STATE BOARD OF EDUCATION Action Item February 18, 2014

SUBJECT: Approval of Amendment to Rule 6A-1.09401, Student Performance Standards

PROPOSED BOARD ACTION

For Approval

AUTHORITY FOR STATE BOARD ACTION

Sections 1001.02, 1001.03, Florida Statutes

EXECUTIVE SUMMARY

This amendment revises Rule 6A-1.09401, F.A.C., to update the Next Generation Sunshine State Standards for social studies to now include student expectations (concepts and skills) for psychology and sociology; the arts (more specifically music) now includes one additional standard for high school related to basic performance expectations; health education now includes more specificity and clarity related to concepts and skills; physical education now includes more measurable student expectations; gifted education concepts and skills align with the frameworks for gifted education; and special skills now define student expectations, concepts and skills. In addition, new Next Generation Sunshine State Standards for English language arts, mathematics, and core content connectors for mathematic for students with significant cognitive disabilities.

Supporting Documentation Included: Proposed Rule 6A-1.09401, Student Performance Standards. Next Generation Sunshine State Standards for Social Studies, 2014; Next Generation Sunshine State Standards for the Arts, 2014; Next Generation Sunshine State Standards for Health Education, 2014; Next Generation Sunshine State Standards for Physical Education, 2014; Next Generation Sunshine State Standards for Gifted Education, 2014; Next Generation Sunshine State Standards for Special Skills, 2014; Next Generation Sunshine State Standards for English Language Arts and Next Generation Sunshine State Standards for Mathematics, 2014 (under separate cover)

Facilitator/Presenter: Mary Jane Tappen, Deputy Chancellor, K-12 Curriculum, Instruction, and Student Services

6A-1.09401 Student Performance Standards.

(1) Student Performance Standards in Florida are defined as the Next Generation Sunshine State Standards and establish the core content of the curricula to be taught and specify the core content knowledge and skills that K-12 public school students are expected to acquire. The Next Generation Sunshine State Standards are rigorous and reflect the knowledge and skills students need for success in college and careers. Standards to benchmark student achievement serve as guides to best practices for local curriculum designers to help schools implement school improvement strategies to raise student achievement. Currently, the Next Generation Sunshine State Standards Reading and Language Arts 2007, referenced below in paragraph (1)(a), describe what students should know and be able to do at grade level progression for kindergarten to grade 8 and in grade bands for grade levels 9 10 and 11 12. Beginning with the 2013 2014 school year, the English Language Arts benchmarked standards for English Language Arts referenced below in paragraph (1)(c), The standards and benchmarks describe what students should know and be able to do at grade level progression for kindergarten to grade 8 and in grade bands for grade levels 9-10 and 11-12 for each of the reading and language arts content areas of: Reading, Writing, Speaking and Listening, and Language. Currently, the Next Generation Sunshine State Standards Mathematics 2008, referenced below in paragraph (1)(b), describe what students should know and be able to do at grade level progression from kindergarten to grade 8 and in a grade band for grade levels 9 12. Beginning with the 2013 2014 school year, the benchmarked standards for Mathematics referenced below in paragraph (1)(d), describe what students should know and be able to do at grade level progression from kindergarten to grade 8 and for each of the Mathematics content areas of: Number and Quantity, Algebra, Functions, Modeling, Statistics and Probability, and Geometry for grades 9-12. Beginning with the 2008 2009 school year, the benchmarked standards for Science referenced below in paragraph (1)(e), describe what students should know and be able to do at grade level progression from kindergarten to grade 8 and for each of the science content areas of: Earth and Space Science, Life Science, Physical Science, and Nature of Science for grades 9 12. Beginning with 2009 2010, the Health, Physical Education, and Social Studies benchmarked standards, referenced below in paragraphs (1)(f), (i), and (j), including one additional grade 1 Social Studies standard added in 2010, describe what students should know and be able to do at ten progression levels (grades K, 1, 2, 3, 4, 5, 6, 7, 8, 9-12). Beginning with the 2011-2012 school year, the benchmarked standards for World Languages referenced below in paragraph (1)(g) describe what students should know and be able to do at eight levels of proficiency. Beginning with the 2011 2012 school year, the benchmarked standards for the Arts,

specifically Dance, Music, Theatre, and Visual Art, referenced below in paragraph (1)(h), describe what students should know and be able to do at grade level progression for kindergarten to grade 5 and in grade bands for grade levels 6 8 and 9 12. The access points <u>and core content connectors</u> contained in either the Next Generation Sunshine State Standards or the Sunshine State Standards provide access to the general education curriculum for students with significant cognitive disabilities. Public schools shall provide appropriate instruction to assist students in the achievement of these standards or the Sunshine State Standards for Special Diploma as appropriate. These standards, benchmarks, and access points <u>and core content connectors</u> are contained in the following publications which are hereby incorporated by reference and made a part of this rule.

(a) Next Generation Sunshine State Standards Reading and Language Arts, 2007,

(b) Next Generation Sunshine State Standards Mathematics, 2008,

(a) (c) Next Generation Sunshine State Standards (Florida Standards Common Core) – English Language Arts and Literacy in History/Social Studies, Science, and Technical Subjects, 2014 (insert link)2010,

(b) (d) Next Generation Sunshine State Standards (Florida Standards Common Core) – Mathematics, 2014 (insert link)2010,

(c) (e) Next Generation Sunshine State Standards - Science, 2008,

- (d) (f) Next Generation Sunshine State Standards Social Studies, 2014 (insert link)2009, revised 2010,
- (e) (g) Next Generation Sunshine State Standards World Languages, 2011,
- (f) (h) Next Generation State Standards The Arts, 2014 (insert link)2011,

(g)(i) Next Generation Sunshine State Standards – Health Education, 2014 (insert link)2009,

(h) (j) Next Generation Sunshine State Standards – Physical Education, 2014 (insert link) 2009, and

(i) Next Generation Sunshine State Standards - Gifted Education, 2014, (insert link)

(j) Next Generation Sunshine State Standards - Special Skills, 2014, (insert link)and

(k) Sunshine State Standards for Special Diploma, 1999.

Copies of these publications may be obtained from the Division of Public Schools, Department of Education, 325 West Gaines St., Tallahassee, Florida 32399-0400.

(2) Every twelve (12) years from the effective date of the last amendment of the standards for a subject area, <u>T</u>the Commissioner shall <u>periodically review</u>, accept <u>public comment on and revise Florida standards</u>. <u>The process</u> <u>shall begin with convening convene</u> an expert group to review the standards and make recommendations to the Commissioner for their review and revision. The Commissioner shall determine whether revisions are necessary based on the recommendations of the expert group, and shall propose such revisions to the State Board <u>of Education</u> for adoption. The Commissioner may initiate expert review of a set of standards after a period of less than twelve (12) years, if the Commissioner determines that developments have occurred in that subject area such as to make existing standards inadequate.

(3) through (4) No change.

Rulemaking Authority 1001.02, 1003.41(4) FS. Law Implemented 1001.03, 1003.41 FS. History–New 6-18-96, Amended 9-28-99, 3-1-07, 7-25-07, 11-25-07, 4-14-08, 9-22-08, 2-1-09, 1-6-10, 9-5-10, 2-8-11.

Next Generation Sunshine State Standards (Florida Standards) – English Language Arts and Literacy in History/Social Studies, Science, and Technical Subjects, 2014

LAFS: Language Arts Florida Standards

GRADE: K

Strand: READING STANDARDS FOR LITERATURE

Cluster 1: Key Ideas and Details

STANDARD CODE	STANDARD
LAFS.K.RL.1.1	With prompting and support, ask and answer questions about key details in a text.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.K.RL.1.2	With prompting and support, retell familiar stories, including key details.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.K.RL.1.3	With prompting and support, identify characters, settings, and major events in a story.
	Cognitive Complexity: Level 1: Recall

Cluster 2: Craft and Structure	
STANDARD CODE	STANDARD
LAFS.K.RL.2.4	With prompting and support, ask and answer questions about unknown words in a text.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.K.RL.2.5	Recognize common types of texts (e.g., storybooks, poems).
	<u>Cognitive Complexity:</u> Level 1: Recall
LAFS.K.RL.2.6	With prompting and support, identify the author and illustrator of a story and define the role of each in telling the story.
	Cognitive Complexity: Level 1: Recall

Cluster 3: Integration of Knowledge and Ideas	
STANDARD CODE	STANDARD
LAFS.K.RL.3.7	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). <i>Cognitive Complexity:</i> Level 2: Basic Application of Skills & Concepts
LAFS.K.RL.3.9	With prompting and support, compare and contrast the adventures and experiences of characters in familiar stories.

Cluster 4: Range of Reading and Level of Text Complexity	
STANDARD CODE	STANDARD
LAFS.K.RL.4.10	Actively engage in group reading activities with purpose and understanding.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

The alphanumeric coding scheme has changed –

Language Arts Common Core (LACC) is now Language Arts Florida Standards (LAFS)

Strand: READING STANDARDS: FOUNDATIONAL SKILLS (K-5)

Cluster 1: Print Concepts

STANDARD CODE	STANDARD
LAFS.K.RF.1.1	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.
	Cognitive Complexity: Level 1: Recall

reness
STANDARD
onstrate 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.

STANDARD CODE	STANDARD
LAFS.K.RF.3.3	Know and apply grade-level phonics and word analysis skills in decoding words.
	 a. Demonstrate basic knowledge of one-to-one letter-sound correspondences by producing the primary or many of the 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.
	Cognitive Complexity: Level 1: Recall

Cluster 4: Fluency

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STANDARD CODE	STANDARD
LAFS.K.RF.4.4	Read emergent-reader texts with purpose and understanding.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Strand: READING STANDARDS FOR INFORMATIONAL TEXT

Cluster 1: Key Ideas and Details

STANDARD CODE	STANDARD
LAFS.K.RI.1.1	With prompting and support, ask and answer questions about key details in a text.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.K.RI.1.2	With prompting and support, identify the main topic and retell key details of a text.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.K.RI.1.3	With prompting and support, describe the connection between two individuals, events, ideas, or pieces of information in a text.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Cluster 2: Craft and Structure	
STANDARD CODE	STANDARD
LAFS.K.RI.2.4	With prompting and support, ask and answer questions about unknown words in a text.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.K.RI.2.5	Identify the front cover, back cover, and title page of a book.
	Cognitive Complexity: Level 1: Recall
LAFS.K.RI.2.6	With prompting and support, identify the author and illustrator of a text and define the role of each in presenting the ideas or information in a text.
	Cognitive Complexity: Level 1: Recall

Cluster 3: Integration of Knowledge and Ideas	
STANDARD CODE	STANDARD
LAFS.K.RI.3.7	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).
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.K.RI.3.8	With prompting and support, identify the reasons an author gives to support points in a text.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.K.RI.3.9	With prompting and support, identify basic similarities in and differences between two texts on the same topic (e.g., in illustrations, descriptions, or procedures).
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Cluster 4: Range of Reading and Level of Text Complexity

STANDARD CODE

STANDARD

The alphanumeric coding scheme has changed –

Language Arts Common Core (LACC) is now Language Arts Florida Standards (LAFS)

LAFS.K.RI.4.10	Actively engage in group reading activities with purpose and understanding.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Strand: WRITING STANDARDS

Cluster 1: Text Types and Purposes

STANDARD CODE	STANDARD
LAFS.K.W.1.1	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).
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.K.W.1.2	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.K.W.1.3	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 2: Production and Distribution of Writing	
STANDARD CODE	STANDARD
LAFS.K.W.2.5	With guidance and support from adults, respond to questions and suggestions from peers and add details to strengthen writing as needed.
LAFS.K.W.2.6	With guidance and support from adults, explore a variety of digital tools to produce and publish writing, including in collaboration with peers.

Cluster 3: Research to Build and Present Knowledge	
STANDARD CODE	STANDARD
LAFS.K.W.3.7	Participate in shared research and writing projects (e.g., explore a number of books by a favorite author and express opinions about them). <u>Cognitive Complexity:</u> Level 4: Extended Thinking &Complex Reasoning
LAFS.K.W.3.8	With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question.

Strand: STANDARDS FOR SPEAKING AND LISTENING

Cluster 1: Comprehension and Collaboration

STANDARD CODE	STANDARD
LAFS.K.SL.1.1	Participate in collaborative conversations with diverse partners about kindergarten
	topics and texts with peers and adults in small and larger groups.

The alphanumeric coding scheme has changed –

Language Arts Common Core (LACC) is now Language Arts Florida Standards (LAFS)

	 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.
LAFS.K.SL.1.2	
LAF S.R. SL. 1.2	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.K.SL.1.3	Ask and answer questions in order to seek help, get information, or clarify something that is not understood.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

STANDARD CODE	STANDARD
LAFS.K.SL.2.4	Describe familiar people, places, things, and events and, with prompting and support, provide additional detail.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.K.SL.2.5	Add drawings or other visual displays to descriptions as desired to provide additional detail.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.K.SL.2.6	Speak audibly and express thoughts, feelings, and ideas clearly.
	<u>Cognitive Complexity:</u> Level 1: Recall

Strand: LANGUAGE STANDARDS

Cluster 1: Conventions of Standard English	
STANDARD CODE	STANDARD
LAFS.K.L.1.1	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.
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	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.K.L.1.2	Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.

