staff and Stormwater Utility Commission (SWUC) members to implement required activities necessary to fulfill the Town's SWMP
- Reviews and recommends updates to the Town manuals and ordinances regarding stormwater issues.
- Helps develop the budget for the Town's stormwater management program.
- Provides guidance to Town staff on EPA, ADEQ, ADWR, and FEMA regulatory requirements and the implications to current Town regulations.
- Responds to and advises local residents on stormwater quality regulations and quantity issues.
- Manages contractors and consultants who provide stormwater related services, products, and construction to support the Town's Stormwater Utility and programs.
- Performs technical analysis and review of drainage and soil reports for all development and improvement plans to ensure appropriate stormwater infrastructure is provided and incorporated into the existing Utility system.
- Performs technical analysis and review of actions that impact FEMA regulatory floodplains within the Town to include LOMRs, LOMAs, levee certifications and any supporting environmental or geotechnical reports completed in support of the proposed actions.
- Performs minor in-house hydrologic and hydraulic studies, drainage reports and construction designs to support in-house operations projects.
- Provide technical analysis and inspection support on Stormwater Pollution Prevention Plans and Notice of Termination requests submitted for construction projects to meet the ADEQ Stormwater Construction General Permit.
- Assists in development of the capital improvement program project proposals to correct
- drainage and erosion issues, for submittal for funding from the PCRFCD

and FEMA, as appropriate.

· Responsible for day to day supervision of Stormwater staff

2010–2013 Town of Oro Valley Oro Valley, Az. Civil Engineer, P.E., Department of Public Works/Engineering Division

- Field Inspector for Lambert Lane project including 2-4 lane improvements with associated drainage box culverts and drop inlets.
- Field Inspector for Lambert Lane project with additional duties including Soil Nail Wall monitoring
- Field Inspector for James D. Kreig Park/ Oro Valley Aquatic Center Demo and New Facility Construction.

2006–2010 Town of Oro Valley Oro Valley, Az. Civil Engineer, P.E., Department of Public Works/Operations Division

- Project Manager of multiple small scale projects throughout the Town of Oro Valley including monument signs, building additions, new buildings and generator backup systems.
- Construction Manager for Town Solar Production Project and Energy Efficiency Project
- Supervisor for Pavement Management section Initiated and developed Pavement Management Program for the Town of Oro Valley including Sequel Server Database and system management
- Technical Support for Roads and Streets/Maintenance Division
- Supervisor for Traffic Control/Signals
- Supervisor for Facilities Maintenance for all structures owned by the Town
 of Oro Valley/contract administration for all annual contract services
- Supervisor for Landscape Maintenance of Town owned right-ofways/contract administration and supervision

2004–2006 Town of Oro Valley Oro Valley, Az. Civil Engineer, E.I.T., Department of Public Works/Operations

- Pavement Management Supervisor: Developed Pavement Management System for the Town of Oro Valley. Responsibilities include initiation and development of Sequel Server database for evaluating conditions and forecast analysis for all roads within Town limits, collection and evaluation of field data and scheduling of maintenance projects, written specifications, draft plans, and cost estimates for contract documents, management of contractor scheduling and performance, inspection of on-going and completed work and acceptance to project specifications and safety standards.
- Development Review of Subdivision and Commercial Projects: including review of Hydrology/Hydraulics, Soils, Traffic and Structural Reports, associated Site plan review of Development Plans, Preliminary Plats, Final Plats, and Improvement Plans/As-Builts
- · Technical Support for Roads and Streets/Maintenance Division
- Supervisor for Traffic Control/Signals.
- Supervisor for Facilities Maintenance for all structures owned by the Town of Oro Valley

2002-2004

Civil Engineer Technician, E.I.T., Department of Public Works/Development Review Division

- Development Review of Subdivision and Commercial Projects: including review of Hydrology/Hydraulics, Soils, Traffic and Structural Reports, associated Site plan review of Development Plans, Preliminary Plats, Final Plats, and Improvement Plans/As-Builts
- Developed Retaining Wall Review Process and supplemental training for
- Developed and managed databases for tracking projects in the review process.

2001-2002

Town of Oro Valley

Oro Valley, Az

Civil Engineer Technician, Department of Public Works/Development Review Division

- Grading Review and Retaining/Site Wall Review of Custom Residence Submittals.
- Developed and managed databases for tracking projects.
- Developed trial-basis of on-line review of Custom lot submittals.

1999-2001

Vistoso Builders

Oro Valley, Az.

Site Superintendent

 In charge of layout, grading and building foundations systems for homebuilder on various projects

1986-1999

3 Geotechnical Engineering firms. Southern Az.

Geotechnical Engineering Technician

- Desert Earth Engineering Soils, Asphalt, Concrete Materials Testing, field work and Lab Manager
- Terracon Consultants West Soils, Asphalt, Concrete Materials Testing, field work and Lab Manager
- Construction, Inspection and Testing Soils, Asphalt, Concrete Materials Testing, Field and Lab responsibilities

Education

1980-1982 Illinois State University Normal, II Normal, II 1985-1986 Illinois State University 1986-1988 Pima Community College Tucson, Az. University of Az Tucson, Az. 1988-1990 Major in Physics at Illinois State and Major in Civil Engineering at U. of A. E.I.T., Engineer In Training, Cert # 09208/Dec. 2003

P.E., June 2006

Board Member Information

To be completed individually by each Applicant Governing Board member.

All forms must be signed by hand.

Serving on a public charter school governing board is a position of public trust and fiduciary responsibility. As a governing board member of a public school, you are responsible for ensuring the quality of the school's plans, competent stewardship of public funds, and the school's fulfillment of its public obligations and all terms of its Charter Contract.

As part of the application for a new charter school, the Commission requests that each prospective governing board member respond individually to this questionnaire. Where narrative responses are required, brief responses are sufficient.

The purpose of this questionnaire is twofold: 1) to give application reviewers a clearer introduction to the team behind each school proposal in advance of the applicant interview; and 2) to encourage governing board members to reflect individually, as well as collectively, on their common mission, purposes, and obligations at the earliest stage of school development. Please add the full name of your school to the footer of this document so that it appears on all pages.

	rposes, and obligations at the earliest stage of school development. Please add the full name of your hool to the footer of this document so that it appears on all pages.
1.	Background Name of charter school on whose governing board you intend to serve: Accelerated Learning Laboratory-Hawaii Contact information: Name: Serei Kay
3.	Describe your educational and employment history. No narrative response is required if a resume and professional biography are attached. Resume and professional bio are attached to this form. My educational background was in accounting, but that was and is not where my passion lies. It is working with children that lights my fire. I've owned a few businesses which I sold when I opened a preschool on the campus of Accelerated Elementary and Secondary Schools in 2000. In 2001, I was asked to work for AESS as the office manager and later other positions. During my employment with AESS, I have served as Grants Coordinator, Finance, Teacher's Assistant, SAT/PSAT Coordinator, AZELLA Coordinator, AIMS Coordinator, National Honor/National Junior Honor Society Advisor, Student Council Advisor, Science Olympiad Coach and Student Advisor among other roles.
4.	Indicate whether you currently or have previously served on a board of a school district, another charter school, a non-public school, or any nonprofit organization. Does not apply to me Yes
5.	Why do you wish to serve on the governing board of the proposed charter school? I believe that children should be invested in. They deserve to have brighter futures as well as opportunity to make their mark in history. Contributing my energy, effort and time serving on a board of a school whose vision and mission is to ensure that ALL children have equal access and opportunity to experience and obtain a great education is an extremely worthwhile cause to me.

- 6. What is your understanding of the appropriate role of a public charter school governing board member? A governing board member bears the responsibility of collaborating with other members of the governing board to provide assistance and oversight, set guidelines, monitor, evaluate and provide feedback so that the school can fulfill its mission, follow the vision, adhere to federal and state regulations, bylaws and protocols set in order for children to obtain the highest quality education possible. It is also incumbent upon the board member to remain neutral, be honest, open and excuse himself/herself from decisions where conflicts of interest is present, put aside all personal preferences and have first and foremost the best interest of the school at heart.
- 7. Describe any previous experience you have that is relevant to serving on the charter school's governing board (e.g., other board service). If you have not had previous experience of this nature, explain why you have the capability to be an effective board member.

Given my experiences in many different areas of education over the span of 16 years, I believe I have the insights to understand and provide sound suggestions/guidance to positively impact the students' education in an environment where learning is fun and long term knowledge is gained.

8. Describe the specific knowledge and experience that you would bring to the governing board. Working in a school over the last 16 years have given me much insight, experience and knowledge as to what are some things that make a good school where children are enthusiastic and take charge of their own learning. My experiences as an advisor to students in a number of areas have provided me with the insight to understand children and what motivates them among other things. Growing up in a third world culture house-hold where education for females was not appraised, I understand, cherish and appreciate the impact of what a good quality education will do for a person and how enriching a life one can live.

School Mission and Plan

1. What is your understanding of the school's mission and guiding beliefs?

The mission of the school is to make accessible to and provide all children equal opportunity to the best education this nation has to offer, regardless of their cultural background, ethnicities, religious, gender or socio-economic status. The guiding force is the firm belief that all children will exhibit extraordinarily gifted brilliance and performance when a comprehensive curriculum is coupled with pedagogy based on scientifically sound theories of human learning and when their innate talents are nurtured in a challenging, supportive, and civil environment.