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a b c d	 Recognize and name end punctuation. Write a letter or letters for most consonant and short-vowel sounds (phonemes).
Cogn	<u>itive Complexity:</u> Level 1: Recall

Cluster 3: Vocabulary Acquisition and Use	
STANDARD CODE	STANDARD
LAFS.K.L.3.4	 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., <i>-ed, -s, re-, un-, pre-, -ful, -less</i>) as a clue to the meaning of an unknown word.
LAFS.K.L.3.5	<u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts 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., <i>walk, march, strut, prance</i>) by acting out the meanings.
LAFS.K.L.3.6	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning Use words and phrases acquired through conversations, reading and being read to, and
	responding to texts. <u>Cognitive Complexity:</u> Level 1: Recall

GRADE: 1

Strand: READING STANDARDS FOR LITERATURE

Cluster 1: Key Ideas and Details

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STANDARD CODE	STANDARD
LAFS.1.RL.1.1	Ask and answer questions about key details in a text.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.1.RL.1.2	Retell stories, including key details, and demonstrate understanding of their central message or lesson.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.1.RL.1.3	Describe characters, settings, and major events in a story, using key details.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 2: Craft and Structure	
STANDARD CODE	STANDARD
LAFS.1.RL.2.4	Identify words and phrases in stories or poems that suggest feelings or appeal to the senses.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.1.RL.2.5	Explain major differences between books that tell stories and books that give information, drawing on a wide reading of a range of text types.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.1.RL.2.6	Identify who is telling the story at various points in a text.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 3: Integration of Knowledge and Ideas	
STANDARD CODE	STANDARD
LAFS.1.RL.3.7	Use illustrations and details in a story to describe its characters, setting, or events. Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.1.RL.3.9	Compare and contrast the adventures and experiences of characters in stories. <u>Cognitive Complexity:</u> Level 3: Strategic Thinking & Complex Reasoning

Cluster 4: Range of Reading and Level of Text Complexity	
STANDARD CODE	STANDARD
LAFS.1.RL.4.10	With prompting and support, read prose and poetry of appropriate complexity for grade 1.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Strand: READING STANDARDS: FOUNDATIONAL SKILLS (K-5)

The alphanumeric coding scheme has changed –

Language Arts Common Core (LACC) is now Language Arts Florida Standards (LAFS)

Cluster 1: Print Concepts	
STANDARD CODE	STANDARD
LAFS.1.RF.1.1	Demonstrate understanding of the organization and basic features of print. a. Recognize the distinguishing features of a sentence (e.g., first word, capitalization, ending punctuation).
	Cognitive Complexity: Level 1: Recall

Cluster 2: Phonological Awareness		
STANDARD CODE	STANDARD	
LAFS.1.RF.2.2	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). 	
	<u>Cognitive Complexity:</u> Level 1: Recall	

Cluster 3: Phonics and Word Recognition

STANDARD CODE	STANDARD	
LAFS.1.RF.3.3	Know and apply grade-level phonics and word analysis skills in decoding words.	
	 a. Know the spelling-sound correspondences for common consonant digraphs. 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. 	
	<u>Cognitive Complexity:</u> Level 1: Recall	

Cluster 4: Fluency	
STANDARD CODE	STANDARD
LAFS.1.RF.4.4	Read with sufficient accuracy and fluency to support comprehension.
	a. Read on-level text with purpose and understanding.
	The alphanumeric coding scheme has changed –

Language Arts Common Core (LACC) is now Language Arts Florida Standards (LAFS)

b.	Read on-level text orally with accuracy, appropriate rate, and expression on successive readings.
C.	Use context to confirm or self-correct word recognition and understanding, rereading as necessary.
Coaniti	ve Complexity: Level 2: Basic Application of Skills & Concepts

Strand: READING STANDARDS FOR INFORMATIONAL TEXT

Cluster 1: Key Ideas and Details

STANDARD CODE	STANDARD
LAFS.1.RI.1.1	Ask and answer questions about key details in a text.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.1.RI.1.2	Identify the main topic and retell key details of a text.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.1.RI.1.3	Describe the connection between two individuals, events, ideas, or pieces of information in a text.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 2: Craft and Structure

STANDARD CODE	STANDARD
LAFS.1.RI.2.4	Ask and answer questions to help determine or clarify the meaning of words and phrases in a text.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.1.RI.2.5	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.1.RI.2.6	Distinguish between information provided by pictures or other illustrations and information provided by the words in a text.
	Cognitive Complexity: Level 1: Recall

Cluster 3: Integration of Knowledge and Ideas

STANDARD CODE	STANDARD
LAFS.1.RI.3.7	Use the illustrations and details in a text to describe its key ideas.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.1.RI.3.8	Identify the reasons an author gives to support points in a text.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.1.RI.3.9	Identify basic similarities in and differences between two texts on the same topic (e.g., in illustrations, descriptions, or procedures).
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

The alphanumeric coding scheme has changed – Language Arts Common Core (LACC) is now Language Arts Florida Standards (LAFS) Amended Standard

Cluster 4: Range of Reading and Level of Text Complexity	
STANDARD CODE	STANDARD
LAFS.1.RI.4.10	With prompting and support, read informational texts appropriately complex for grade 1.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Strand: WRITING STANDARDS

Cluster 1: Text Types and Purposes STANDARD CODE **STANDARD** LAFS.1.W.1.1 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. Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning LAFS.1.W.1.2 Write informative/explanatory texts in which they name a topic, supply some facts about the topic, and provide some sense of closure. Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning LAFS.1.W.1.3 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. Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Cluster 2: Production and Distribution of Writing

STANDARD CODE	STANDARD
LAFS.1.W.2.5	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. <u>Cognitive Complexity:</u> Level 3: Strategic Thinking & Complex Reasoning
LAFS.1.W.2.6	With guidance and support from adults, use a variety of digital tools to produce and publish writing, including in collaboration with peers. <u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts

Cluster 3: Research to Build and Present Knowledge

STANDARD CODE	STANDARD
LAFS.1.W.3.7	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). <u>Cognitive Complexity:</u> Level 4: Extended Thinking &Complex Reasoning
LAFS.1.W.3.8	With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question. <u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts

Strand: STANDARDS FOR SPEAKING AND LISTENING

Cluster 1: Comprehension and Collaboration

The alphanumeric coding scheme has changed -

Language Arts Common Core (LACC) is now Language Arts Florida Standards (LAFS)

STANDARD CODE	STANDARD
LAFS.1.SL.1.1	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.1.SL.1.2	Ask and answer questions about key details in a text read aloud or information presented orally or through other media. <u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts
LAFS.1.SL.1.3	Ask and answer questions about what a speaker says in order to gather additional
	information or clarify something that is not understood.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 2: Presentation of Knowledge and Ideas	
STANDARD CODE	STANDARD
LAFS.1.SL.2.4	Describe people, places, things, and events with relevant details, expressing ideas and feelings clearly.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.1.SL.2.5	Add drawings or other visual displays to descriptions when appropriate to clarify ideas, thoughts, and feelings.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.1.SL.2.6	Produce complete sentences when appropriate to task and situation. (See grade 1 Language standards 1 and 3 on page 26 for specific expectations.)
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Strand: LANGUAGE STANDARDS	
Cluster 1: Convention	s of Standard English
STANDARD CODE	STANDARD
LAFS.1.L.1.1	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).

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	 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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.1.L.1.2	 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.

STANDARD CODE	STANDARD
LAFS.1.L.3.4	 Determine or clarify the meaning of unknown and multiple-meaning words and phrase 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 form (e.g., looks, looked, looking).
LAFS.1.L.3.5	<u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts With guidance and support from adults, demonstrate understanding, word relationship 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 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.
LAFS.1.L.3.6	<u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts Use words and phrases acquired through conversations, reading and being read to, a responding to texts, including using frequently occurring conjunctions to signal simple relationships (e.g., <i>I named my hamster Nibblet because she nibbles too much becau</i>

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GRADE: 2

Strand: READING STANDARDS FOR LITERATURE

Cluster 1: Key Ideas and Details

STANDARD CODE	STANDARD
LAFS.2.RL.1.1	Ask and answer such questions as <i>who, what, where, when, why</i> , and <i>how</i> to demonstrate understanding of key details in a text.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.2.RL.1.2	Recount stories, including fables and folktales from diverse cultures, and determine their central message, lesson, or moral.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.2.RL.1.3	Describe how characters in a story respond to major events and challenges.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

STANDARD CODE STANDARD LAFS.2.RL.2.4 Describe how words and phrases (e.g., regular beats, alliteration, rhymes, repeated lines) supply rhythm and meaning in a story, poem, or song. Cognitive Complexity: Level 2: Basic Application of Skills & Concepts LAFS.2.RL.2.5 Describe the overall structure of a story, including describing how the beginning introduces the story and the ending concludes the action. Cognitive Complexity: Level 2: Basic Application of Skills & Concepts LAFS.2.RL.2.6 Acknowledge differences in the points of view of characters, including by speaking in a different voice for each character when reading dialogue aloud. Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 3: Integration of Knowledge and Ideas

STANDARD CODE	STANDARD
LAFS.2.RL.3.7	Use information gained from the illustrations and words in a print or digital text to demonstrate understanding of its characters, setting, or plot.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.2.RL.3.9	Compare and contrast two or more versions of the same story (e.g., Cinderella stories) by different authors or from different cultures.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Cluster 4: Range of Reading and Level of Text Complexity	
STANDARD CODE	STANDARD
	By the end of the year, read and comprehend literature, including stories and poetry, in the grades 2–3 text complexity band proficiently, with scaffolding as needed at the high

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end of the range.
Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Strand: READING STANDARDS: FOUNDATIONAL SKILLS (K-5)

Cluster 3: Phonics and Word Recognition

STANDARD CODE	STANDARD
LAFS.2.RF.3.3	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.
	<u>Cognitive Complexity:</u> Level 1: Recall

Cluster 4: Fluency	
STANDARD CODE	STANDARD
LAFS.2.RF.4.4	 Read with sufficient accuracy and fluency to support comprehension. a. Read on-level text with purpose and understanding. b. Read on-level text orally with accuracy, appropriate rate, and expression on successive readings. c. Use context to confirm or self-correct word recognition and understanding, rereading as necessary.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Strand: READING STANDARDS FOR INFORMATIONAL TEXT

Cluster 1: Key Ideas and Details

STANDARD CODE	STANDARD
LAFS.2.RI.1.1	Ask and answer such questions as <i>who, what, where, when, why</i> , and <i>how</i> to demonstrate understanding of key details in a text.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.2.RI.1.2	Identify the main topic of a multiparagraph text as well as the focus of specific paragraphs within the text.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.2.RI.1.3	Describe the connection between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

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Cluster 2: Craft and Structure	
STANDARD CODE	STANDARD
LAFS.2.RI.2.4	Determine the meaning of words and phrases in a text relevant to a <i>grade 2 topic or subject area</i> .
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.2.RI.2.5	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.2.RI.2.6	Identify the main purpose of a text, including what the author wants to answer, explain, or describe.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 3: Integration of Knowledge and Ideas	
STANDARD CODE	STANDARD
LAFS.2.RI.3.7	Explain how specific images (e.g., a diagram showing how a machine works) contribute to and clarify a text.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.2.RI.3.8	Describe how an author uses reasons to support specific points in a text. <u>Cognitive Complexity:</u> Level 3: Strategic Thinking & Complex Reasoning
LAFS.2.RI.3.9	Compare and contrast the most important points presented by two texts on the same topic.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Cluster 4: Range of Reading and Level of Text Complexity	
STANDARD CODE	STANDARD
	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. <u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts

Strand: WRITING STANDARDS

Cluster 1: Text Types and Purposes	
STANDARD CODE	STANDARD
LAFS.2.W.1.1	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.
LAFS.2.W.1.2	Write informative/explanatory texts in which they introduce a topic, use facts and definitions to develop points, and provide a concluding statement or section. <u>Cognitive Complexity:</u> Level 3: Strategic Thinking & Complex Reasoning

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LAFS.2.W.1.3	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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Cluster 2: Production and Distribution of Writing

Cluster 3: Research to Build and Present Knowledge

STANDARD CODE	STANDARD
LAFS.2.W.2.5	With guidance and support from adults and peers, focus on a topic and strengthen writing as needed by revising and editing.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.2.W.2.6	With guidance and support from adults, use a variety of digital tools to produce and publish writing, including in collaboration with peers.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

STANDARD CODE	STANDARD
LAFS.2.W.3.7	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).
	Cognitive Complexity: Level 4: Extended Thinking & Complex Reasoning
LAFS.2.W.3.8	Recall information from experiences or gather information from provided sources to answer a question.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Strand: STANDARDS FOR SPEAKING AND LISTENING

Cluster 1: Comprehension and Collaboration

STANDARD CODE	STANDARD
LAFS.2.SL.1.1	Participate in collaborative conversations with diverse partners about grade 2 topics and texts with peers and adults in small and larger groups.
	 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.
	 Ask for clarification and further explanation as needed about the topics and texts under discussion.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.2.SL.1.2	Recount or describe key ideas or details from a text read aloud or information presented orally or through other media.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.2.SL.1.3	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.