2. What is your understanding of the school's proposed academic plan?

The curriculum is developed by a group of educational professionals based on Cognitive Science Research and Best Instructional Practices and teachers are trained to teach the curriculum in a manner that correlates to the way humans learn naturally. There is no ceiling effect, students move as rapidly and as high as they're capable of and/or driven, students' drives to learn come from within themselves and learning is fun and insatiable. Metacognition, soft skills and learning to learn prepares students with skills, not just for the present but for the rest of their lives.

3. What do you believe to be the characteristics of a successful school?

In order for a school to be successful, it must be stable, follow sound fiscal policies and procedures, be solvent, and create an environment that is centered on the learner, learner-oriented. It must also create an atmosphere where students are responsible for and take ownership of their community. When students have a vested interest in their learning and their community, they are driven to succeed and make their environment better. A school must also integrate and include all members of the community and resources available from local and surrounding areas to enrich a rigorous learning environment

4. How will you know that the school is succeeding or is not succeeding in its mission?

The success of a mission can be evaluated by looking at student outcomes. Continual growth data from standardized exams and various other measuring tools will project long term trends. While standardized exams are point-in-time evaluation tools, it should not be used as the only reflection of student outcomes or teacher performance. Frequent and consistent data must be collected to project a true picture of whether students are learning or if academic goals are met. ALL-Hawaii will strive to offer a rigorous and competitive education where students will be challenged but not overwhelm them. Frequent evaluation outcomes based on true and actual data showing a consistent upward trend will be the truest picture of success. Successful students means a successful school.

Governance

Describe the role that the governing board will play in the school's operation.

A governing board plays the role of providing assistance and oversight, set guidelines, monitor, evaluate and provide feedback so that the school can fulfill its mission, follow the vision, adhere to federal and state regulations, bylaws and protocols set in order for children to obtain the highest quality education possible.

- 2. How will you know if the school is successful at the end of the first year of operation? Financial solvency and data collected from evaluations will indicate success. Students should be academically progressing and goals met. All federal and state reports should be filed in a timely fashion and have met all deadlines. Academic integrity and reputation is established within the community.
- How will you know at the end of five years if the school is successful?
 Annual evaluations, feedbacks from academic measurement tools and continuous goals met will indicate success.
- 4. What specific steps do you think the governing board will need to take to ensure that the school is successful?

Meetings to discuss outcomes in an unbiased and objective environment will enable all parties involved to collaborate and formulate strategies, methods, protocols and resolve any issues that may present itself.

5. How would you handle a situation in which you believe one or more members of the governing board were acting unethically or not in the best interests of the school?

If I believed that one or more members of the governing board were acting in an unethical fashion, I would follow bylaws and regulations that are in place to handle such a situation, but I would do so in an open, fair, honest and objective fashion/environment.

	Disclosures
1.	Indicate whether you or your spouse knows the other prospective governing board members for the proposed school. If so, please indicate the precise nature of your relationship. I/we do not know these individuals Yes I have a professional, working relationship with Olga, Marcus and Jennifer. David is a long term acquaintance/friend.
2. p	Indicate whether you or your spouse knows any person who is, or has been in the last two years, a school employee. If so, indicate the precise nature of your relationship. I/we do not know any such employees X Yes ersonally am an employee of a school, but not ALL-Hawaii.

3,	school (whether as an individual or as a director, officer, employee, or agent of an entity). If so, indicate and describe the precise nature of your relationship and the nature of the business that such person or entity is transacting or will be transacting with the school. I/we do not know any such persons Yes
4.	Indicate if you, your spouse, or other immediate family members anticipate conducting, or are conducting, any business with the school. If so, indicate the precise nature of the business that is being or will be conducted. I/we do not anticipate conducting any such business Yes
5.	If the school intends to contract with an education service provider or management organization, indicate whether you or your spouse knows any employees, officers, owners, directors, or agents of that provider. If the answer is in the affirmative, please describe any such relationship. Not applicable because the school does not intend to contact with an education service provider or school management organization. I/we do not know any such persons Yes
6.	If the school contracts with an education service provider, please indicate whether you, your spouse, or other immediate family members have a direct or indirect ownership, employment, contractual, or management interest in the provider. For any interest indicated, provide a detailed description. N/A. I/we have no such interest Yes
7.	If the school plans to contract with an education service provider, indicate if you, your spouse, or other immediate family member anticipate conducting, or are conducting, any business with the provider. If so, indicate the precise nature of the business that is being or will be conducted. N/A
8. Lar	Indicate whether you, your spouse, or other immediate family members are a director, officer, employee, partner, or member of, or are otherwise associated with, any organization that is partnering with the charter school. To the extent you have provided this information in response to prior items, you may so indicate. Does not apply to me, my spouse or family Yes is said to be a said applicant board member.
9.	
	Certification
	Sex ex Lay , certify to the best of my knowledge and ability that information I am providing to the State Public Charter School Commission as a prospective verning board member is true and correct in every respect.
Sig	Date

ALL-Hawaii Attachment V: Governing Board's Conflict of Interest Policies

ARTICLE 1- PURPOSE

The purpose of this conflict of interest policy is to protect the school's (Accelerated Learning Laboratory-Hawaii, hereafter ALL-H) interest when it is contemplating entering into a transaction or arrangement that might benefit the private interest of an officer or director of ALL-H, or might result in a possible excess benefit transactions; AND ensure that deliberations and decisions, regarding the potential appearance of conflicts, are conducted in an open and informed manner. This policy is intended to supplement but not supplant applicable state and federal laws governing conflict of interest applicable to nonprofit and charitable organizations.

ARTICLE II- DEFINITIONS

Section -2.01: Interested Person; Any director or principal officer, or member of a committee with governing board delegated powers, who has a direct or indirect financial interest, as defined below, is an interested person.

Section -2.02: Financial Interest: A person has a financial interest if the person has, directly or indirectly, through business, investment, or family:

- a. An ownership or investment interest in any entity with which the Organization has a transaction or arrangement.
- b. A compensation arrangement with the Organization or
- c. A compensation arrangement with any entity or individual with which the Organization has a transaction or arrangement, or
- d. A potential ownership or investment interest in, or
- e. Compensation arrangement with any entity with which the organization is negotiating a transaction.

Section -2.03: Compensation includes direct and indirect remuneration as well as gifts or favors that are not insubstantial.

Section -2.04 A financial interest is not necessarily a conflict of interest. Under Article III, Section 2, a person who has financial interest may only have a conflict of interest only if the appropriate governing board or committee, through consultation with this policy and state and federal law, decides that a conflict of interest exists.

ARTICLE III- PROCEDURES

Section -3.01: Duty to Disclose: In connection with any possible conflict of interest, an interested person must disclose, if not readily apparent, any duality of interest or possible conflict of interest and/or the existence of financial interest and be given the opportunity to disclose all material facts to the directors considering the proposed transaction or arrangement.

Section 3.02: Determining Whether a Conflict of Interest Exists: After disclosure and discussion of the financial interest and all material facts, and after any discussion with the interested person, the board members exclusive of the interested person(s), shall decide if a conflict of interest exists.

Section – 3.03: Procedures for Addressing the Conflict of Interest:

- a. No interested person having a duality of interest or possible conflict of interest shall vote or his his/her personal influence on the issue being decided. However, the interested person may participate in the information gathering and answer appropriate questions related to the issues. An interested person may make a presentation at the governing board or committee meeting, but after the presentation, s/he may be asked to leave the meeting during the discussion of, and the vote on, the transaction or arrangement involving the possible conflict of interest.
- b. The chairperson of the governing board or committee shall, if appropriate, appoint a disinterested person or committee to investigate alternatives to the proposed transactions or arrangement.
- c. After exercising due diligence, the governing board or committee shall determine if the Organization can obtain, with reasonable effort, a more advantageous transaction or arrangement. Additionally, the governing board shall determine the fair market value of the transaction or arrangement and if other considered transactions or arrangements are of comparable quality and desirability to the Organization.
- d. If a more advantageous transaction or arrangement of equal or superior worth to the Organization is not reasonably possible under circumstances not producing a conflict of interest, the governing board or committee shall determine by a majority vote of the disinterested members whether the transaction or arrangement is in the Organization's best interest, for its own benefit, and whether it is fair and reasonable. In conformity with the above determination, it shall make its decision as to whether to enter into the transaction or arrangement. If the governing board elects to enter into the transaction or arrangement, it shall also find that no conflicts of interest exist relative to the transaction or arrangement.

Section – 3.04: Violations of the Conflicts of Interest Policy

- a. If the governing board or committee has reasonable cause to believe a member has failed to disclose actual or possible conflicts of interest, it shall inform the member of the basis for such believe and afford the member an opportunity to explain the alleged failure to disclose.
- b. If, after hearing the member's response and after making further investigation as warranted by the circumstances, the governing board or committee determines the member has failed to disclose an actual conflict of interest, it shall take appropriate disciplinary and corrective action.

ARTICLE IV – RECORDS OF PROCEEDINGS

The minutes of the governing board and all committees with board delegated powers shall reflect:

Section -4.01: That a disclosure of the possible conflict of interest was made. The names of the persons who disclosed or otherwise were found to have a financial interest in connection with an actual or possible conflict of interest, the nature of the financial interest, any action taken to

determine whether a conflict of interest was present, and the governing board's or committee's decision as to whether a conflict of interest in fact existed.

Section -4.02: The names of the persons who were present for discussions and votes relating to the transaction or arrangement, the content of the discussion, any other relevant factors, and a record of any votes, recorded by name and disposition, taken in connection with the proceedings.

ARTICLE V – COMPENSATION

Section -5.01: A voting member of any committee whose jurisdiction includes compensation matters and who receives compensation, directly or indirectly, from the Organization for services is precluded from voting on matters pertaining to the member's compensation.

Section -5.02: No voting member of the governing board or any committee whose jurisdiction includes compensation matters and who receives compensation, directly or indirectly,

ARTICLE VI – ANNUAL STATEMENTS

Each director, principal officer, and member of a committee with governing board delegated powers shall annually sign a statement which affirms such person:

Section – 6.01: Has received a copy of the conflict of interest policy

Section -6.02: Has read and understands the policy,

Section -6.03: Has agreed to comply with the policy, and

Section -6.04: Understands the Organization is a state entity, and must behave in accordance with DOE policies and goals.

ARTICLE VII – PERIODIC REVIEWS

To ensure that the Organization operates in a manner consistent with its educational purposes and does not engage in activities that could jeopardize its status, periodic reviews shall be conducted. The periodic reviews shall, at a minimum, include the following subjects:

Section – 7.01: Whether compensation and arrangements are reasonable, based on competent survey information, and the result of arms length bargaining.

Section – 7.02: Whether partnerships, joint ventures, and arrangements conform to the Organization's written policies, are properly recorded, reflect reasonable payment for goods and services, further state/educational purposes, and do not jeopardize ALL-H's status as a charter school.

ARTICLE VIII – USE OF OUTSIDE EXPERTS

When conducting the periodic reviews as provided for in Article VII, the Organization may, but need not, use outside advisors. If outside experts are used, their use shall not relieve governing board of its responsibility for ensuring periodic reviews are conducted.

Governing Board's Code of Ethics

Accelerated Learning Laboratory-Hawaii, being an entity belonging to the State of Hawaii, hereby adopts Hawaii's Standards of Conduct, HRS Chapter 84, attached below.

HAWAII REVISED STATUTES CHAPTER 84 STANDARDS OF CONDUCT CHAPTER 84 STANDARDS OF CONDUCT

Preamble

The purpose of this chapter is to (1) prescribe a code of ethics for elected officers and public employees of the State as mandated by the people of the State of Hawaii in the Hawaii Constitution, Article XIV; (2) educate the citizenry with respect to ethics in government; and (3) establish an ethics commission which will administer the codes of ethics adopted by the constitutional convention and by the legislature and render advisory opinions and enforce the provisions of this law so that public confidence in public servants will be preserved.

Part I. General Provisions

- §84-1 Construction. This chapter shall be liberally construed to promote high standards of ethical conduct in state government.
- §84-2 Applicability. This chapter shall apply to every nominated, appointed, or elected officer, employee, and candidate to elected office of the State and for election to the constitutional convention, but excluding justices and judges; provided that in the case of elected delegates and employees of the constitutional convention, this chapter shall apply only to the enforcement and administration of the code of ethics adopted by the constitutional convention.

§84-3 Definitions.

"Business" includes a corporation, a partnership, a sole proprietorship, a trust or foundation, or any other individual or organization carrying on a business, whether or not operated for profit.

"Compensation" means any money, thing of value, or economic benefit conferred on or received by any person in return for services rendered or to be rendered by oneself or another.

"Controlling interest" means an interest in a business or other undertaking which is sufficient in fact to control, whether the interest be greater or less than fifty per cent.

"Employee" means any nominated, appointed, or elected officer or employee of the State, including members of boards, commissions, and committees, and employees under contract to the State or of the constitutional convention, but excluding legislators, delegates to the constitutional convention, justices and judges.

"Employment" means any rendering of services for compensation.

"Financial interest" means an interest held by an individual, the individual's spouse, or dependent children which is: (1) An ownership interest in a business. (2) A creditor interest in an insolvent business. (3) An employment, or prospective employment for which negotiations have begun. (4) An ownership interest in real or personal property. (5) A loan or other debtor interest. (6) A directorship or officership in a business.

"Official act" or "official action" means a decision, recommendation, approval, disapproval, or other action, including inaction, which involves the use of discretionary authority.

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"Official authority" includes administrative or legislative powers of decision, recommendation, approval, disapproval, or other discretionary action.

"State agency" includes the State, the legislature and its committees, all executive departments, boards, commissions, committees, bureaus, offices, the University of Hawaii, and all independent commissions and other establishments of the state government but excluding the courts.

"Task force" means a group convened by resolution, statute, executive order, proclamation, or by invitation of the legislature, governor, or another state officer, to study a specific subject or issue, for a specific defined period of time, and to report to, offer a recommendation to, or advise the legislature, governor, or a state officer.

Part II. Code of Ethics

§84-11 Gifts. No legislator or employee shall solicit, accept, or receive, directly or indirectly, any gift, whether in the form of money, service, loan, travel, entertainment, hospitality, thing, or promise, or in any other form, under circumstances in which it can reasonably be inferred that the gift is intended to influence the legislator or employee in the performance of the legislator's or employee's official duties or is intended as a reward for any official action on the legislator's or employee's part.

§84-11.5 Reporting of gifts. (a) Every legislator and employee shall file a gifts disclosure statement with the state ethics commission on June 30 of each year if all the following conditions are met: (1) The legislator or employee, or spouse or dependent child of a legislator or employee, received directly or indirectly from one source any gift or gifts valued singly or in the aggregate in excess of \$200, whether the gift is in the form of money, service, goods, or in any other form; (2) The source of the gift or gifts have interests that may be affected by official action or lack of action by the legislator or employee; and (3) The gift is not exempted by subsection (d) from reporting requirements under this subsection.

- (b) The report shall cover the period from June 1 of the preceding calendar year through June 1 of the year of the report.
- (c) The gifts disclosure statement shall contain the following information: (1) A description of the gift; (2) A good faith estimate of the value of the gift; (3) The date the gift was received; and (4) The name of the person, business entity, or organization from whom, or on behalf of whom, the gift was received.
- (d) Excluded from the reporting requirements of this section are the following: (1) Gifts received by will or intestate succession; (2) Gifts received by way of distribution of any inter vivos or testamentary trust established by a spouse or ancestor; (3) Gifts from a spouse, fiance, fiancee, any relative within four

degrees of consanguinity or the spouse, fiancé, or fiancee of such a relative. A gift from any such person is a reportable gift if the person is acting as an agent or intermediary for any person not covered by this paragraph; (4) Political campaign contributions that comply with state law; (5) Anything available to or distributed to the public generally without regard to the official status of the recipient;

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- (6) Gifts that, within thirty days after receipt, are returned to the giver or delivered to a public body or to a bona fide educational or charitable organization without the donation being claimed as a charitable contribution for tax purposes; and (7) Exchanges of approximately equal value on holidays, birthday, or special occasions.
- (e) Failure of a legislator or employee to file a gifts disclosure statement as required by this section shall be a violation of this chapter.
- (f) This section shall not affect the applicability of section 84-11.
- §84-12 Confidential information. No legislator or employee shall disclose information which by law or practice is not available to the public and which the legislator or employee acquires in the course of the legislator's or employee's official duties, or use the information for the legislator's or employee's personal gain or for the benefit of anyone; provided that this section shall not preclude a person who serves as the designee or representative of an entity that is a member of a task force from disclosing information to the entity which the person acquires as the entity's designee or representative.
- §84-13 Fair treatment. No legislator or employee shall use or attempt to use the legislator's or employee's official position to secure or grant unwarranted privileges, exemptions, advantages, contracts, or treatment, for oneself or others; including but not limited to the following: (1) Seeking other employment or contract for services for oneself by the use or attempted use of the legislator's or employee's office or position. (2) Accepting, receiving, or soliciting compensation or other consideration for the performance of the legislator's or employee's official duties or responsibilities except as provided by law. (3) Using state time, equipment or other facilities for private business purposes. (4) Soliciting, selling, or otherwise engaging in a substantial financial transaction with a subordinate or a person or business whom the legislator or employee inspects or supervises in the legislator's or employee's official capacity.

Nothing herein shall be construed to prohibit a legislator from introducing bills and resolutions, or to prevent a person from serving on a task force or from serving on a task force committee, or from making statements or taking official action as a legislator, or a task force member or a task force member's designee or representative. Every legislator, or task force member or designee or representative of a task force member shall file a full and complete public disclosure of the nature and extent of the interest or transaction which the legislator or task force member or task force member's designee or representative believes may be affected by the legislator's or task force member's official action.

§84-13.5 Washington Place; campaign activities. The governor shall not allow Washington Place to be used for any events intended to solicit funds, support, or votes for any candidate for elective public office. §84-14 Conflicts of interests. (a) No employee shall take any official action directly affecting: (1) A business or other undertaking in which the employee has a substantial financial interest; or (2) A

private undertaking in which the employee is engaged as legal counsel, advisor, consultant, representative, or other agency capacity.