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Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 2: Presentation of Knowledge and Ideas STANDARD CODE **STANDARD** LAFS.2.SL.2.4 Tell a story or recount an experience with appropriate facts and relevant, descriptive details, speaking audibly in coherent sentences. Cognitive Complexity: Level 2: Basic Application of Skills & Concepts LAFS.2.SL.2.5 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. Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning LAFS.2.SL.2.6 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 pages 26 and 27 for specific expectations.) Cognitive Complexity: Level 1: Recall

Strand: LANGUAGE STANDARDS

Cluster 1: Conventions of Standard English

STANDARD CODE	STANDARD
LAFS.2.L.1.1	 Demonstrate command of the conventions of standard English grammar and usage when writing or speaking. a. Demonstrate legible printing skills. b. Use collective nouns (e.g., group). c. Form and use frequently occurring irregular plural nouns (e.g., feet, children, teeth, mice, fish). d. Use reflexive pronouns (e.g., myself, ourselves). e. Form and use the past tense of frequently occurring irregular verbs (e.g., sat, hid, told). f. Use adjectives and adverbs, and choose between them depending on what is to be modified. g. Produce, expand, and rearrange complete simple and compound sentences (e.g., <i>The boy watched the movie; The little boy watched the movie; The action movie was watched by the little boy</i>).
LAFS.2.L.1.2	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts 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.

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Cognitive Complexity: Level 1: Recall

Cluster 2: Knowledge of Language	
STANDARD CODE	STANDARD
LAFS.2.L.2.3	Use knowledge of language and its conventions when writing, speaking, reading, or listening. a. Compare formal and informal uses of English.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 3: Vocabulary Acquisition and Use	
STANDARD CODE	STANDARD
LAFS.2.L.3.4	 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. <u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts
LAFS.2.L.3.5	 Demonstrate understanding of word relationships and nuances in word meanings. a. Identify real-life connections between words and their use (e.g., <i>describe foods that are spicy or juicy</i>). b. Distinguish shades of meaning among closely related verbs (e.g., <i>toss, throw, hurl</i>) and closely related adjectives (e.g., <i>thin, slender, skinny, scrawny</i>). <u>Cognitive Complexity:</u> Level 3: Strategic Thinking & Complex Reasoning
LAFS.2.L.3.6	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., <i>When other kids are happy that makes me happy</i>). <u>Cognitive Complexity:</u> Level 1: Recall

GRADE: 3

Strand: READING STANDARDS FOR LITERATURE

Cluster 1: Key Ideas and Details

STANDARD CODE	STANDARD
STANDARD CODE	••••••
LAFS.3.RL.1.1	Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.3.RL.1.2	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.3.RL.1.3	Describe characters in a story (e.g., their traits, motivations, or feelings) and explain how their actions contribute to the sequence of events.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 2: Craft and Structure

STANDARD CODE	STANDARD
LAFS.3.RL.2.4	Determine the meaning of words and phrases as they are used in a text, distinguishing literal from nonliteral language.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.3.RL.2.5	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.3.RL.2.6	Distinguish their own point of view from that of the narrator or those of the characters.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Cluster 3: Integration of Knowledge and Ideas

STANDARD CODE	STANDARD
LAFS.3.RL.3.7	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). <u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts
LAFS.3.RL.3.9	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). <u>Cognitive Complexity:</u> Level 3: Strategic Thinking & Complex Reasoning

Cluster 4: Range of Reading and Level of Text Complexity	
STANDARD CODE	STANDARD
	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.

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Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Strand: READING STANDARDS: FOUNDATIONAL SKILLS (K-5)

Cluster 3: Phonics and Word Recognition

STANDARD CODE	STANDARD
LAFS.3.RF.3.3	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 multisyllable words. d. Read grade-appropriate irregularly spelled words.
	Cognitive Complexity: Level 1: Recall

Cluster 4: Fluency	
STANDARD CODE	STANDARD
LAFS.3.RF.4.4	Read with sufficient accuracy and fluency to support comprehension.
	a. Read on-level text with purpose and understanding.
	 Read on-level prose and poetry orally with accuracy, appropriate rate, and expression on successive readings.
	 Use context to confirm or self-correct word recognition and understanding, rereading as necessary.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Strand: READING STANDARDS FOR INFORMATIONAL TEXT

Cluster 1: Key Ideas and Details

STANDARD CODE	STANDARD
LAFS.3.RI.1.1	Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.3.RI.1.2	Determine the main idea of a text; recount the key details and explain how they support the main idea.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.3.RI.1.3	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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

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Cluster 2: Craft and Structure	
STANDARD CODE	STANDARD
LAFS.3.RI.2.4	Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 3 topic or subject area.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.3.RI.2.5	Use text features and search tools (e.g., key words, sidebars, hyperlinks) to locate information relevant to a given topic efficiently.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.3.RI.2.6	Distinguish their own point of view from that of the author of a text.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 3: Integration of Knowledge and Ideas

STANDARD CODE	STANDARD
LAFS.3.RI.3.7	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).
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.3.RI.3.8	Describe the logical connection between particular sentences and paragraphs in a text (e.g., comparison, cause/effect, first/second/third in a sequence).
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.3.RI.3.9	Compare and contrast the most important points and key details presented in two texts on the same topic.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 4: Range of Reading and Level of Text Complexity	
STANDARD CODE	STANDARD
LAFS.3.RI.4.10	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Strand: WRITING STANDARDS

Cluster 1: Text Types and Purposes

STANDARD CODE	STANDARD
LAFS.3.W.1.1	Write opinion pieces on 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.

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	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.3.W.1.2	 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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.3.W.1.3	 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.
	<u>Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning</u>

Cluster 2: Production and Distribution of Writing	
STANDARD CODE	STANDARD
LAFS.3.W.2.4	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.)
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.3.W.2.5	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 pages 28 and 29.)
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.3.W.2.6	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 3: Research to Build and Present Knowledge

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STANDARD CODE	STANDARD
LAFS.3.W.3.7	Conduct short research projects that build knowledge about a topic.
	Cognitive Complexity: Level 4: Extended Thinking & Complex Reasoning
LAFS.3.W.3.8	Recall information from experiences or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

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Cluster 4: Range of Writing	
STANDARD CODE	STANDARD
LAFS.3.W.4.10	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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

STANDARD CODE	STANDARD
LAFS.3.SL.1.1	Engage effectively in a range of collaborative discussions (one-on-one, in groups, ar teacher-led) with diverse partners on grade 3 <i>topics and texts</i> , building on others' ide 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 to to explore ideas under discussion. b. Follow agreed-upon rules for discussions (e.g., gaining the floor in respectf ways, listening to others with care, speaking one at a time about the topics texts under discussion). c. Ask questions to check understanding of information presented, stay on top and link their comments to the remarks of others. d. Explain their own ideas and understanding in light of the discussion.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.3.SL.1.2	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 2: Presentation of Knowledge and Ideas

STANDARD CODE	STANDARD
LAFS.3.SL.2.4	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.3.SL.2.5	Demonstrate fluid reading at an understandable pace, adding visual displays and engaging audio recordings when appropriate to emphasize or enhance certain facts or details.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.3.SL.2.6	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 pages 28

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and 29 for specific expectations.)
Cognitive Complexity: Level 1: Recall

Strand: LANGUAGE STANDARDS	
Cluster 1: Conventions of Standard English	
STANDARD CODE	STANDARD
LAFS.3.L.1.1	 Demonstrate command of the conventions of standard English grammar and usage when writing or speaking. a. Demonstrate beginning cursive writing skills. b. Explain the function of nouns, pronouns, verbs, adjectives, and adverbs in general and their functions in particular sentences. c. Form and use regular and irregular plural nouns. d. Use abstract nouns (e.g., childhood, friendship, courage). e. Form and use regular and irregular verbs. f. Form and use the simple (e.g., I walked; I walk; I will walk) verb tenses. g. Ensure subject-verb and pronoun-antecedent agreement. h. Form and use comparative and superlative adjectives and adverbs, and choose between them depending on what is to be modified. i. Use coordinating and subordinating conjunctions. j. Produce simple, compound, and complex sentences.
LAFS.3.L.1.2	 Cognitive Complexity: Level 2: Basic Application of Skills & Concepts 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., <i>sitting, smiled, cries, happiness</i>). f. Use spelling patterns and generalizations (e.g., <i>word families, position-based spellings, syllable patterns, ending rules, meaningful word parts</i>) in writing words. g. Consult reference materials, including beginning dictionaries, as needed to check and correct spellings.
	Cognitive Complexity: Level 1: Recall

of Language
STANDARD
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

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written standard English.
Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Cluster 3: Vocabulary Acquisition and Use	
STANDARD CODE	STANDARD
LAFS.3.L.3.4	 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., <i>agreeable/disagreeable, comfortable/uncomfortable, care/careless, heat/preheat</i>). c. Use a known root word as a clue to the meaning of an unknown word with the same root (e.g., <i>company, companion</i>). d. Use glossaries or beginning dictionaries, both print and digital, to determine or clarify the precise meaning of key words and phrases.
LAFS.3.L.3.5	 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., <i>take steps</i>). b. Identify real-life connections between words and their use (e.g., <i>describe people who are friendly or helpful</i>). c. Distinguish shades of meaning among related words that describe states of mind or degrees of certainty (e.g., <i>knew, believed, suspected, heard, wondered</i>). <i>Cognitive Complexity:</i> Level 3: Strategic Thinking & Complex Reasoning
LAFS.3.L.3.6	Acquire and use accurately conversational, general academic, and domain specific words and phrases as found in grade appropriate texts, including those that signal spatial and temporal relationships (e.g., After dinner that night we went looking for them).

GRADE: 4

Strand: READING STANDARDS FOR LITERATURE

Cluster 1: Key Ideas and Details

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STANDARD CODE	STANDARD
LAFS.4.RL.1.1	Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.4.RL.1.2	Determine a theme of a story, drama, or poem from details in the text; summarize the text.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.4.RL.1.3	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).
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 2: Craft and Structure	
STANDARD CODE	STANDARD
LAFS.4.RL.2.4	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).
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.4.RL.2.5	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, settings, descriptions, dialogue, stage directions) when writing or speaking about a text.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.4.RL.2.6	Compare and contrast the point of view from which different stories are narrated, including the difference between first- and third-person narrations.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Cluster 3: Integration of Knowledge and Ideas

STANDARD CODE	STANDARD
LAFS.4.RL.3.7	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.4.RL.3.9	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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Cluster 4: Range of Reading and Level of Text Complexity	
STANDARD CODE	STANDARD
LAFS.4.RL.4.10	By the end of the year, read and comprehend literature, including stories, dramas, and

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poetry, in the grades 4–5 text complexity band proficiently, with scaffolding as needed at the high end of the range.
Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Strand: READING STANDARDS: FOUNDATIONAL SKILLS (K-5)

Cluster 3: Phonics and	Word Recognition
STANDARD CODE	STANDARD
LAFS.4.RF.3.3	 Know and apply grade-level phonics and word analysis skills in decoding words. a. Use combined knowledge of all letter-sound correspondences, syllabication patterns, and morphology (e.g., roots and affixes) to read accurately unfamiliar multi-syllabic words in context and out of context.
	Cognitive Complexity: Level 1: Recall

Cluster 4: Fluency	
STANDARD CODE	STANDARD
LAFS.4.RF.4.4	Read with sufficient accuracy and fluency to support comprehension.
	 a. Read on-level text with purpose and understanding. b. Read on-level prose and poetry orally with accuracy, appropriate rate, and expression on successive readings. c. Use context to confirm or self-correct word recognition and understanding, rereading as necessary.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Strand: READING STANDARDS FOR INFORMATIONAL TEXT

Cluster 1: Key Ideas and Details

STANDARD CODE	STANDARD
LAFS.4.RI.1.1	Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.4.RI.1.2	Determine the main idea of a text and explain how it is supported by key details; summarize the text.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.4.RI.1.3	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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Cluster 2: Craft and Structure

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STANDARD CODE	STANDARD
LAFS.4.RI.2.4	Determine the meaning of general academic and domain-specific words or phrases in a text relevant to a <i>grade 4 topic or subject area</i> .
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.4.RI.2.5	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. <u>Cognitive Complexity:</u> Level 3: Strategic Thinking & Complex Reasoning
LAFS.4.RI.2.6	Compare and contrast a firsthand and secondhand account of the same event or topic; describe the differences in focus and the information provided.

Cluster 3: Integration of Knowledge and Ideas

STANDARD CODE	STANDARD
STANDARD CODE	STANDARD
LAFS.4.RI.3.7	Interpret information presented visually, orally, 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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.4.RI.3.8	Explain how an author uses reasons and evidence to support particular points in a text.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.4.RI.3.9	Integrate information from two texts on the same topic in order to write or speak about the subject knowledgeably.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Cluster 4: Range of Reading and Level of Text Complexity

STANDARD CODE	STANDARD
	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 needed at the high end of the range.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Strand: WRITING STANDARDS

Cluster 1: Text Types and Purposes

STANDARD CODE	STANDARD
LAFS.4.W.1.1	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., <i>for instance, in order to, in addition</i>).
	d. Provide a concluding statement or section related to the opinion presented.

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	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.4.W.1.2	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., <i>another, for example, also, because</i>). 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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.4.W.1.3	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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Cluster 2: Production and Distribution of Writing	
STANDARD CODE	STANDARD
LAFS.4.W.2.4	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.)
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.4.W.2.5	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 4 on pages 28 and 29.)
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.4.W.2.6	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 3: Research to Build and Present Knowledge

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STANDARD CODE	STANDARD
LAFS.4.W.3.7	Conduct short research projects that build knowledge through investigation of different aspects of a topic. <u>Cognitive Complexity:</u> Level 4: Extended Thinking &Complex Reasoning
LAFS.4.W.3.8	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. <u>Cognitive Complexity:</u> Level 3: Strategic Thinking & Complex Reasoning
LAFS.4.W.3.9	 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").

Cluster 4: Range of Writing	
STANDARD CODE	STANDARD
LAFS.4.W.4.10	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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Strand: STANDARDS FOR SPEAKING AND LISTENING

Cluster 1: Comprehension and Collaboration

STANDARD CODE	STANDARD
LAFS.4.SL.1.1	Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade <i>4 topics and texts</i> , 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 undertant in the initial sectors.
	understanding in light of the discussion. <u>Cognitive Complexity:</u> Level 3: Strategic Thinking & Complex Reasoning
LAFS.4.SL.1.2	Paraphrase portions of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally. <u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts

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LAFS.4.SL.1.3	Identify the reasons and evidence a speaker provides to support particular points.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Cluster 2: Presentation of Knowledge and Ideas

STANDARD CODE	STANDARD
LAFS.4.SL.2.4	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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.4.SL.2.5	Add audio recordings and visual displays to presentations when appropriate to enhance the development of main ideas or themes.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.4.SL.2.6	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 on pages 28 and 29 for specific expectations.)
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Strand: LANGUAGE STANDARDS

Cluster 1: Conventions of Standard English

STANDARD CODE	STANDARD
LAFS.4.L.1.1	 Demonstrate command of the conventions of standard English grammar and usage when writing or speaking. a. Demonstrate legible cursive writing skills. b. Use relative pronouns (<i>who, whose, whom, which, that</i>) and relative adverbs (<i>where, when, why</i>). c. Form and use the progressive (e.g., <i>I was walking; I am walking; I will be walking</i>) verb tenses. d. Use modal auxiliaries (e.g., <i>can, may, must</i>) to convey various conditions. e. Order adjectives within sentences according to conventional patterns (e.g., <i>a small red bag rather than a red small bag</i>). f. Form and use prepositional phrases. g. Produce complete sentences, recognizing and correcting inappropriate fragments and run-ons. h. Correctly use frequently confused words (e.g., <i>to, too, two; there, their</i>).
LAFS.4.L.1.2	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.

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d.	Spell grade-appropriate words correctly, consulting references as needed.
Cogniti	<u>ve Complexity:</u> Level 1: Recall

Cluster 2: Knowledge of Language STANDARD CODE STANDARD LAFS.4.L.2.3 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). *Cognitive Complexity:* Level 3: Strategic Thinking & Complex Reasoning

Cluster 3: Vocabulary Acquisition and Use	
STANDARD CODE	STANDARD
LAFS.4.L.3.4	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.4.L.3.5	Demonstrate understanding of 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).
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.4.L.3.6	Acquire and use accurately general academic and domain-specific words and phrases as found in grade level appropriate texts, including those that signal precise actions, emotions, or states of being (e.g., <i>wildlife</i> , <i>conservation</i> , and <i>endangered</i> when discussing animal preservation).

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GRADE: 5

Strand: READING STANDARDS FOR LITERATURE

Cluster 1: Key Ideas and Details

STANDARD CODE	STANDARD
LAFS.5.RL.1.1	Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.5.RL.1.2	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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.5.RL.1.3	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).
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 2: Craft and Structure	
STANDARD CODE	STANDARD
LAFS.5.RL.2.4	Determine the meaning of words and phrases as they are used in a text, including figurative language such as metaphors and similes.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.5.RL.2.5	Explain how a series of chapters, scenes, or stanzas fits together to provide the overall structure of a particular story, drama, or poem.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.5.RL.2.6	Describe how a narrator's or speaker's point of view influences how events are described.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 3: Integration of Knowledge and Ideas	
STANDARD CODE	STANDARD
LAFS.5.RL.3.7	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). <u>Cognitive Complexity:</u> Level 3: Strategic Thinking & Complex Reasoning
LAFS.5.RL.3.9	Compare and contrast stories in the same genre (e.g., mysteries and adventure stories) on their approaches to similar themes and topics. <u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts

Cluster 4: Range of Reading and Level of Text Complexity

STANDARD CODE

STANDARD

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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.
Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Strand: READING STANDARDS: FOUNDATIONAL SKILLS (K-5)

Cluster 3: Phonics and Word Recognition

STANDARD CODE	STANDARD
LAFS.5.RF.3.3	Know and apply grade-level phonics and word analysis skills in decoding words.
	a. 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.
	Cognitive Complexity: Level 1: Recall

Cluster 4: Fluency	
STANDARD CODE	STANDARD
LAFS.5.RF.4.4	 Read with sufficient accuracy and fluency to support comprehension. a. Read on-level text with purpose and understanding. b. Read on-level prose and poetry orally with accuracy, appropriate rate, and expression on successive readings. c. Use context to confirm or self-correct word recognition and understanding, rereading as necessary.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Strand: READING ST	Strand: READING STANDARDS FOR INFORMATIONAL TEXT	
Cluster 1: Key Ideas and Details		
STANDARD CODE	STANDARD	
LAFS.5.RI.1.1	Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text.	
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts	
LAFS.5.RI.1.2	Determine two or more main ideas of a text and explain how they are supported by key details; summarize the text.	
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts	
LAFS.5.RI.1.3	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.	
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning	

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Cluster 2: Craft and Structure	
STANDARD CODE	STANDARD
LAFS.5.RI.2.4	Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a <i>grade 5 topic or subject area</i> .
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.5.RI.2.5	Compare and contrast the overall structure (e.g., chronology, comparison, cause/effect, problem/solution) of events, ideas, concepts, or information in two or more texts.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.5.RI.2.6	Analyze multiple accounts of the same event or topic, noting important similarities and differences in the point of view they represent.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Cluster 3: Integration of Knowledge and Ideas	
STANDARD CODE	STANDARD
LAFS.5.RI.3.7	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.5.RI.3.8	Explain how an author uses reasons and evidence to support particular points in a text, identifying which reasons and evidence support which point(s).
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.5.RI.3.9	Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 4: Range of Reading and Level of Text Complexity	
STANDARD CODE	STANDARD
LAFS.5.RI.4.10	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.

Strand: WRITING STANDARDS

 STANDARD CODE
 STANDARD

 LAFS.5.W.1.1
 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 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.

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	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.5.W.1.2	 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.
LAFS.5.W.1.3	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts 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 parenting to prove the provide technique of the provide technique.
	 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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Cluster 2: Production and Distribution of Writing	
STANDARD CODE	STANDARD
LAFS.5.W.2.4	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.)
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.5.W.2.5	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 1–3 up to and including grade 5 on pages 28 and 29.)
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.5.W.2.6	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

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in a single sitting.
Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 3: Research to Build and Present Knowledge	
STANDARD CODE	STANDARD
LAFS.5.W.3.7	Conduct short research projects that use several sources to build knowledge through investigation of different aspects of a topic.
LAFS.5.W.3.8	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. <u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts
LAFS.5.W.3.9	 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]"). Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Cluster 4: Range of Writing	
STANDARD CODE	STANDARD
	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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Strand: STANDARDS FOR SPEAKING AND LISTENING

Cluster 1: Comprehension and Collaboration

STANDARD CODE	STANDARD
LAFS.5.SL.1.1	Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on <i>grade 5 topics and texts</i> , building on others' ideas and expressing their own clearly.
	 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

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	and knowledge gained from the discussions.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.5.SL.1.2	Summarize a written text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally. <u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts
LAFS.5.SL.1.3	Summarize the points a speaker makes and explain how each claim is supported by reasons and evidence. <u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts

Cluster 2: Presentation of Knowledge and Ideas

STANDARD CODE	STANDARD
LAFS.5.SL.2.4	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.5.SL.2.5	Include multimedia components (e.g., graphics, sound) and visual displays in presentations when appropriate to enhance the development of main ideas or themes.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.5.SL.2.6	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 pages 28 and 29 for specific expectations.)
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Strand: LANGUAGE STANDARDS

Cluster 1: Conventions of Standard English

STANDARD CODE	STANDARD
LAFS.5.L.1.1	Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
	 a. Demonstrate fluent and legible cursive writing skills. b. Explain the function of conjunctions, prepositions, and interjections in
	 Explain the function of conjunctions, prepositions, and interjections in general and their function in particular sentences.
	c. Form and use the perfect (e.g., I had walked; I have walked; I will have walked) verb tenses.
	 Use verb tense to convey various times, sequences, states, and conditions.
	 Recognize and correct inappropriate shifts in verb tense. Use correlative conjunctions (e.g., either/or, neither/nor).
	f. Use correlative conjunctions (e.g., <i>either/or, neither/nor</i>).
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.5.L.1.2	Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.
	a. Use punctuation to separate items in a series.
	 Use a comma to separate an introductory element from the rest of the sentence.

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c. d. e.	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., <i>It's true, isn't it?</i>), and to indicate direct address (e.g., <i>Is that you, Steve?</i>). Use underlining, quotation marks, or italics to indicate titles of works. Spell grade-appropriate words correctly, consulting references as needed.
Cognitiv	<i>ve Complexity:</i> Level 1: Recall

Cluster 2: Knowledge c	of Language
STANDARD CODE	STANDARD
LAFS.5.L.2.3	 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., <i>dialects, registers</i>) used in
	stories, dramas, or poems. <u>Cognitive Complexity:</u> Level 3: Strategic Thinking & Complex Reasoning

Cluster 3: Vocabulary Acquisition and Use	
STANDARD CODE	STANDARD
LAFS.5.L.3.4	 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., <i>photograph, photosynthesis</i>). 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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.5.L.3.5	 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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.5.L.3.6	Acquire and use accurately general academic and domain-specific words and phrases as found in grade level appropriate texts, including those that signal contrast, addition, and other logical relationships (e.g., <i>however, although,</i>

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nevertheless, similarly, moreover, in addition).
<u>Cognitive Complexity:</u> Level 1: Recall

GRADE: 6

Strand: READING STANDARDS FOR LITERATURE

Cluster 1: Key Ideas and Details

STANDARD CODE	STANDARD
LAFS.6.RL.1.1	Cite textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.6.RL.1.2	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.6.RL.1.3	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 2: Craft and Structure	
STANDARD CODE	STANDARD
LAFS.6.RL.2.4	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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.6.RL.2.5	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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.6.RL.2.6	Explain how an author develops the point of view of the narrator or speaker in a text.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 3: Integration of Knowledge and Ideas	
STANDARD CODE	STANDARD
LAFS.6.RL.3.7	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. <u>Cognitive Complexity:</u> Level 3: Strategic Thinking & Complex Reasoning
LAFS.6.RL.3.9	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. <u>Cognitive Complexity:</u> Level 3: Strategic Thinking & Complex Reasoning

Cluster 4: Range of Reading and Level of Text Complexity

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STANDARD CODE	STANDARD
LAFS.6.RL.4.10	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Strand: READING STANDARDS FOR INFORMATIONAL TEXT

Cluster 1: Key Ideas and Details

STANDARD CODE	STANDARD
LAFS.6.RI.1.1	Cite textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.6.RI.1.2	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. <i>Cognitive Complexity:</i> Level 2: Basic Application of Skills & Concepts
LAFS.6.RI.1.3	Analyze in detail how a key individual, event, or idea is introduced, illustrated, and elaborated in a text (e.g., through examples or anecdotes).