A department head who is unable to disqualify the department head's self on any matter described in paragraphs (1) and (2) will not be in violation of this subsection if the department head has complied with the disclosure requirements of section 84-17.

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A person whose position on a board, commission, or committee is mandated by statute, resolution, or executive order to have particular qualifications shall only be prohibited from taking official action that directly and specifically affects a business or undertaking in which the person has a substantial financial interest; provided that the substantial financial interest is related to the member's particular qualifications.

- (b) No employee shall acquire financial interests in any business or other undertaking which the employee has reason to believe may be directly involved in official action to be taken by the employee.
- (c) No legislator or employee shall assist any person or business or act in a representative capacity before any state or county agency for a contingent compensation in any transaction involving the State.
- (d) No legislator or employee shall assist any person or business or act in a representative capacity for a fee or other compensation to secure passage of a bill or to obtain a contract, claim, or other transaction or proposal in which the legislator or employee has participated or will participate as a legislator or employee, nor shall the legislator or employee assist any person or business or act in a representative capacity for a fee or other compensation on such bill, contract, claim, or other transaction or proposal before the legislature or agency of which the legislator or employee is an employee or legislator.
- (e) No employee shall assist any person or business or act in a representative capacity before a state or county agency for a fee or other consideration on any bill, contract, claim, or other transaction or proposal involving official action by the agency if the employee has official authority over that state or county agency unless the employee has complied with the disclosure requirements of section 84-17.
- (f) Subsections (a), (b), and (d) shall not apply to a task force member or the designee or representative of that task force member whose service as a task force member would not otherwise cause that member, designee, or representative to be considered an employee, if the task force member or the designee or representative of that task force member complies with the disclosure requirements under section 84-17.
- §84-15 Contracts. (a) A state agency shall not enter into any contract to procure or dispose of goods or services, or for construction, with a legislator, an employee, or a business in which a legislator or an employee has a controlling interest, involving services or property of a value in excess of \$10,000 unless:

 (1) The contract is awarded by competitive sealed bidding pursuant to section 103D-302; (2) The
- (1) The contract is awarded by competitive sealed bidding pursuant to section 103D-302; (2) The contract is awarded by competitive sealed proposal pursuant to section 103D-303; or (3) The agency posts a notice of its intent to award the contract and files a copy of the notice with the state ethics commission at least ten days before the contract is awarded.
- (b) A state agency shall not enter into a contract with any person or business which is represented or assisted personally in the matter by a person who has been an employee of the agency within the

preceding two years and who participated while in state office or employment in the matter with which the contract is directly concerned. This subsection shall not apply to any contract that is awarded in accordance with subsection (a) with a person or business represented or assisted by a person who was a member of a task force or served as the designee or representative of a task force member.

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§84-16 Contracts voidable. In addition to any other penalty provided by law, any contract entered into by the State in violation of this chapter is voidable on behalf of the State; provided that in any action to avoid a contract pursuant to this section the interests of third parties who may be damaged thereby shall be taken into account, and the action to void the transaction is initiated within sixty days after the determination of a violation under this chapter. The attorney general shall have the authority to enforce this provision.

§84-17 Requirements of disclosure. (a) For the purposes of this section, the terms:

"Disclosure period" refers to the period from January 1 of the preceding calendar year to the time of the filing of the employee's or legislator's disclosure of financial interests.

"Substantially the same" refers to no more than ten amendments or changes to the information reported for the preceding disclosure period.

(b) The disclosure of financial interest required by this section shall be filed: (1) By any person enumerated in subsection (c), except a member of the legislature, between January 1 and May 31 of each year; (2) By a member of the legislature between January 1 and January 31 of each year; (3) Within thirty days of a person's election or appointment to a state position enumerated in subsection (c); or (4) Within thirty days of separation from a state position if a prior financial disclosure statement for the position was not filed within the one hundred eighty days preceding the date of separation;

provided that candidates for state elective offices or the constitutional convention shall file the required statements no later than twenty days prior to the date of the primary election for state offices or the election of delegates to the constitutional convention.

(c) The following persons shall file annually with the state ethics commission a disclosure of financial interests: (1) The governor, the lieutenant governor, the members of the legislature, and delegates to the constitutional convention; provided that delegates to the constitutional convention shall only be required to file initial disclosures; (2) The directors and their deputies, the division chiefs, the executive directors and the executive secretaries and their deputies, the purchasing agents and the fiscal officers, regardless of the titles by which the foregoing persons are designated, of every state agency and department; (3) The permanent employees of the legislature and its service agencies, other than persons employed in clerical, secretarial, or similar positions; (4) The administrative director of the State, and the assistants in the office of the governor and the lieutenant governor, other than persons employed in clerical, secretarial, or similar positions; (5) The hearings officers of every state agency and department; (6) The president, the vice presidents, assistant vice presidents, the chancellors, and the provosts of the University of Hawaii and its community colleges; (7) The superintendent, the deputy superintendent, the assistant superintendents, the complex area superintendents, the state librarian, and the deputy state librarian of the department of education; (8) The administrative director and the

deputy director of the courts; (9) The members of every state board or commission whose original terms of office are for periods exceeding one year and whose functions are not solely advisory;

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- (10) Candidates for state elective offices, including candidates for election to the constitutional convention, provided that candidates shall only be required to file initial disclosures; and (11) The administrator and assistant administrator of the office of Hawaiian affairs.
- (d) The financial disclosure statements of the following persons shall be public records and available for inspection and duplication: (1) The governor, the lieutenant governor, the members of the legislature, candidates for and delegates to the constitutional convention, the trustees of the office of Hawaiian affairs, and candidates for state elective offices; (2) The directors of the state departments and their deputies, regardless of the titles by which the foregoing persons are designated; provided that with respect to the department of the attorney general, the foregoing shall apply only to the attorney general and the first deputy attorney general; (3) The administrative director of the State; (4) The president, the vice presidents, the assistant vice presidents, the chancellors, members of the board of regents, and the provosts of the University of Hawaii; (5) The members of the board of education and the superintendent, the deputy superintendent, the state librarian, and the deputy state librarian of the department of education; (6) The administrative director and the deputy director of the courts; (7) The administrator and the assistant administrator of the office of Hawaiian affairs; and (8) The members of the following state boards, commissions, and agencies: (A) The board of directors of the agribusiness development corporation established under section 163D-3; (B) The board of agriculture established under section 26-16; (C) The state ethics commission established under section 84-21; (D) The Hawaii community development authority established under section 206E-3; (E) The Hawaiian homes commission established under the Hawaiian Homes Commission Act of 1920, as amended, and section 26-17; (F) The board of directors of the Hawaii housing finance and development corporation established under section 201H-3; (G) The board of land and natural resources established under section 171-4; (H) The state land use commission established under section 205-1; (I) The legacy land conservation commission established under section 173A-2.4; (J) The natural area reserves system commission established under section 195-6; (K) The board of directors of the natural energy laboratory of Hawaii authority established under section 227D-2; (L) The board of directors of the Hawaii public housing authority established under section 356D-3; (M) The public utilities commission established under section 269-2; and (N) The commission on water resource management established under section 174C-7.
- (e) The information on the financial disclosure statements shall be confidential, except as provided in subsection (d). The commission shall not release the contents of the disclosures except as may be permitted pursuant to this chapter. Any person who releases any confidential information shall be subject to section 84-31(c).

[Note: This reference to section 84-31(c) pertains to previous statutory language which was deleted by Act 221, SLH 1995.]

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- (f) Candidates for state elective offices, including candidates for election to the constitutional convention, shall only be required to disclose their own financial interests. The disclosures of financial interests of all other persons designated in subsection (c) shall state, in addition to the financial interests of the person disclosing, the financial interests of the person's spouse and dependent children. All disclosures shall include: (1) The source and amount of all income of \$1,000 or more received, for services rendered, by the person in the person's own name or by any other person for the person's use or benefit during the preceding calendar year and the nature of the services rendered; provided that required disclosure under this paragraph for the income source of the spouse or dependent child of a person subject to subsection (d) shall be limited to the name of the business or other qualifying source of income, and need not include the income source's address; provided further that other information that may be privileged by law or individual items of compensation that constitute a portion of the gross income of the business or profession from which the person derives income need not be disclosed; (2) The amount and identity of every ownership or beneficial interest held during the disclosure period in any business having a value of \$5,000 or more or equal to ten per cent of the ownership of the business and, if the interest was transferred during the disclosure period, the date of the transfer; provided that an interest in the form of an account in a federal or state regulated financial institution, an interest in the form of a policy in a mutual insurance company, or individual items in a mutual fund or a blind trust, if the mutual fund or blind trust has been disclosed pursuant to this paragraph, need not be disclosed; (3) Every officership, directorship, trusteeship, or other fiduciary relationship held in a business during the disclosure period, the term of office and the annual compensation; (4) The name of each creditor to whom the value of \$3,000 or more was owed during the disclosure period and the original amount and amount outstanding; provided that debts arising out of retail installment transactions for the purchase of consumer goods need not be disclosed; (5) The street address and, if available, the tax map key number, and the value of any real property in which the person holds an interest whose value is \$10,000 or more, and, if the interest was transferred or obtained during the disclosure period, a statement of the amount and nature of the consideration received or paid in exchange for such interest, and the name of the person furnishing or receiving the consideration; provided that disclosure shall not be required of the street address and tax map key number of the person's residence; (6) The names of clients personally represented before state agencies, except in ministerial matters, for a fee or compensation during the disclosure period and the names of the state agencies involved; and (7) The amount and identity of every creditor interest in an insolvent business held during the disclosure period having a value of \$5,000 or more.
- (g) Where an amount is required to be reported, the person disclosing may indicate whether the amount is at least \$1,000 but less than \$10,000; at least \$10,000 but less than \$25,000; at least \$25,000 but less than \$50,000; at least \$50,000 but less than \$100,000; at least \$100,000 but less than \$150,000; at least \$150,000 but less than \$250,000; at least \$250,000 but less than \$500,000; at least \$500,000 but less than \$750,000; at least \$750,000 but less than \$1,000,000; or \$1,000,000 or more. An amount of stock may be reported by number of shares.
- (h) The state ethics commission shall provide a long form of disclosure on all evennumbered years and a short form of disclosure for subsequent annual filings on all odd-numbered years in those instances where the financial interests of the person disclosing are substantially the same as those reported for the preceding disclosure period.