Cluster 2: Craft and Structure

STANDARD CODE	STANDARD
LAFS.6.RI.2.4	Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.6.RI.2.5	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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.6.RI.2.6	Determine an author's point of view or purpose in a text and explain how it is conveyed in the text.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Cluster 3: Integration of Knowledge and Ideas

STANDARD CODE	STANDARD
LAFS.6.RI.3.7	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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.6.RI.3.8	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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.6.RI.3.9	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).
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

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Cluster 4: Range of Reading and Level of Text Complexity	
STANDARD CODE	STANDARD
	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. <u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts

Strand: WRITING STANDARDS

Cluster 1: Text Types and Purposes

STANDARD CODE	STANDARD
LAFS.6.W.1.1	Write arguments to support claims with clear reasons and relevant evidence.
	 a. Introduce claim(s) and organize the reasons and relevant evidence. 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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.6.W.1.2	 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.
LAFS.6.W.1.3	 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

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	 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.
C	ognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Cluster 2: Production and Distribution of Writing	
STANDARD CODE	STANDARD
LAFS.6.W.2.4	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.)
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.6.W.2.5	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 1–3 up to and including grade 6 on page 52.)
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.6.W.2.6	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

STANDARD CODE	STANDARD
	Conduct short research projects to answer a question, drawing on several sources and refocusing the inquiry when appropriate.
	Cognitive Complexity: Level 4: Extended Thinking &Complex Reasoning
	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. <u>Cognitive Complexity:</u> Level 3: Strategic Thinking & Complex Reasoning
	Draw evidence from literary or informational texts to support analysis, reflection, and
	 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"). Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Cluster 4: Range of Writing

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STANDARD CODE	STANDARD
LAFS.6.W.4.10	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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Strand: STANDARDS FOR SPEAKING AND LISTENING

Cluster 1: Comprehension and Collaboration

STANDARD CODE	STANDARD
LAFS.6.SL.1.1	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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.6.SL.1.2	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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.6.SL.1.3	Delineate a speaker's argument and specific claims, distinguishing claims that are supported by reasons and evidence from claims that are not.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Cluster 2: Presentation of Knowledge and Ideas	
STANDARD CODE	STANDARD
LAFS.6.SL.2.4	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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.6.SL.2.5	Include multimedia components (e.g., graphics, images, music, sound) and visual displays in presentations to clarify information.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.6.SL.2.6	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 on page 52 for specific expectations.)
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

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Strand: LANGUAGE STANDARDS

Cluster 1: Conventions of Standard English

STANDARD CODE	STANDARD
LAFS.6.L.1.1	 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., <i>myself, ourselves</i>). 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.
LAFS.6.L.1.2	 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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 2: Knowledge	of Language
STANDARD CODE	STANDARD
LAFS.6.L.2.3	Use knowledge of language and its conventions when writing, speaking, reading, or listening. a. Vary sentence patterns for meaning, reader/listener interest, and style b. Maintain consistency in style and tone.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Cluster 3: Vocabulary Acquisition and Use

STANDARD CODE	STANDARD
LAFS.6.L.3.4	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.
	 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).

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	 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).
LAFS.6.L.3.5	 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., <i>stingy, scrimping, economical, unwasteful, thrifty</i>).
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.6.L.3.6	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.
	Cognitive Complexity: Level 1: Recall

GRADE: 7

Strand: READING STANDARDS FOR LITERATURE

Cluster 1: Key Ideas and Details

STANDARD CODE	STANDARD
LAFS.7.RL.1.1	Cite several pieces of textual evidence to support analysis of what the text says
	explicitly as well as inferences drawn from the text.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.7.RL.1.2	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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.7.RL.1.3	Analyze how particular elements of a story or drama interact (e.g., how setting shapes
	the characters or plot).
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Cluster 2: Craft and Structure	
STANDARD CODE	STANDARD
LAFS.7.RL.2.4	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) on a specific verse or stanza of a poem or section of a story or drama.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.7.RL.2.5	Analyze how a drama's or poem's form or structure (e.g., soliloquy, sonnet) contributes to its meaning.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.7.RL.2.6	Analyze how an author develops and contrasts the points of view of different characters or narrators in a text.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 3: Integration of Knowledge and Ideas	
STANDARD CODE	STANDARD
LAFS.7.RL.3.7	Compare and contrast a written 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).
LAFS.7.RL.3.9	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. <u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts

Cluster 4: Range of Reading and Level of Text Complexity

STANDARD CODE

STANDARD

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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.
Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Strand: READING STANDARDS FOR INFORMATIONAL TEXT

Cluster 1: Key Ideas and Details

STANDARD CODE	STANDARD
LAFS.7.RI.1.1	Cite several pieces of textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.7.RI.1.2	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.7.RI.1.3	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).
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 2: Craft and Structure

STANDARD CODE	STANDARD
LAFS.7.RI.2.4	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.7.RI.2.5	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.7.RI.2.6	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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Cluster 3: Integration of Knowledge and Ideas	
STANDARD CODE	STANDARD
LAFS.7.RI.3.7	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).
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.7.RI.3.8	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.7.RI.3.9	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.

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Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 4: Range of Reading and Level of Text Complexity	
STANDARD CODE	STANDARD
LAFS.7.RI.4.10	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Strand: WRITING STANDARDS		
Cluster 1: Text Types	uster 1: Text Types and Purposes	
STANDARD CODE	STANDARD	
LAFS.7.W.1.1	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.	
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning	
LAFS.7.W.1.2	Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.	
	 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. 	
	Cognitive Complexity: Level 4: Extended Thinking & Complex Reasoning	
LAFS.7.W.1.3	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.	

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 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.
Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Cluster 2: Production and Distribution of Writing	
STANDARD CODE	STANDARD
LAFS.7.W.2.4	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.)
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.7.W.2.5	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 52.)
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.7.W.2.6	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 3: Research to Build and Present Knowledge	
STANDARD CODE	STANDARD
LAFS.7.W.3.7	Conduct short research projects to answer a question, drawing on several sources and generating additional related, focused questions for further research and investigation.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.7.W.3.8	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.7.W.3.9	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

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claims").
Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Cluster 4: Range of Writing	
STANDARD CODE	STANDARD
LAFS.7.W.4.10	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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Strand: STANDARDS FOR SPEAKING AND LISTENING

Cluster 1: Comprehension and Collaboration

STANDARD CODE	STANDARD
LAFS.7.SL.1.1	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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.7.SL.1.2	Analyze the main ideas and supporting details presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how the ideas clarify a topic, text, or issue under study.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.7.SL.1.3	Delineate a speaker's argument and specific claims, evaluating the soundness of the reasoning and the relevance and sufficiency of the evidence.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Cluster 2: Presentation	n of Knowledge and Ideas
STANDARD CODE	STANDARD
LAFS.7.SL.2.4	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

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LAFS.7.SL.2.5	Include multimedia components and visual displays in presentations to clarify claims and findings and emphasize salient points.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.7.SL.2.6	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 52 for specific expectations.) <u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts

Strand: LANGUAGE STANDARDS

Cluster 1: Conventions	Cluster 1: Conventions of Standard English	
STANDARD CODE	STANDARD	
LAFS.7.L.1.1	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 and dangling modifiers. 	
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts	
LAFS.7.L.1.2	 Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing. a. Use a comma to separate coordinate adjectives (e.g., <i>It was a fascinating, enjoyable movie but not He wore an old[,] green shirt).</i> b. Spell correctly. 	
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts	

Cluster 2: Knowledge o	f Language
STANDARD CODE	STANDARD
LAFS.7.L.2.3	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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Cluster 3: Vocabulary Acquisition and Use

STANDARD CODE

STANDARD

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LAFS.7.L.3.4	 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., <i>belligerent, bellicose, rebel</i>). 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).
LAFS.7.L.3.5	<u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts 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., <i>refined, respectful, polite, diplomatic, condescending</i>).
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.7.L.3.6	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.
	Cognitive Complexity: Level 1: Recall

GRADE: 8

Strand: READING STANDARDS FOR LITERATURE

Cluster 1: Key Ideas and Details

STANDARD CODE	STANDARD
LAFS.8.RL.1.1	Cite the textual evidence that most strongly supports an analysis of what the text says explicitly as well as inferences drawn from the text.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.8.RL.1.2	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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.8.RL.1.3	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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Cluster 2: Craft and Structure

STANDARD CODE	STANDARD
LAFS.8.RL.2.4	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 and tone, including analogies or allusions to other texts.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.8.RL.2.5	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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.8.RL.2.6	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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Cluster 3: Integration of Knowledge and Ideas

STANDARD
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.
Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
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.

Cluster 4: Range of Reading and Level of Text Complexity

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STANDARD CODE	STANDARD
	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Strand: READING STANDARDS FOR INFORMATIONAL TEXT

Cluster 1: Key Ideas and Details

STANDARD CODE	STANDARD
LAFS.8.RI.1.1	Cite the textual evidence that most strongly supports an analysis of what the text says explicitly as well as inferences drawn from the text.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.8.RI.1.2	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.8.RI.1.3	Analyze how a text makes connections among and distinctions between individuals, ideas, or events (e.g., through comparisons, analogies, or categories).
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 2: Craft and Structure	
STANDARD CODE	STANDARD
LAFS.8.RI.2.4	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. <u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts
LAFS.8.RI.2.5	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.8.RI.2.6	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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Cluster 3: Integration of Knowledge and Ideas

STANDARD CODE	STANDARD
LAFS.8.RI.3.7	Evaluate the advantages and disadvantages of using different mediums (e.g., print or digital text, video, multimedia) to present a particular topic or idea.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.8.RI.3.8	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.8.RI.3.9	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.

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Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 4: Range of Reading and Level of Text Complexity	
STANDARD CODE	STANDARD
LAFS.8.RI.4.10	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.

Strand: WRITING STANDARDS		
Cluster 1: Text Types	Cluster 1: Text Types and Purposes	
STANDARD CODE	STANDARD	
LAFS.8.W.1.1	 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. 	
LAFS.8.W.1.2	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning 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 	
	 e. Establish and maintain a formal style. f. Provide a concluding statement or section that follows from and supports the information or explanation presented. 	
	Cognitive Complexity: Level 4: Extended Thinking & Complex Reasoning	
LAFS.8.W.1.3	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	
	a. Engage and othern 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.	

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b. c. d.	Use narrative techniques, such as dialogue, pacing, description, and reflection, to develop experiences, events, and/or characters. 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. Use precise words and phrases, relevant descriptive details, and sensory
e.	Inguage to capture the action and convey experiences and events. Provide a conclusion that follows from and reflects on the narrated experiences or events.
Cognit	ive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Cluster 2: Production and Distribution of Writing

STANDARD CODE	STANDARD
LAFS.8.W.2.4	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.)
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.8.W.2.5	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 52.)
LAFS.8.W.2.6	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.

Cluster 3: Research to Build and Present Knowledge	
STANDARD CODE	STANDARD
LAFS.8.W.3.7	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.
	Cognitive Complexity: Level 4: Extended Thinking & Complex Reasoning
LAFS.8.W.3.8	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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.8.W.3.9	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").
	 Apply grade 8 Reading standards to literary nonfiction (e.g., "Delineate and evaluate the argument and specific claims in a text, assessing whether the

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reasoning is sound and the evidence is relevant and sufficient; recognize when irrelevant evidence is introduced").
Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Cluster 4: Range of Writing	
STANDARD CODE	STANDARD
LAFS.8.W.4.10	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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Strand: STANDARDS FOR SPEAKING AND LISTENING		
Cluster 1: Comprehens	Cluster 1: Comprehension and Collaboration	
STANDARD CODE	STANDARD	
LAFS.8.SL.1.1	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. 	
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning	
LAFS.8.SL.1.2	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.	
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning	
LAFS.8.SL.1.3	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.	
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning	

Cluster 2: Presentation of Knowledge and Ideas	
STANDARD CODE	STANDARD
	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.

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	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.8.SL.2.5	Integrate multimedia and visual displays into presentations to clarify information, strengthen claims and evidence, and add interest.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.8.SL.2.6	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 52 for specific expectations.)
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Strand: LANGUAGE STANDARDS

Cluster 1: Conventions of Standard English

STANDARD CODE	STANDARD
LAFS.8.L.1.1	Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
	 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.
	 Form and use verbs in the indicative, imperative, interrogative, conditional, and subjunctive mood.
	d. Recognize and correct inappropriate shifts in verb voice and mood.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.8.L.1.2	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 2: Knowledge o	f Language
STANDARD CODE	STANDARD
LAFS.8.L.2.3	 Use knowledge of language and its conventions when writing, speaking, reading, or listening. a. 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).
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

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Cluster 3: Vocabulary Acquisition and Use	
STANDARD CODE	STANDARD
LAFS.8.L.3.4	Determine or clarify the meaning of unknown and multiple-meaning words or phrases
LAFS.0.L.3.4	based on grade 8 reading and content, choosing flexibly from a range of strategies.
	 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).
LAFS.8.L.3.5	<u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts Demonstrate understanding of figurative language, word relationships, and nuances in
	word meanings.
	a. Interpret figures of speech (e.g. verbal irony, puns) 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., <i>bullheaded, willful, firm, persistent, resolute</i>).
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.8.L.3.6	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.
	Cognitive Complexity: Level 1: Recall

GRADE: 910

Strand: READING STANDARDS FOR LITERATURE

Cluster 1: Key Ideas and Details

STANDARD CODE	STANDARD
LAFS.910.RL.1.1	Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.910.RL.1.2	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. <u>Cognitive Complexity:</u> Level 3: Strategic Thinking & Complex Reasoning
LAFS.910.RL.1.3	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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Cluster 2: Craft and Structure	
STANDARD CODE	STANDARD
LAFS.910.RL.2.4	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).
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.910.RL.2.5	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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.910.RL.2.6	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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Cluster 3: Integration of Knowledge and Ideas

STANDARD CODE	STANDARD
LAFS.910.RL.3.7	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).
LAFS.910.RL.3.9	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). <u>Cognitive Complexity:</u> Level 3: Strategic Thinking & Complex Reasoning

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Cluster 4: Range of Reading and Level of Text Complexity	
STANDARD CODE	STANDARD
LAFS.910.RL.4.10	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Strand: READING STANDARDS FOR INFORMATIONAL TEXT

Cluster 1: Key Ideas and Details

STANDARD CODE	STANDARD
STANDARD CODE	STANDARD
LAFS.910.RI.1.1	Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.910.RI.1.2	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.910.RI.1.3	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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Cluster 2: Craft and Structure

STANDARD CODE	STANDARD
LAFS.910.RI.2.4	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).
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.910.RI.2.5	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).
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.910.RI.2.6	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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Cluster 3: Integration of Knowledge and Ideas

STANDARD CODE

STANDARD

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LAFS.910.RI.3.7	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. <i>Cognitive Complexity:</i> Level 2: Basic Application of Skills & Concepts
LAFS.910.RI.3.8	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. <i>Cognitive Complexity:</i> Level 3: Strategic Thinking & Complex Reasoning
LAFS.910.RI.3.9	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. <u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts

luster 4: Range of Reading and Level of Text Complexity	
STANDARD CODE	STANDARD
LAFS.910.RI.4.10	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

uster 1: Text Types and Purposes	
STANDARD CODE	STANDARD
LAFS.910.W.1.1	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 opposir claims, and create an organization that establishes clear relationships amor 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 anticipate the audience's knowledge level and concerns. c. Use words, phrases, and clauses to link the major sections of the text, creat cohesion, and clarify the relationships between claim(s) and reasons, betwee reasons and evidence, and between claim(s) and reasons, betwee reasons and evidence of the discipline in which they are writing. e. Provide a concluding statement or section that follows from and supports th argument presented.
	Cognitive Complexity: Level 4: Extended Thinking & Complex Reasoning
LAFS.910.W.1.2	Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, a

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	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).
	Cognitive Complexity: Level 4: Extended Thinking &Complex Reasoning
LAFS.910.W.1.3	 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.

Cluster 2: Production and Distribution of Writing

STANDARD CODE	STANDARD
LAFS.910.W.2.4	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.)
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.910.W.2.5	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 9–10 on page 54.)
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.910.W.2.6	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

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information and to display information flexibly and dynamically.
Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Cluster 3: Research to	Build and Present Knowledge
STANDARD CODE	STANDARD
LAFS.910.W.3.7	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.
	Cognitive Complexity: Level 4: Extended Thinking & Complex Reasoning
LAFS.910.W.3.8	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.
	Cognitive Complexity: Level 4: Extended Thinking &Complex Reasoning
LAFS.910.W.3.9	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").
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Cluster 4: Range of Writing	
STANDARD CODE	STANDARD
LAFS.910.W.4.10	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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Strand: STANDARDS FOR SPEAKING AND LISTENING

Cluster 1: Comprehension and Collaboration

STANDARD CODE	STANDARD	
LAFS.910.SL.1.1	 a. Come to discussions prepared, having read and researched material unde 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- 	r

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	 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 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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.910.SL.1.2	Integrate multiple sources of information presented in diverse media or formats (e.g., visually, quantitatively, orally) evaluating the credibility and accuracy of each source. <i>Cognitive Complexity:</i> Level 3: Strategic Thinking & Complex Reasoning
LAFS.910.SL.1.3	Evaluate a speaker's point of view, reasoning, and use of evidence and rhetoric, identifying any fallacious reasoning or exaggerated or distorted evidence.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Cluster 2: Presentation of Knowledge and Ideas

STANDARD CODE	STANDARD
LAFS.910.SL.2.4	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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.910.SL.2.5	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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.910.SL.2.6	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 page 54 for specific expectations.)
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Strand: LANGUAGE STANDARDS

Cluster 1: Conventions	of Standard English
STANDARD CODE	STANDARD
LAFS.910.L.1.1	 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 and add variety and interest to writing

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	or presentations.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.910.L.1.2	 Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing. a. Use a semicolon, with or without a conjunctive adverb, to link two of more closely related independent clauses. b. Use a colon to introduce a list or quotation. c. Spell correctly.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 2: Knowledge	of Language
STANDARD CODE	STANDARD
LAFS.910.L.2.3	 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. Write and edit work so that it conforms to the guidelines in a style manual (e.g., <i>MLA Handbook, Turabian's Manual for Writers</i>) appropriate for the discipline and writing type.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Cluster 3: Vocabulary Acquisition and Use	
STANDARD CODE	STANDARD
LAFS.910.L.3.4	 Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grades 9–10 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., analyze, analysis, analytical; advocate, advocacy). 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, 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).
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.910.L.3.5	Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.

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	a. Interpret figures of speech (e.g., euphemism, oxymoron) in context and analyze their role in the text.b. Analyze nuances in the meaning of words with similar denotations.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.910.L.3.6	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Strand: READING STANDARDS FOR LITERACY IN HISTORY/SOCIAL STUDIES 6–12

Cluster 1: Key Ideas and Details

STANDARD CODE	STANDARD
LAFS.910.RH.1.1	Cite specific textual evidence to support analysis of primary and secondary sources, attending to such features as the date and origin of the information.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.910.RH.1.2	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.910.RH.1.3	Analyze in detail a series of events described in a text; determine whether earlier events caused later ones or simply preceded them.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

STANDARD CODE STANDARD LAFS.910.RH.2.4 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. Cognitive Complexity: Level 2: Basic Application of Skills & Concepts LAFS.910.RH.2.5 Analyze how a text uses structure to emphasize key points or advance an explanation or analysis. Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning LAFS.910.RH.2.6 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. Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Cluster 3: Integration of Knowledge and Ideas

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STANDARD CODE	STANDARD
LAFS.910.RH.3.7	Integrate quantitative or technical analysis (e.g., charts, research data) with qualitative analysis in print or digital text.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.910.RH.3.8	Assess the extent to which the reasoning and evidence in a text support the author's claims.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.910.RH.3.9	Compare and contrast treatments of the same topic in several primary and secondary sources.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Cluster 4: Range of Reading and Level of Text Complexity	
STANDARD CODE	STANDARD
	By the end of grade 10, read and comprehend history/social studies texts in the grades 9–10 text complexity band independently and proficiently. <i>Cognitive Complexity:</i> Level 2: Basic Application of Skills & Concepts

Strand: READING STANDARDS FOR LITERACY IN SCIENCE AND TECHNICAL SUBJECTS 6-12

Cluster 1: Key Ideas and Details

STANDARD CODE	STANDARD
LAFS.910.RST.1.1	Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.910.RST.1.2	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.910.RST.1.3	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 2: Craft and Stru	ucture
STANDARD CODE	STANDARD
	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
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	9–10 texts and topics.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.910.RST.2.5	Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy). <u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts
LAFS.910.RST.2.6	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. <u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts

Cluster 3: Integration of Knowledge and Ideas

STANDARD CODE	STANDARD
LAFS.910.RST.3.7	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.910.RST.3.8	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.910.RST.3.9	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 4: Range of Reading and Level of Text Complexity STANDARD CODE STANDARD LAFS.910.RST.4.10 By the end of grade 10, read and comprehend science/technical texts in the grades 9–10 text complexity band independently and proficiently. Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Strand: WRITING STANDARDS FOR LITERACY IN HISTORY/SOCIAL STUDIES, SCIENCE, AND TECHNICAL SUBJECTS

Cluster 1: Text Types and Purposes

STANDARD CODE	STANDARD
LAFS.910.WHST.1.1	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

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	 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.
	Cognitive Complexity: Level 4: Extended Thinking & Complex Reasoning
LAFS.910.WHST.1.2	 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).
	Cognitive Complexity: Level 4: Extended Thinking & Complex Reasoning

Cluster 2: Production and Distribution of Writing	
STANDARD CODE	STANDARD
LAFS.910.WHST.2.4	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. <u>Cognitive Complexity:</u> Level 3: Strategic Thinking & Complex Reasoning
LAFS.910.WHST.2.5	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.
LAFS.910.WHST.2.6	<u>Cognitive Complexity:</u> Level 3: Strategic Thinking & Complex Reasoning 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. <u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts

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Cluster 3: Research to Build and Present Knowledge

STANDARD CODE	STANDARD
LAFS.910.WHST.3.7	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.
	Cognitive Complexity: Level 4: Extended Thinking & Complex Reasoning
LAFS.910.WHST.3.8	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. <u>Cognitive Complexity:</u> Level 4: Extended Thinking &Complex Reasoning
LAFS.910.WHST.3.9	Draw evidence from informational texts to support analysis, reflection, and research.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Cluster 4: Range of Wri	ling
STANDARD CODE	STANDARD
	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>Cognitive Complexity:</u> Level 3: Strategic Thinking & Complex Reasoning

GRADE: 1112

Strand: READING STANDARDS FOR LITERATURE

Cluster 1: Key Ideas and Details

STANDARD CODE	STANDARD
LAFS.1112.RL.1.1	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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.1112.RL.1.2	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. <i>Cognitive Complexity:</i> Level 3: Strategic Thinking & Complex Reasoning
LAFS.1112.RL.1.3	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). <u>Cognitive Complexity:</u> Level 3: Strategic Thinking & Complex Reasoning

Cluster 2: Craft and Structure

STANDARD CODE	STANDARD
LAFS.1112.RL.2.4	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.)
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.1112.RL.2.5	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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.1112.RL.2.6	Analyze a case in which grasping a point of view requires distinguishing what is directly stated in a text from what is really meant (e.g., satire, sarcasm, irony, or understatement).
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Cluster 3: Integration of Knowledge and Ideas

STANDARD CODE	STANDARD
LAFS.1112.RL.3.7	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.)
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.1112.RL.3.9	Demonstrate knowledge of eighteenth-, nineteenth- and early-twentieth-century foundational works of American literature, including how two or more texts from the

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same period treat similar themes or topics.
Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Cluster 4: Range of R	eading and Level of Text Complexity
STANDARD CODE	STANDARD
LAFS.1112.RL.4.10	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Strand: READING STANDARDS FOR INFORMATIONAL TEXT	
Cluster 1: Key Ideas a	nd Details
STANDARD CODE	STANDARD
LAFS.1112.RI.1.1	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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.1112.RI.1.2	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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.1112.RI.1.3	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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Cluster 2: Craft and Structure

STANDARD CODE	STANDARD
LAFS.1112.RI.2.4	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).
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.1112.RI.2.5	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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.1112.RI.2.6	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.

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Cognitive Complexity: Level 2: Strategie Thinking & Complex Personing	
Cognitive Complexity. Level 5. Strategic Thinking & Complex Reasoning	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Cluster 3: Integration of Knowledge and Ideas

STANDARD CODE	STANDARD
LAFS.1112.RI.3.7	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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.1112.RI.3.8	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).
LAFS.1112.RI.3.9	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. <u>Cognitive Complexity:</u> Level 3: Strategic Thinking & Complex Reasoning

Cluster 4: Range of Reading and Level of Text Complexity

STANDARD CODE	STANDARD
LAFS.1112.RI.4.10	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Strand: WRITING STANDARDS

Cluster 1: Text Types and Purposes	
STANDARD CODE	STANDARD
LAFS.1112.W.1.1	Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.
	 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

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	 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.
LAFS.1112.W.1.2	Cognitive Complexity: Level 4: Extended Thinking &Complex Reasoning 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. f. Provide a concluding statement or section that follows from and supports the information presented (e.g., articulating implications or the significance of the topic).
	Cognitive Complexity: Level 4: Extended Thinking &Complex Reasoning
LAFS.1112.W.1.3	 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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Cluster 2: Production and Distribution of Writing

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STANDARD CODE	STANDARD
LAFS.1112.W.2.4	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.)
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.1112.W.2.5	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 54.) Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.1112.W.2.6	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. <u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts

Cluster 3: Research to Build and Present Knowledge	
STANDARD CODE	STANDARD
LAFS.1112.W.3.7	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.1112.W.3.8	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.1112.W.3.9	Draw evidence from 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]").
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Cluster 4: Range of Writing

STANDARD CODE	STANDARD
	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.

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	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

STANDARD CODE	STANDARD
LAFS.1112.SL.1.1	Initiate and participate effectively in a range of collaborative discussions (one-on-one, 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-makin 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 promot 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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.1112.SL.1.2	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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.1112.SL.1.3	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.

Cluster 2: Presentation of Knowledge and Ideas

STANDARD CODE	STANDARD
LAFS.1112.SL.2.4	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 of formal and informal tasks. <u>Cognitive Complexity:</u> Level 3: Strategic Thinking & Complex Reasoning
LAFS.1112.SL.2.5	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. <u>Cognitive Complexity:</u> Level 3: Strategic Thinking & Complex Reasoning
LAFS.1112.SL.2.6	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
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on page 54 for specific expectations.)
Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Strand: LANGUAGE STANDARDS

Cluster 1: Conventions of Standard English

STANDARD CODE	STANDARD
LAFS.1112.L.1.1	Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
	 Apply the understanding that usage is a matter of convention, can change over time, and is sometimes contested.
	 Resolve issues of complex or contested usage, consulting references (e.g., Merriam-Webster's Dictionary of English Usage, Garner's Modern American Usage) as needed.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.1112.L.1.2	Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.
	a. Observe hyphenation conventions.b. Spell correctly.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 2: Knowledge of Language	
STANDARD CODE	STANDARD
LAFS.1112.L.2.3	 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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Cluster 3: Vocabulary Acquisition and Use

STANDARD CODE	STANDARD
LAFS.1112.L.3.4	Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on <i>grades 11–12 reading and content</i> , choosing flexibly from a range of strategies.
	 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

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	 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).
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.1112.L.3.5	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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.1112.L.3.6	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Strand: READING STANDARDS FOR LITERACY IN HISTORY/SOCIAL STUDIES 6–12

Cluster 1: Key Ideas and Details

STANDARD CODE	STANDARD
LAFS.1112.RH.1.1	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.1112.RH.1.2	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. <u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts
LAFS.1112.RH.1.3	Evaluate various explanations for actions or events and determine which explanation best accords with textual evidence, acknowledging where the text leaves matters uncertain.