- (i) Failure of a legislator, a delegate to the constitutional convention, or employee to file a disclosure of financial interests as required by this section shall be a violation of this chapter. Any legislator, delegate to a constitutional convention, or employee who fails to file a disclosure of financial interests when due shall be assessed an administrative fine of \$50. The state ethics commission shall notify a person, by registered mail, return receipt requested, of the failure to file, and the disclosure of financial interests shall be submitted to the commission not later than 4:30 p.m. on the tenth day after notification of the failure to file has been mailed to the person. If a disclosure of financial interests has not been filed within ten days of the due date, an additional administrative fine of \$10 for each day a disclosure remains unfiled shall be added to the administrative fine. All administrative fines collected under this section shall be deposited in the State's general fund. Any administrative fine for late filing shall be in addition to any other action the commission may take under this chapter for violations of the state ethics code. The commission may waive any administrative fines assessed under this subsection for good cause shown.
- (j) The chief election officer, upon receipt of the nomination paper of any person seeking a state elective office, including the office of delegate to the constitutional convention, shall notify the ethics commission of the name of the candidate for state office and the date on which the person filed the nomination paper. The ethics commission, upon the expiration of the time allowed for filing, shall release to the public a list of all candidates who have failed to file financial disclosure statements and shall immediately assess a late filing penalty fee against those candidates of \$25 which shall be collected by the state ethics commission and deposited into the general fund. The ethics commission may investigate, initiate, or receive charges as to whether a candidate's financial disclosure statement discloses the financial interests required to be disclosed. After proceeding in conformance with section 84-31, the ethics commission may issue a decision as to whether a candidate has complied with section 84-17(f) and this decision shall be a matter of public record.
- §84-17.5 Disclosure files; disposition. (a) All financial disclosure statements filed by a legislator, employee, or delegate to a constitutional convention shall be maintained by the state ethics commission during the term of office of the legislator, employee, or delegate and for a period of six years thereafter. Upon the expiration of the six-year period, the financial disclosure statement and all copies thereof shall be destroyed.
- (b) Upon the expiration of six years after an election for which a candidate for state elective office or a constitutional convention has filed a financial disclosure statement, the state ethics commission shall destroy the candidate's financial disclosure statement and all copies thereof.
- (c) Financial disclosure statements provided for in section 84-17(d) shall cease to be public records once the six-year period in subsection (a) or (b) has run.
- (d) Nothing herein shall bar the state ethics commission from retaining a financial disclosure statement or copy of a financial disclosure statement that has become part of a charge case or advisory opinion request, or is part of an ongoing investigation.
- §84-18 Restrictions on post employment. (a) No former legislator or employee shall disclose any information which by law or practice is not available to the public and which the former legislator or employee acquired in the course of the former legislator's or employee's official duties or use the information for the former legislator's or employee's personal gain or the benefit of anyone.

(b) No former legislator, within twelve months after termination of the former legislator's employment, shall represent any person or business for a fee or other consideration, on matters in which the former legislator participated as a legislator or on matters involving official action by the legislature.

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- (c) No former employee, within twelve months after termination of the former employee's employment, shall represent any person or business for a fee or other consideration, on matters in which the former employee participated as an employee or on matters involving official action by the particular state agency or subdivision thereof with which the former employee had actually served. This section shall not apply to a former task force member who, but for service as a task force member, would not be considered an employee.
- (d) This section shall not prohibit any agency from contracting with a former legislator or employee to act on a matter on behalf of the State within the period of limitations stated herein, and shall not prevent such legislator or employee from appearing before any agency in relation to such employment.
- (e) This section shall not apply to any person who is employed by the State for a period of less than one hundred and eighty-one days.
- (f) For the purposes of this section, "represent" means to engage in direct communication on behalf of any person or business with a legislator, a legislative employee, a particular state agency or subdivision thereof, or their employees.
- §84-19 Violation. (a) Any favorable state action obtained in violation of the code of ethics for legislators or employees and former employees is voidable in the same manner as voidable contracts as provided for under section 84-16; and the State by the attorney general may pursue all legal and equitable remedies available to it.
- (b) The State by the attorney general may recover any fee, compensation, gift, or profit received by any person as a result of a violation of the code of ethics by a legislator or employee or former legislator or employee. Action to recover under this subsection shall be brought within one year of a determination of such violation.
- (c) Any violation of this chapter by an employee, candidate for election to and elected delegate to the constitutional convention shall be punishable only in accordance with the code of ethics adopted by the constitutional convention.

Part III. State Ethics Commission

- §84-21 State ethics commission established; composition. (a) There is established within the office of the auditor for administrative purposes only a commission to be known as the state ethics commission. The commission shall consist of five members appointed by the governor from a panel of ten persons nominated by the judicial council. Each member of the commission shall be a citizen of the United States and a resident of the State. Members of the commission shall hold no other public office.
- (b) The chairperson of the commission shall be elected by the majority of the members of the commission. The term of each member of the commission shall be for four years. No person shall be appointed consecutively to more than two terms as a member of the commission. A vacancy on the

commission shall be filled for the remainder of the unexpired term in the same manner as the original appointment, except that the judicial council shall nominate for gubernatorial appointment two persons for a vacancy.

(c) No member of the commission shall hold office for more than one hundred and twenty days after the expiration of the member's term. If the governor fails to appoint a person to a vacant office within sixty days after receipt of the list of nominees from the judicial council, council shall

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select a person from its list of nominees to fill the vacant office, notwithstanding subsection (b) and section 26-34 to the contrary.

(d) The governor may remove or suspend any member of the commission upon the filing of a written finding with the commission, and upon service of a copy of the written finding on the member to be removed or suspended.

Part IV. Administration and Enforcement

§84-31 Duties of commission; complaint, hearing, determination. (a) The ethics commission shall have the following powers and duties: (1) It shall prescribe forms for the disclosures required by Article XIV of the Hawaii Constitution and section 84-17 and the gifts disclosure statements required by section 84-11.5 and shall establish orderly procedures for implementing the requirements of those provisions; (2) It shall render advisory opinions upon the request of any legislator, employee, or delegate to the constitutional convention, or person formerly holding such office or employment as to whether the facts and circumstances of a particular case constitute or will constitute a violation of the code of ethics. If no advisory opinion is rendered within thirty days after the request is filed with the commission, it shall be deemed that an advisory opinion was rendered and that the facts and circumstances of that particular case do not constitute a violation of the code of ethics. The opinion rendered or deemed rendered, until amended or revoked, shall be binding on the commission in any subsequent charges concerning the legislator, employee, or delegate to the constitutional convention, or person formerly holding such office or employment, who sought the opinion and acted in reliance on it in good faith, unless material facts were omitted or misstated by such persons in the request for an advisory opinion; (3) It shall initiate, receive, and consider charges concerning alleged violation of this chapter, initiate or make investigation, and hold hearings; (4) It may subpoena witnesses, administer oaths, and take testimony relating to matters before the commission and require the production for examination of any books or papers relative to any matter under investigation or in question before the commission. Before the commission shall exercise any of the powers authorized in this section with respect to any investigation or hearings it shall by formal resolution, supported by a vote of three or more members of the commission, define the nature and scope of its inquiry; (5) It may, from time to time adopt, amend, and repeal any rules, not inconsistent with this chapter, that in the judgment of the commission seem appropriate for the carrying out of this chapter and for the efficient administration thereof, including every matter or thing required to be done or which may be done with the approval or consent or by order or under the direction or supervision of or as prescribed by the commission. The rules, when adopted as provided in chapter 91, shall have the force and effect of law; (6) It shall have jurisdiction for purposes of investigation and taking appropriate action on alleged violations of this chapter in all proceedings commenced within six years of an alleged violation of this chapter by a legislator or

employee or former legislator or employee. A proceeding shall be deemed commenced by the filing of a charge with the commission or by the signing of a charge by three or more members of the commission. Nothing herein shall bar proceedings against a person who by fraud or other device, prevents discovery of a violation of this chapter; (7) It shall distribute its publications without cost to the public and shall initiate and maintain programs with the purpose of educating the citizenry and all legislators, delegates to the constitutional convention, and employees on matters of ethics in government employment; and