Cluster 2: Craft and Structure

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STANDARD CODE	STANDARD
LAFS.1112.RH.2.4	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 <i>faction</i> in <i>Federalist</i> No. 10).
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.1112.RH.2.5	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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.1112.RH.2.6	Evaluate authors' differing points of view on the same historical event or issue by assessing the authors' claims, reasoning, and evidence.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Cluster 3: Integration of Knowledge and Ideas	
STANDARD CODE	STANDARD
LAFS.1112.RH.3.7	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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.1112.RH.3.8	Evaluate an author's premises, claims, and evidence by corroborating or challenging them with other information.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.1112.RH.3.9	Integrate information from diverse sources, both primary and secondary, into a coherent understanding of an idea or event, noting discrepancies among sources.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Cluster 4: Range of Reading and Level of Text Complexity

STANDARD CODE	STANDARD
	By the end of grade 12, read and comprehend history/social studies texts in the grades 11–CCR text complexity band independently and proficiently.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Strand: READING STANDARDS FOR LITERACY IN SCIENCE AND TECHNICAL SUBJECTS 6-12

Cluster 1: Key Ideas and Details

STANDARD CODE	STANDARD
	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.

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	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.1112.RST.1.2	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.
LAFS.1112.RST.1.3	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. <u>Cognitive Complexity:</u> Level 3: Strategic Thinking & Complex Reasoning

Cluster 2: Craft and Structure	
STANDARD CODE	STANDARD
LAFS.1112.RST.2.4	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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.1112.RST.2.5	Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.1112.RST.2.6	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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Cluster 3: Integration of Knowledge and Ideas	
STANDARD CODE	STANDARD
LAFS.1112.RST.3.7	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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.1112.RST.3.8	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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.1112.RST.3.9	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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Cluster 4: Range of Reading and Level of Text Complexity

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STANDARD CODE	STANDARD
LAFS.1112.RST.4.10	By the end of grade 12, read and comprehend science/technical texts in the grades 11– 12 text complexity band independently and proficiently.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Strand: WRITING STANDARDS FOR LITERACY IN HISTORY/SOCIAL STUDIES, SCIENCE, AND TECHNICAL SUBJECTS

Cluster 1: Text Types and Purposes

	CTANDADD
STANDARD CODE	STANDARD
LAFS.1112.WHST.1.1	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.
	 Provide a concluding statement or section that follows from or supports the argument presented.
	Cognitive Complexity: Level 4: Extended Thinking &Complex Reasoning
LAFS.1112.WHST.1.2	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).

Cognitive Complexity: Lovel 4: Extended Thinking & Complex Reasoning	
Cognitive Complexity. Level 4. Extended Thinking & Complex Reasoning	Cognitive Complexity: Level 4: Extended Thinking & Complex Reasoning

Cluster 2: Production and Distribution of Writing	
STANDARD CODE	STANDARD
LAFS.1112.WHST.2.4	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. <u>Cognitive Complexity:</u> Level 3: Strategic Thinking & Complex Reasoning
LAFS.1112.WHST.2.5	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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.1112.WHST.2.6	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 3: Research to Build and Present Knowledge	
STANDARD CODE	STANDARD
LAFS.1112.WHST.3.7	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.
LAFS.1112.WHST.3.8	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.
	Cognitive Complexity: Level 4: Extended Thinking &Complex Reasoning
LAFS.1112.WHST.3.9	Draw evidence from informational texts to support analysis, reflection, and research. Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Cluster 4: Range of Wri	ting
STANDARD CODE	STANDARD
	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>Cognitive Complexity:</u> Level 3: Strategic Thinking & Complex Reasoning

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Strand: READING STANDARDS FOR LITERACY IN HISTORY/SOCIAL STUDIES 6–12

Cluster 1: Key Ideas a	nd Details
	CTANDADD
STANDARD CODE	STANDARD
LAFS.68.RH.1.1	Cite specific textual evidence to support analysis of primary and secondary sources.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.68.RH.1.2	Determine the central ideas or information of a primary or secondary source; provide an
LAI 0.00.111.1.2	accurate summary of the source distinct from prior knowledge or opinions.
	accurate summary of the source distinct norm phot knowledge of opinions.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.68.RH.1.3	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).
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
	Contract Complexity. Level 2. Date Application of Okins & Concepts

Cluster 2: Craft and Structure	
STANDARD CODE	STANDARD
LAFS.68.RH.2.4	Determine the meaning of words and phrases as they are used in a text, including vocabulary specific to domains related to history/social studies.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.68.RH.2.5	Describe how a text presents information (e.g., sequentially, comparatively, causally).
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.68.RH.2.6	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).
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Cluster 3: Integration c	of Knowledge and Ideas
STANDARD CODE	STANDARD
LAFS.68.RH.3.7	Integrate visual information (e.g., in charts, graphs, photographs, videos, or maps) with other information in print and digital texts.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.68.RH.3.8	Distinguish among fact, opinion, and reasoned judgment in a text.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.68.RH.3.9	Analyze the relationship between a primary and secondary source on the same topic.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

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Cluster 4: Range of Rea	ading and Level of Text Complexity
STANDARD CODE	STANDARD
	By the end of grade 8, read and comprehend history/social studies texts in the grades 6–8 text complexity band independently and proficiently.

Strand: READING STANDARDS FOR LITERACY IN SCIENCE AND TECHNICAL SUBJECTS 6-12

Cluster 1: Key Ideas and Details

STANDARD CODE	STANDARD
LAFS.68.RST.1.1	Cite specific textual evidence to support analysis of science and technical texts.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.68.RST.1.2	Determine the central ideas or conclusions of a text; provide an accurate summary of the text distinct from prior knowledge or opinions.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.68.RST.1.3	Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 2: Craft and Structure	
STANDARD CODE	STANDARD
LAFS.68.RST.2.4	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.68.RST.2.5	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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.68.RST.2.6	Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Cluster 3: Integration of	Knowledge and Ideas
STANDARD CODE	STANDARD
LAFS.68.RST.3.7	Integrate quantitative or technical information expressed in words in a text with a

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	version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table). Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.68.RST.3.8	Distinguish among facts, reasoned judgment based on research findings, and speculation in a text. Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.68.RST.3.9	Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic. <u>Cognitive Complexity:</u> Level 3: Strategic Thinking & Complex Reasoning

Cluster 4: Range of Rea	ading and Level of Text Complexity
STANDARD CODE	STANDARD
	By the end of grade 8, read and comprehend science/technical texts in the grades 6–8 text complexity band independently and proficiently.

Strand: WRITING STANDARDS FOR LITERACY IN HISTORY/SOCIAL STUDIES, SCIENCE, AND TECHNICAL SUBJECTS

Cluster 1: Text Types and Purposes

STANDARD CODE	STANDARD
LAFS.68.WHST.1.1	Write arguments focused on discipline-specific content.
	 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.
	 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.
LAFS.68.WHST.1.2	<u>Cognitive Complexity:</u> Level 3: Strategic Thinking & Complex Reasoning 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.

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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.
Cognitiv	ve Complexity: Level 3: Strategic Thinking & Complex Reasoning

Cluster 2: Production and Distribution of Writing	
STANDARD CODE	STANDARD
LAFS.68.WHST.2.4	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.68.WHST.2.5	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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.68.WHST.2.6	Use technology, including the Internet, to produce and publish writing and present the relationships between information and ideas clearly and efficiently.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 3: Research to Build and Present Knowledge	
STANDARD CODE	STANDARD
LAFS.68.WHST.3.7	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.
	Cognitive Complexity: Level 4: Extended Thinking & Complex Reasoning
LAFS.68.WHST.3.8	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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
LAFS.68.WHST.3.9	Draw evidence from informational texts to support analysis reflection, and research.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Cluster 4: Range of Writ	ing
STANDARD CODE	STANDARD
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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.
Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

GRADE: K12

Strand: READING	
Cluster 1: Key Ideas a	nd Details
STANDARD CODE	STANDARD
LAFS.K12.R.1.1	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.K12.R.1.2	Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.K12.R.1.3	Analyze how and why individuals, events, and ideas develop and interact over the course of a text.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 2: Craft and Structure	
STANDARD CODE	STANDARD
LAFS.K12.R.2.4	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.K12.R.2.5	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.K12.R.2.6	Assess how point of view or purpose shapes the content and style of a text.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 3: Integration of Knowledge and Ideas	
STANDARD CODE	STANDARD
LAFS.K12.R.3.7	Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.K12.R.3.8	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.K12.R.3.9	Analyze how two or more texts address similar themes or topics in order to build knowledge or to compare the approaches the authors take.

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Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 4: Range of Reading and Level of Text Complexity	
STANDARD CODE	STANDARD
	Read and comprehend complex literary and informational texts independently and proficiently. <u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts

Strand: WRITING STANDARDS

Cluster 1: Text Types and Purposes

STANDARD CODE	STANDARD
LAFS.K12.W.1.1	Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.K12.W.1.2	Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.K12.W.1.3	Write narratives to develop real or imagined experiences or events using effective technique, well-chosen details, and well-structured event sequences.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Cluster 2: Production and Distribution of Writing	
STANDARD CODE	STANDARD
LAFS.K12.W.2.4	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. <u>Cognitive Complexity:</u> Level 3: Strategic Thinking & Complex Reasoning
LAFS.K12.W.2.5	Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach. <u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts
LAFS.K12.W.2.6	Use technology, including the Internet, to produce and publish writing and to interact and collaborate with others. <u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts

Cluster 3: Research to Build and Present Knowledge

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STANDARD CODE	STANDARD
LAFS.K12.W.3.7	Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.K12.W.3.8	Gather relevant information from multiple print and digital sources, assess the credibility and accuracy of each source, and integrate the information while avoiding plagiarism.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.K12.W.3.9	Draw evidence from literary or informational texts to support analysis, reflection, and research.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Cluster 4: Range of Wri	ting
STANDARD CODE	STANDARD
	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. <u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts

Strand: STANDARDS FOR SPEAKING AND LISTENING	
Cluster 1: Comprehension and Collaboration	
STANDARD CODE	STANDARD
LAFS.K12.SL.1.1	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.K12.SL.1.2	Integrate and evaluate information presented in diverse media and formats, including visually, quantitatively, and orally.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.K12.SL.1.3	Evaluate a speaker's point of view, reasoning, and use of evidence and rhetoric.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 2: Presentation	of Knowledge and Ideas
STANDARD CODE	STANDARD
LAFS.K12.SL.2.4	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.

The alphanumeric coding scheme has changed –

Language Arts Common Core (LACC) is now Language Arts Florida Standards (LAFS)

	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.K12.SL.2.5	Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.K12.SL.2.6	Adapt speech to a variety of contexts and communicative tasks, demonstrating command of formal English when indicated or appropriate.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Strand: LANGUAGE STANDARDS

Cluster 1: Conventions of Standard English

STANDARD CODE	STANDARD
LAFS.K12.L.1.1	Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
LAFS.K12.L.1.2	Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 2: Knowledge of Language	
STANDARD CODE	STANDARD
	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. <u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts

Cluster 3: Vocabulary Acquisition and Use	
STANDARD CODE	STANDARD
LAFS.K12.L.3.4	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.
LAFS.K12.L.3.5	Demonstrate understanding of word relationships and nuances in word meanings. <u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts
LAFS.K12.L.3.6	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 encountering an unknown term important to comprehension or expression.

The alphanumeric coding scheme has changed –

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Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Next Generation Sunshine State Standards (Florida Standards) – Mathematics, 2014

MAFS: Mathematics Standards

GRADE: K

Domain: COUNTING AND CARDINALITY	
Cluster 1: Know number names and the count sequence.	
STANDARD CODE	STANDARD
MAFS.K.CC.1.1	Count to 100 by ones and by tens.
	Cognitive Complexity: Level 1: Recall
MAFS.K.CC.1.2	Count forward beginning from a given number within the known sequence (instead of having to begin at 1).
	Cognitive Complexity: Level 1: Recall
MAFS.K.CC.1.3	Read and write numerals from 0 to 20. Represent a number of objects with a written numeral 0–20 (with 0 representing a count of no objects).
	Cognitive Complexity: Level 1: Recall

Cluster 2: Count to tell the number of objects.

STANDARD CODE	STANDARD
MAFS.K.CC.2.4	Understand the relationship between numbers and quantities; connect counting to cardinality. a. When counting objects, say the number names in the standard order, pairing
	each object with one and only one number name and each number name with one and only one object.
	 b. Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.
	c. Understand that each successive number name refers to a quantity that is one larger.
	<u>Cognitive Complexity:</u> Level 1: Recall
MAFS.K.CC.2.5	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.
	Cognitive Complexity: Level 1: Recall

Cluster 3: Compare numbers.

STANDARD CODE	STANDARD
	Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.

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Amended Standard

New Standard

	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.K.CC.3.7	Compare two numbers between 1 and 10 presented as written numerals.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Domain: OPERATIONS AND ALGEBRAIC THINKING

Cluster 1: Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.