- (8) It shall administer any code of ethics adopted by a state constitutional convention, subject to the procedural requirements of this part and any rules adopted thereunder.
- (b) Charges concerning the violation of this chapter shall be in writing, signed by the person making the charge under oath, except that any charge initiated by the commission shall be signed by three or more members of the commission. The commission shall notify in writing every person against whom a charge is received and afford the person an opportunity to explain the conduct alleged to be in violation of the chapter. The commission may investigate, after compliance with this section, such charges and render an informal advisory opinion to the alleged violator. The commission shall investigate all charges on a confidential basis, having available all the powers herein provided, and proceedings at this stage shall not be public. If the informal advisory opinion indicates a probable violation, the person charged shall request a formal opinion or within a reasonable time comply with the informal advisory opinion. If the person charged fails to comply with such informal advisory opinion or if a majority of the members of the commission determine that there is probable cause for belief that a violation of this chapter might have occurred, a copy of the charge and a further statement of the alleged violation shall be personally served upon the alleged violator. Service shall be made by personal service upon the alleged violator wherever found or by registered or certified mail with request for a return receipt and marked deliver to addressee only. If after due diligence service cannot be effected successfully in accordance with the above, service may be made by publication if so ordered by the circuit court of the circuit wherein the alleged violator last resided. The state ethics commission shall submit to the circuit court for its consideration in issuing its order to allow service by publication an affidavit setting forth facts based upon the personal knowledge of the affiant concerning the methods, means, and attempts made to locate and effect service by personal service or by registered or certified mail in accordance with the above. Service by publication when ordered by the court shall be made by publication once a week for four successive weeks of a notice in a newspaper of general circulation in the circuit of the alleged violator's last known state address. The alleged violator shall have twenty days after service thereof to respond in writing to the charge and statement.
- (c) If after twenty days following service of the charge and further statement of alleged violation in accordance with this section, a majority of the members of the commission conclude that there is probable cause to believe that a violation of this chapter or of the code of ethics adopted by the constitutional convention has been committed, then the commission shall set a time and place for a hearing, giving notice to the complainant and the alleged violator. Upon the commission's issuance of a notice of hearing, the charge and further statement of alleged violation and the alleged violator's written response thereto shall become public records. The hearing shall be held within ninety days of the commission's issuance of a notice of hearing. If the hearing is not held within that ninety-day period, the charge and further statement of alleged violation shall be dismissed; provided that any

delay that is at the request of, or caused by, the alleged violator shall not be counted against the ninetyday period. All parties shall have an opportunity (1) to be heard, (2) to subpoena witnesses and require the production of any books or papers relative to the proceedings, (3) to be represented by counsel and (4) to have the right of cross-examination. All hearings shall be in accordance with chapter 91. All witnesses shall testify under oath and the hearings shall be open to the public. The commission shall not be bound by the strict rules of evidence but the commission's findings must be based upon competent and substantial evidence. All testimony and other evidence taken at the hearing shall be recorded. Copies of transcripts of such record shall be available only to the complainant and the alleged violator at their own expense, and the fees therefor shall be deposited in the State's general fund.

(d) A decision of the commission pertaining to the conduct of any legislator, delegate to the constitutional convention, or employee or person formerly holding such office or employment shall be in writing and signed by three or more of the members of the commission. A decision of the commission rendered after a hearing together with findings and the record of the proceeding shall be a public record.

- (e) A person who files a frivolous charge with the commission against any person covered by this chapter shall be civilly liable to the person charged for all costs incurred in defending the charge, including but not limited to costs and attorneys' fees. In any case where the commission decides not to issue a complaint in response to a charge, the commission shall upon the written request of the person charged make a finding as to whether or not the charge was frivolous. The person charged may initiate an action in the circuit court for recovery of fees and costs incurred in commission proceedings within one year after the commission renders a decision. The commission's decision shall be binding upon the court for purposes of a finding pursuant to section 607-14.5.
- (f) The commission shall cause to be published yearly summaries of decisions, advisory opinions, and informal advisory opinions. The commission shall make sufficient deletions in the summaries to prevent disclosing the identity of persons involved in the decisions or opinions where the identity of such persons is not otherwise a matter of public record under this chapter.
- §84-31.3 Filing of false charges. (a) Any person who knowingly and intentionally files a false charge with the commission, or any member of the commission who initiates action against any state official, state employee, or any other person covered by this chapter, knowing such charge to be false, shall be guilty of the crime of perjury and subject to the penalty set forth in section 710-1060.
- (b) Whoever is convicted in a court of competent jurisdiction of the crime of perjury under this section, in addition to any other punishment prescribed by law thereof, shall be required by court order to reimburse the person against whom the false charge was filed for all of the person's legal expenses and any other expenses incurred in relation to the person's defense against the false complaint.
- (c) If such charge is filed within six months prior to an election in which the accused's name appears on the ballot, the person filing the false complaint shall pay to the accused the amount set out above plus an equal amount to the general fund of the State.
- (d) This section shall not supersede or preclude any other right or remedy at law available to the person falsely accused.

- §84-32 Procedure. (a) With respect to legislators and employees removable only by impeachment: when the ethics commission after due hearings pursuant to section 84-31(c) determines that there is sufficient cause to file a complaint against a legislator or an employee removable only by impeachment, it shall issue a complaint and refer the matter to the appropriate body of the legislature. The complaint shall contain a statement of the facts alleged to constitute the violation. The complaint shall be a matter of public record. The legislature shall take appropriate disciplinary action unless it determines that disciplinary action is not warranted and, within thirty days of the referral of the complaint, shall notify the commission of the action taken. Days during which the legislature is not in session shall not be included in determining the thirty-day period. Any disciplinary action taken by the legislature, or the fact that no disciplinary action is taken, shall be a matter of public record.
- (b) With respect to employees other than legislators and employees removable only by impeachment: when the commission determines after due hearing pursuant to section 84-31(c) that there is sufficient cause to file a complaint against an employee other than a legislator, or an employee removable only by impeachment, it shall issue a complaint and refer the matter to the governor who shall take appropriate disciplinary action unless the governor determines that disciplinary action is not warranted. The governor shall notify the commission of the disciplinary action taken or the fact that no disciplinary action was taken, within sixty days of the referral of the complaint. The complaint and any disciplinary action taken, or the fact that no disciplinary action is taken, shall be a matter of public record.

- (c) With respect to former employees and former legislators, when the commission determines after due hearing pursuant to section 84-31(c) that there is sufficient cause to file a complaint against a former employee or former legislator, it shall issue a complaint and refer the matter to the attorney general who may exercise whatever legal or equitable remedies which may be available to the State. The complaint shall be a matter of public record.
- (d) With respect to delegates to the constitutional convention removable only by impeachment: when the ethics commission after due hearing pursuant to section 84-31(c) determines that there is sufficient cause to file a complaint against a delegate to the constitutional convention, it shall issue a complaint and refer the matter to the appropriate body of the constitutional convention. The complaint shall be a matter of public record. The appropriate body of the constitutional convention shall take appropriate disciplinary action unless it determines that disciplinary action is not warranted and, within thirty days of the referral of the complaint, shall notify the commission of the action taken. Days during which the constitutional convention is not in session shall not be included in determining the thirty-day period. Any disciplinary action taken by the constitutional convention, or the fact that no disciplinary action is taken, shall be a matter of public record.
- §84-33 Disciplinary action for violation. In addition to any other powers the civil service commission or other authority may have to discipline employees, the civil service commission or authority may reprimand, put on probation, demote, suspend, or discharge an employee found to have violated the code of ethics.
- §84-34 No compensation. The members of the ethics commission shall serve without compensation but shall be allowed their actual and necessary expenses incurred in the performance of their duties.

- §84-35 Staff. The ethics commission may employ and at pleasure remove such persons, including an executive director, as it may deem necessary for the performance of its functions. Effective July 1, 2005, the salary of the executive director shall be the same as the salary of the director of health. The commission shall fix the compensations of its employees within the amounts made available by appropriation therefor. The employees of the commission shall be exempt from chapter 76.
- §84-35.5 Prohibition from political activity. The members of the ethics commission and its staff shall not take an active part in political management or in political campaigns during the term of office or employment.
- §84-36 Cooperation. The ethics commission may request and shall receive from every department, division, board, bureau, commission, or other agency of the state cooperation and assistance in the performance of its duties.
- §84-37 Concurrent jurisdiction. Notwithstanding any provision contained herein, pursuant to Article III, section 12 of the Constitution of the State of Hawaii each house of the legislature may prescribe further rules of conduct covering its members and may investigate and discipline a member for any violation of its rules or the code of ethics.
- §84-38 Judicial branch. The powers and duties assigned in this part IV to the governor shall, with respect to employees in the judicial branch, be assigned to the chief justice of the supreme court.
- §84-39 Administrative fines. (a) Where an administrative fine has not been established for a violation of a provision of this chapter, any person, including a legislator or employee, who violates a provision of this chapter shall be subject to an administrative fine imposed by the ethics commission that shall not exceed \$500 for each violation. All fines collected under this section shall be deposited in the general fund.

- (b) No fine shall be assessed under this section unless: (1) The commission convenes a hearing in accordance with section 84-31(c) and chapter 91; and (2) A decision has been rendered by the commission.
- Part V. Mandatory Ethics Training
- §84-41 Applicability of part. This part applies to legislators, members of the board of education, trustees of the office of Hawaiian affairs, the governor, the lieutenant governor, and executive department heads and deputies. This part does not apply to any other officer or employee of the State.
- §84-42 Mandatory ethics training course. All state officers and employees enumerated in section 84-41 shall complete an ethics training course administered by the state ethics commission as provided in this part. For the purposes of this part, "ethics training" includes education and training in: (1) The ethics laws set forth in this chapter; and (2) The lobbying laws set forth in chapter 97.
- §84-43 Ethics training course. (a) The state ethics commission shall establish, design, supervise, and conduct ethics training designed specifically for the officers and employees to whom this part applies.
- (b) The ethics training course shall include: (1) Explanations and discussions of the ethics laws, administrative rules, and relevant internal policies; (2) Specific technical and legal requirements; (3)

The underlying purposes and principles of ethics laws; (4) Examples of practical application of the laws and principles; and (5) A question-and-answer participatory segment regarding common problems and situations. The state ethics commission shall develop the methods and prepare any materials necessary to implement the course. (c) The state ethics commission shall: (1) Administer the ethics training course; (2) Designate those of its legal staff who are to conduct the ethics training course; and (3) Notify each officer or employee enumerated in section 84-41 that their attendance in this course is mandatory. (d) The ethics training course shall be held in January of each year for those who have not attended the course previously. The course shall last at least two hours in length. (e) The state ethics commission may repeat the course as necessary to accommodate all persons who are required to attend. (f) Each state agency shall provide to the state ethics commission the names of those required to take the course in a timely manner and assist the commission by providing adequate meeting facilities for the ethics training course.

[This revision of the code of ethics is unofficial and for convenience only. Consult Hawaii Revised Statutes for the official codification of this law.]

July 2014

ADMISSION DEADLINES, PROCEDURE, & PROCESSING

ALL-Hawaii will be open to admissions applications (grades k-8) for the 2017-2018 SY beginning February 1st, a deadline also used by the DOE for GE applications. Applications are due by Monday, April 3rd, 5pm. The application is available on our school website, and at our school site. We will accept either mailed or emailed applications. ADMISSION POLICIES

- ALL-Hawaii adheres to HRS 302D-34b, which states that charter schools are open to any student residing within the state that submit applications in a timely way. We have no enrollment preferences, and are open to students K-8.
- If we receive more applications than we have spots, we will conduct a public lottery, to be carried out in accordance with HRS-302D-34b. This will take place on April 10th at the school site. Attendance is not required, nor is it a factor in the lottery. Lottery winners will be notified, and a waitlist will be created. Lottery winners will receive notification via phonecall and email.
- Age requirements:
 - According to Federal Law, your child must be 5 by August 1st to enroll in kindergarten.
 Course placement is dictated primarily by cognitive assessment, rather than strict grade level placement.
- Code of Conduct o ALL-Hawaii believes that learning is sacred, and as such, places
 this expectation upon its students. All students who seek enrollment must be willing to
 adhere to the school's code of conduct.

TIMELINE AND PLAN FOR RECRUITMENT & ENGAGEMENT

Upon securing the facility, ALL-Hawaii will immediately coordinate with the developer to have the proposed school's information made available to new residents, and to have applications distributed to current and incoming residents. ALL will also utilize the recruitment methods set forth in section III.D.1, and it will be implemented as soon as the facility is maintained. As residents will drive by the school as it's being built, ALL Hawaii will also post a sign, indicating that it is the future site of ALL-Hawaii's Charter School, and it will contain web address information, which will also provide access to online letters of interest in enrolling

LOTTERY & WAITLIST PROCEDURES

- The lottery will consist of applications being drawn at random until all open spots are filled. Afterwards, the waitlist will be created in random order as they are drawn, separated into two sub-lists (elementary and middle school). Wait list positions will be held until the end of quarter 1, at which point it will be emptied, and students must reapply.
- EXEMPTIONS—priority is given to returning students, children of ALL-Hawaii staff members, and siblings of returning students.
 A student loses "returning student"

status if he or she voluntarily submits a withdrawal form AND drops from our enrollment. Afterwards, the student will be forced to reapply and enter the lottery with other applicant students.

PREADMISSION ACTIVITIES

- ALL-Hawaii strongly recommends that families review the school's code of conduct and curriculum. Given how vastly ALL-Hawaii differs from traditional schools, it is vital that parents are aware of and actively choosing this environment for their children.
- Fill out and submit the enrollment application, attached on the next page (taken directly from DOE's website).

School Name: Date applie	cation received:		
TUDENT APPLICATION FORM 2017-2018 NSTRUCTIONS: To apply please <u>complete Page 1 ONL</u>	Information Sess.	School Tour FOR SCHOOL USE ONLY	nto Adm Policy
STUDENT	PERSONAL DATA		
Last Name:	Birth Date:		
First Name: Middle Initial: Lineage: (Jr, II, III, etc.)		dergarten: Or Grade:	
Home Phone: Cellular Numb	er:	Unlisted: Yes _	No
Number Street Apt. #	Number	Street	Apt. #
City State Zip code	City	State	Zip code
PRESCHOOL EXPERIENCE	CURRENT SCHOOL ATTENDING		IDING
Preschool Experience: Yes No If "Yes"-attended: less than 6 months between 6 and 12 months more than 1 year	Name:	Year:	2014-2015
CIT	IZENSHIP		
		e year of arrival:l ugee Immigrantl n Number:	

PARENT/GUARDIAN CONTACT INFORMATION

	Check One: Mr M	rs Ms Other (sp	ecify) Relation:	
F	Last Name	First Name	Empl	oyer's Name
I R S	Home Phone #	Cellular Phone #	Work Phone # (include ext.)	
	Address (if different from	student's)		
			No Child lives with this nent, parent must provide documentat	
S	Check One: Mr M	rs Ms Other (sp	ecify) Relation:	
С				
0	Last Name	First Name	Empl	oyer's Name
	Home Phone #	Cellular Phone #	Work Phone # (include ext.)	Email Address
	Address (if different from			
			No Child lives with this	

	SCHOOL SUPPLEME	NTARY INFORMATION -	Other Children in Family	
Name	Age	Name	Age	
1.		3		
1		3		
1.		3.		
in a		2		
Name	Age	Name	Age	
Name	Age	Name	Age	

Language Codes: (Sele	ct a letter from the list and	fill in the blanks below)			
Stud	dent's First	Language N	Most Often	Language M	ost Often
Acc	quired Language	Spoken at I	Home	Used by Stu	udent
A - English	F - Cebuno/Visayan	K - Vietnamese	Q - F jian	V - Pangasinan	L - Other (Specify):
B - Cantonese	G - Hawaiian	M - Chuukese	R - Hmong	W - Portugese	
C - Mandarin	H - Japanese	N - Pohnpeian	S - Lao	X - Spanish	
D - Ilocano	I - Korean	O - Cambodian	T - Marshallese	Y - Thai	
E - Tagalog	J - Samoan	P - Chamorro	U - Pampango	Z - Tongan	
ETHNICITY INFORMATION (For Demographic Purposes Only)					
Ethnicity Code: (Select up to 2 choices from the list below and fill in the blank(s) to the left)					
A - American Indian	D - Filipino	G - Japanese	J - Span, Cuba, Mex, Puerto I	Rican M	- Other (Specify):
B - Black	E - Hawaiian	H - Korean	K - Samoan		
C - Chinese	F - Part Hawaiian	I - Portuguese	L - White	N - Indo-Chir	nese
(Camb, Viet, Lao)					
OTHER INFORMATION					
	(Person to Notify	In Case Of Emergency	y if First or Second Contact cann	ot be reached)	
Check One:	_MrMrs	Ms Oth	er (specify)	Relation:	
Last Name – First Nam					
Last Name First Nam	Last Name First Name Employer's Name				
- Harra Dhana		ida Dhaa II	Wada Dhara II (in duda a		Consil Address
Home Phone	:# Cel	ular Phone #	Work Phone # (include ex	KL.)	Email Address
PHYSICIAN INFORMATION					

Doctor's Name or Clinic Name	Office Phone #	Medical Insurance		
PRIOR SCHOOL ATTENDED				
Name:		_		
Address:				
<u> </u>				
ADDITIONAL INFORMATION				
A. Does this student have a current IEP, 504, or relate so, please describe and/or provide documentation.	d services? Yes	No If		
B. Does student's father, mother, or guardian work for Government or work on Federal Property?	the Federal Yes	No		
C. Is student's father, mother, or guardian a member of Services, National Guard, or Reserves?	of the Armed Yes	No		

Community Support

Peter Kwan, Senior Vice President of Delta Construction Corporation, provides invaluable community support for ALL-Hawaii. He has provided us with research, data, and community insight, much of which can be seen in the area research that we've provided, such as the data in Attachment B.

ALL-HAWAII START UP PLAN

OBTAINING FACILITY

Immediately upon securing the charter approval of the state, ALL-Hawaii will finalize negotiations with the developer so that construction may begin in a timeline that matches that of our plans below.

PLANS FOR FUNDING START UP PERIOD

ALL-Hawaii's Applicant Board has already begun fundraising from private sources, which will provide adequate funding for the start-up period.

MARKETING PLAN

Upon securing the facility, ALL-Hawaii will immediately coordinate with the developer to have the proposed school's information made available to new residents, and to have school applications distributed to current and incoming residents. ALL will also utilize the recruitment methods set forth in section III.D.1, and it will be implemented as soon as the facility is maintained. As residents will drive by the school as it's being built, ALL Hawaii will also post a sign, indicating that it is the future site of ALL-Hawaii's Charter School, and it will contain web address information, which will also provide access to online letters of interest in enrolling.

HIRING PLAN

The hiring process will officially start in February, but ALL Hawaii will immediately begin contacting local agencies, such as the University of Hawaii's West O'ahu's Center for Teaching and Learning Excellence. ALL will work closely with the college's career center to coordinate interviews with local candidates who already live and work in the area. If necessary, ALL-Hawaii will also recruit qualified candidates from the mainland, specifically from the Tucson area, where there is a pool of teachers already familiar with the curriculum's implementation and methodology as well as the data collection software. Finally, plans and professional deadlines mentioned in II.E.4 and II.E.2 will still apply and be considered part of this timeline. The Applicant Board is also negotiating for housing incentives to be made available for staff and teachers within the new development.

ADDITIONAL TASKS

Curriculum and the data collection software is already chosen and developed, so this will not need to be completed during the startup period. The admission application is already created (see Attachment Y), but the School's Website and Facebook pages will need to be immediately created by the Applicant Board (which has in house capabilities) in order to ensure that marketing happens immediately. Beyond hiring and training staff, ALL-Hawaii will have to maintain contact with the developer and monitor the completion of the school's facility. Furnishings and supplies necessary for our projected enrollment will

need to be ordered and in place for the school's opening pertaining to Enrollment.	See Attachment Y for specific deadlines

Essential Planning and Support

ALL-Hawaii will be using curriculum initially developed by David Jones, applicant board member, in exchange for its agreement to allow the data pulled from MARC to be used to improve the software and curriculum.

The governing board and school staff will still operate the school directly. However, given the enormity of the task that is starting a new charter school, it makes sense to utilize the curriculum of David Jones, whose mission is to contribute to the field of education through the creation of innovative curriculum and educational approaches. The curriculum allows ALL-Hawaii to immediately begin with the foundational elements in place—curriculum, training, and support. The Service Provider is donating curriculum, training, and support, and ALL-Hawaii will allow it to use the student data to further improve their curriculum and data collection software. ALL-Hawaii, however, will remain an independent entity, operating itself directly through the board of directors.

David Jones, an applicant board member, is the owner of the [S-Corp], and he is currently the headmaster at ALL-Tucson, the employer of a few applicant board members. However, the governing board policy of ALL-Hawaii has specific conflict of interest policies that will prevent conflict of interests from impacting the ethics of ALL-Hawaii. See Attachment V. Further, its transition to a larger board, filled with local advisory members, will further enforce an appropriate separation amongst all entities involved. See Attachments R and T.

The David Jones only additional role as Board Member is to provide curriculum, support materials, and any developmental training that goes along with said materials. ALL-Hawaii will be required to give access to the student performance data, so that SP can use it to improve the curriculum and support materials. Neither David nor ALL-Hawaii are exchanging money for this curriculum, and neither parties are benefitting financially from the agreement.

JENNIFER A. WITTMAN

EDUCATION

University of Arizona James E. Rogers College of Law, Tucson, AZ

Juris Doctor, May 2011

- Passed the Summer 2011 Bar Exam
- Bertha B. Hollis Native American Scholarship recipient
- Volunteer Lawyers Program, Outstanding Student of the Month Award
- 2L Moot Court, Volunteer Lawyer Program Child Support Clinic, Primavera Men's Shelter Legal Referral Clinic, Phi Alpha Delta Legal Fraternity, Student Bar Association, Latino Law Student Association, Gonzales-Villarreal Bridge Program

University of Arizona, Tucson, AZ

Bachelor of Arts, Creative Writing, May 2008

☐ Dean's List: Fall '04, Spring '05, Fall '05, Spring '06; UA Provost Scholarship (Full Tuition); UA Spirit of Discovery Scholarship; Robert C. Byrd Scholarship

EXPERIENCE

ENGLISH DEPARTMENT HEAD & INSTRUCTOR, ALL Tucson

(August 2011-present)

Developed curriculum for differentiated instruction. Taught classes comprised of multiple grade levels and ranges. Trained and received training in Cognitive Research based Teaching Methodology and Implementation. Taught ages 11 to 18. Debate Coach. Mentored new teachers in curriculum implementation.

Project Based Research, Tucson, AZ

Sarbane-Oxley Research (April 2011-August 2011)

Performed project based research for former Department of Labor ARB Judge in regards to Sarbane Oxley changes occurring after he left the Board. Researched new and impending legislation, as well as how those changes have been interpreted and how they alter procedure and grounds of potential lawsuits.

Pima County Public Defender's Office: Felony Division, Tucson, AZ

38(d) Student Lawyer with Michael Rosenbluth (January 2010-July 2010)

Co-counsel on two criminal trials: 1) prohibited possession 2) kidnapping, aggravated assault with a deadly weapon, domestic violence. Not guilty on kidnapping and aggravated assault with deadly weapon charges. Argued purposeful destruction of evidence motion for dui/manslaughter case. Researched, drafted and edited numerous motions for all ranges of criminal cases and argued hearings for all stages of criminal defense. Successfully argued for a class six open to be designated a misdemeanor at sentencing. Researched and wrote mitigation memos and conducted the sentencing hearing. Interviewed clients, witnesses, and deputies.

JENNIFER A. WITTMAN

EXPERIENCE CONT.

City of Tucson Public Defenders Office, Tucson, AZ

Summer Intern (June 2009-July 2009)

Performed detailed statutory research and drafted motions on various matters, including DUI, assault, domestic violence, animal laws, jurisdiction, and sentencing. City Judge granted motion to withdraw plea. Drafted an appeal. Reviewed police interviews and evidence interrogatories for trial. Observed all stages of court proceedings.

Yanker Law Firm, Tucson, AZ

Administrative Associate (June 2006-August 2008)

Trained and supervised administrative associates. Researched trust, tax, and intellectual property issues. Prepared client documentation for civil litigation. Drafted trust and will documents. Managed Tucson office.

Catalina Foothills Unified School District, Tucson, AZ

C.A.R.E. Program Aide (August 2005-May 2006)

Supervised elementary school students in before and after school programs. Created and led student activities. Provided homework help, interacted with parents and school employees.

St. Michael's Day School, Tucson, AZ

Assistant Softball Coach (October 2004-January 2005)

Created and implemented junior varsity middle school squad practice program. Worked with Varsity coach to coordinate overall practice schedule. Interacted with students, parents, and school employees.

VOLUNTEER WORK

City of Tucson Homeless Court

Volunteer Advocate on behalf of homeless clients in need of legal services

Sunnyside School District, Tucson, AZ

Latino Law Student Association: Career Information Sessions (September 2008-May 2011)

AZSportsNetwork, Tucson, AZ

Chess camp coach

Gospel Rescue Missions, Tucson, AZ

Holiday Server & Volunteer

ALL has selected Jennifer Wittman as the School Director for ALL-Hawaii.

School Director, especially in this circumstance, must not just lead the school, but must also develop the school, system, and staff simultaneously. This takes not just initiative and determination, but also an indepth knowledge of the proposed curriculum and pedagogy. Jennifer has these traits, as well as handson teaching experience and a strong academic resume, which make her a perfect match for our School Director.

Jennifer began her teaching career in Tucson, in a position that, a week prior to school starting, was still unfilled. With no teaching experience and only a week training, she developed course curriculum and immediately began teaching a course load ranging from AP classes to middle school grammar, all of which required the ability to apply differentiated instruction, as the classes were of mixed grades, ages, and ability levels. Jennifer found success quickly, adapting to challenges as they arose, and developing her teaching style while on the job. This adaptability and ease while under pressure will be vital for our school Director.

Additionally, Jennifer came to be the resident expert in the Language Curriculum, and even developed support materials for them. She effectively uses behavioral shaping to guide her students in a positive, non-confrontational manner.

Jennifer has built a reputation as someone who is firm but fair. Students can count on her support, but are aware that they will not be allowed to go unnoticed or unassisted in her classroom.

Her background in education, as shown by her resume, is clearly impressive and in line with what we'd expect to see in our school's leader. More importantly, she demonstrates an understanding and ability to work with diverse students, given her experience on various Native American and at-risk communities.

Jennifer has turned into a Lead Teacher—training staff, conducting staff meeting training sessions, and generally taking care of whatever needs to be done to support her students. For all of these reasons, we're confident that Jennifer Wittman is the right person for our School Director. Her resume is attached on Attachment II.

Management Team will consist of Lead Teacher selected in the Elementary and Middle School Teaching Staff. Prior to Quarter 1 beginning, and as soon as the teaching staff is fully selected, the School Director will assess which individuals are most comfortable with the curriculum and pedagogy. They will serve as "Teacher in Charge" when the director is gone, and will also be the teacher leadership.

In Year 1, two of the strongest teachers will be "mentored" into their roles by the School Director, and then they will serve as extra evaluators for their successors, should the resign or give up the position. Teacher evaluations (Attachment I) will be utilized.