STANDARD CODE	STANDARD
MAFS.K.OA.1.1	Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.K.OA.1.2	Solve addition and subtraction word problems ¹ , and add and subtract within 10, e.g., by using objects or drawings to represent the problem (¹ Students are not required to independently read the word problems.)
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.K.OA.1.3	Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., $5 = 2 + 3$ and $5 = 4 + 1$).
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.K.OA.1.4	For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing or equation.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.K.OA.1.5	Fluently add and subtract within 5. <u>Cognitive Complexity:</u> Level 1: Recall
MAFS.K.OA.1.a	Use addition and subtraction within 10 to solve word problems involving both addends unknown, e.g., by using objects, drawings, and equations with symbols for the unknown numbers to represent the problem. (Students are not required to independently read the word problems.)

Domain: NUMBER AND OPERATIONS IN BASE TEN

Cluster 1: Work with numbers 11–19 to gain foundations for place value.

STANDARD CODE	STANDARD
	Compose and decompose numbers from 11 to 19 into ten ones and some further ones, e.g., by using objects or drawings, and record each composition or decomposition by a drawing or equation (e.g., $18 = 10 + 8$); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones. <u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts

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Amended Standard

New Standard

Domain: MEASUREMENT AND DATA

Cluster 1: Describe and compare measurable attributes.

STANDARD CODE	STANDARD
MAFS.K.MD.1.1	Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.K.MD.1.2	Directly compare two objects with a measurable attribute in common, to see which object has "more of"/"less of" the attribute, and describe the difference. For example, directly compare the heights of two children and describe one child as taller/shorter.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.K.MD.1.a	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. <i>Limit to contexts where the object being measured is spanned by a whole number of length units with no gaps or overlaps.</i>

Cluster 2: Classify objects and count the number of objects in each category.

STANDARD CODE	STANDARD
MAFS.K.MD.2.3	Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Domain: GEOMETRY

Cluster 1: Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres).

STANDARD CODE	STANDARD
MAFS.K.G.1.1	Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as <i>above, below, beside, in front of, behind, and next to.</i>
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.K.G.1.2	Correctly name shapes regardless of their orientations or overall size.
	Cognitive Complexity: Level 1: Recall
MAFS.K.G.1.3	Identify shapes as two-dimensional (lying in a plane, "flat") or three-dimensional ("solid").
	Cognitive Complexity: Level 1: Recall

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Amended Standard

New Standard

Cluster 2: Analyze, compare, create, and compose shapes.

STANDARD CODE	STANDARD
MAFS.K.G.2.4	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).
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
MAFS.K.G.2.5	Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.K.G.2.6	Compose simple shapes to form larger shapes. For example, "Can you join these two triangles with full sides touching to make a rectangle?"
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

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Amended Standard

New Standard

GRADE: 1

Domain: OPERATIONS AND ALGEBRAIC THINKING

Cluster 1: Represent and solve problems involving addition and subtraction.

STANDARD CODE	STANDARD
MAFS.1.OA.1.1	Use addition and subtraction within 20 to solve word problems ¹ involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem (¹ Students are not required to independently read the word problems.) <u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts
MAFS.1.OA.1.2	Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.

Cluster 2: Understand and apply properties of operations and the relationship between addition and subtraction.

STANDARD CODE	STANDARD
MAFS.1.OA.2.3	Apply properties of operations as strategies to add and subtract. Examples: If $8 + 3 = 11$ is known, then $3 + 8 = 11$ is also known. (Commutative property of addition.) To add $2 + 6 + 4$, the second two numbers can be added to make a ten, so $2 + 6 + 4 = 2 + 10 = 12$. (Associative property of addition.) Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.1.OA.2.4	Understand subtraction as an unknown-addend problem. For example, subtract $10 - 8$ by finding the number that makes 10 when added to 8.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 3: Add and sub	tract within 20.
STANDARD CODE	STANDARD
MAFS.1.OA.3.5	Relate counting to addition and subtraction (e.g., by counting on 2 to add 2). Cognitive Complexity: Level 1: Recall
MAFS.1.OA.3.6	Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., $8 + 6 = 8 + 2 + 4 = 10 + 4 = 14$); decomposing a number leading to a ten (e.g., $13 - 4 = 13 - 3 - 1 = 10 - 1 = 9$); using the relationship between addition and subtraction (e.g., knowing that $8 + 4 = 12$, one knows $12 - 8 = 4$); and creating equivalent but easier or known sums (e.g., adding $6 + 7$ by creating the known equivalent $6 + 6 + 1 = 12 + 1 = 13$).

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New Standard

Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 4: Work with addition and subtraction equations.

STANDARD CODE	STANDARD
MAFS.1.OA.4.7	Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false. For example, which of the following equations are true and which are false? $6 = 6$, $7 = 8 - 1$, $5 + 2 = 2 + 5$, $4 + 1 = 5 + 2$.
MAFS.1.OA.4.8	<u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts Determine the unknown whole number in an addition or subtraction equation relating
	to three whole numbers. For example, determine the unknown number that makes the equation true in each of the equations $8 + ? = 11$, $5 = [] - 3$, $6 + 6 = []$.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Domain: NUMBER AND OPERATIONS IN BASE TEN

Cluster 1: Extend the counting sequence.

STANDARD CODE	STANDARD
	Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.
	<u>Cognitive Complexity:</u> Level 1: Recall

Cluster 2: Understand place value. STANDARD CODE **STANDARD** MAFS.1.NBT.2.2 Understand that the two digits of a two-digit number represent amounts of tens and ones. a. 10 can be thought of as a bundle of ten ones — called a "ten." b. The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones. c. 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). d. Decompose two-digit numbers in multiple ways (e.g., 64 can be decomposed into 6 tens and 4 ones or into 5 tens and 14 ones). Cognitive Complexity: Level 2: Basic Application of Skills & Concepts MAFS.1.NBT.2.3 Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols >, =, and <. Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

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Amended Standard

New Standard

Cluster 3: Use place value understanding and properties of operations to add and subtract.

Additional Cluster

• Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
MAFS.1.NBT.3.4	Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, 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. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten. <u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts
MAFS.1.NBT.3.5	Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used.
MAFS.1.NBT.3.6	Subtract multiples of 10 in the range 10-90 from multiples of 10 in the range 10-90 (positive or zero differences), 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.

Domain: MEASUREMENT AND DATA

STANDARD CODE	STANDARD
MAFS.1.MD.1.1	Order three objects by length; compare the lengths of two objects indirectly by using third object.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.1.MD.1.2	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 r gaps or overlaps. <i>Limit to contexts where the object being measured is spanned by whole number of length units with no gaps or overlaps.</i>
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.1.MD.1.a	Understand how to use a ruler to measure length to the nearest inch. a. Recognize that the ruler is a tool that can be used to measure the

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Cluster 2: Tell and write time.

STANDARD CODE	STANDARD
MAFS.1.MD.2.3	Tell and write time in hours and half-hours using analog and digital clocks.
	<u>Cognitive Complexity:</u> Level 1: Recall
MAFS.1.MD.2.a	 Identify and combine values of money in cents up to one dollar working with a single unit of currency. a. Identify the value of coins (pennies, nickels, dimes, quarters). b. Compute the value of combinations of coins (pennies and/or dimes). c. Relate the value of pennies, dimes, and quarters to the dollar (e.g., The are 100 pennies or ten dimes or four quarters in one dollar.) (Students are not expected to understand the decimal notation for combinations dollars and cents.)

Cluster 3: Represent and interpret data.

Supporting Cluster

• Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
	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.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Domain: GEOMETRY

Cluster 1: Reason with shapes and their attributes.

Supporting Cluster

• Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
MAFS.1.G.1.1	Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size); build and draw shapes to possess defining attributes.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.1.G.1.2	Compose 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,

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	and compose new shapes from the composite shape. <u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts
MAFS.1.G.1.3	Partition circles and rectangles into two and four equal shares, describe the shares using the words <i>halves, fourths</i> , and <i>quarters</i> , and use the phrases <i>half of, fourth of</i> , and <i>quarter of</i> . Describe the whole as two of, or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares. <u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts

Amended Standard New Standard Deleted Standard

GRADE: 2

Domain: OPERATIONS AND ALGEBRAIC THINKING

Cluster 1: Represent and solve problems involving addition and subtraction.

STANDARD CODE	STANDARD
MAFS.2.OA.1.1	Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.
MAFS.2.OA.1.a	Determine the unknown whole number in an equation relating four or more whole numbers. For example, determine the unknown number that makes the equation true in the equations $37 + 10 + 10 = ___ + 18$, $? - 6 = 13 - 4$, and $15 - 9 = 6 + ___$

 Cluster 2: Add and subtract within 20.

 STANDARD CODE
 STANDARD

 MAFS.2.OA.2.2
 Fluently add and subtract within 20 using mental strategies. By end of Grade 2, know from memory all sums of two one-digit numbers.

 Cognitive Complexity: Level 1: Recall

Cluster 3: Work with equal groups of objects to gain foundations for multiplication.

STANDARD CODE	STANDARD
MAFS.2.OA.3.3	Determine whether a group of objects (up to 20) has an odd or even number of members, e.g., by pairing objects or counting them by 2s; write an equation to express an even number as a sum of two equal addends. <u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts
MAFS.2.OA.3.4	Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns; write an equation to express the total as a sum of equal
	addends. <i>Cognitive Complexity:</i> Level 1: Recall

Domain: NUMBER AND OPERATIONS IN BASE TEN

Cluster 1: Understand place value.

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STANDARD CODE	STANDARD
MAFS.2.NBT.1.1	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. Understand the following as special cases:
	 a. 100 can be thought of as a bundle of ten tens — called a "hundred." b. 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).
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.2.NBT.1.2	Count within 1000; skip-count by 5s, 10s, and 100s.
	Cognitive Complexity: Level 1: Recall
MAFS.2.NBT.1.3	Read and write numbers to 1000 using base-ten numerals, number names, and expanded form.
	Cognitive Complexity: Level 1: Recall
MAFS.2.NBT.1.4	Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using >, =, and < symbols to record the results of comparisons.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 2: Use place v	value understanding and properties of operations to add and subtract.
STANDARD CODE	STANDARD
MAFS.2.NBT.2.5	Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.
	Cognitive Complexity: Level 1: Recall
MAFS.2.NBT.2.6	Add up to four two-digit numbers using strategies based on place value and properties of operations.
	Cognitive Complexity: Level 1: Recall
MAFS.2.NBT.2.7	Add and subtract within 1000, 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. Understand that in adding or subtracting three digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.2.NBT.2.8	Mentally add 10 or 100 to a given number 100–900, and mentally subtract 10 or 100 from a given number 100–900.
	Cognitive Complexity: Level 1: Recall
MAFS.2.NBT.2.9	Explain why addition and subtraction strategies work, using place value and the properties of operations.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

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Amended Standard New Standard

Deleted Standard

Domain: MEASUREMENT AND DATA

Cluster 1: Measure and estimate lengths in standard units.

STANDARD CODE	STANDARD
MAFS.2.MD.1.1	Measure the length of an object to the nearest inch, foot, centimeter, or meter by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.
MAFS.2.MD.1.2	Describe the inverse relationship between the size of a unit and number of units needed to measure a given object. Example: Suppose the perimeter of a room is lined with one-foot rulers. Now, suppose we want to line it with yardsticks instead of rulers. Will we need more or fewer yardsticks than rulers to do the job? Explain your answer. Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.2.MD.1.3	Estimate lengths using units of inches, feet, yards, centimeters, and meters. <u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts
MAFS.2.MD.1.4	Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit.

Cluster 2: Relate addit	ion and subtraction to length.
STANDARD CODE	STANDARD
MAFS.2.MD.2.5	Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units, e.g., by using drawings (such as drawings of rulers) and equations with a symbol for the unknown number to represent the problem.
MAFS.2.MD.2.6	Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, 2,, and represent whole-number sums and differences within 100 on a number line diagram.

Cluster 3: Work with time and money. STANDARD CODE STANDARD CODE STANDARD MAFS.2.MD.3.7 Tell and write time from analog and digital clocks to the nearest five minutes. Cognitive Complexity: Level 1: Recall MAFS.2.MD.3.8 Solve one- and two-step word problems involving dollar bills (singles, fives, tens, twenties, and hundreds) or coins (quarters, dimes, nickels, and pennies) using \$

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a V	nd ¢ symbols appropriately. Word problems may involve addition, subtraction, nd equal groups situations ¹ . <i>Example: The cash register shows that the total for</i> <i>our purchase is 59¢. You gave the cashier three quarters. How much change</i> <i>hould you receive from the cashier?</i>
	 a. Identify the value of coins and paper currency. b. Compute the value of any combination of coins within one dollar. c. Compute the value of any combinations of dollars (e.g., If you have three ten-dollar bills, one five-dollar bill, and two one-dollar bills, how much money do you have?). d. Relate the value of pennies, nickels, dimes, and quarters to other coins and to the dollar (e.g., There are five nickels in one quarter. There are two nickels in one dime. There are two and a half dimes in one quarter. There are twenty nickels in one dollar).
c .	See glossary <u>Table 1</u>) Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 4: Represent and interpret data.

Major Cluster

• Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
MAFS.2.MD.4.10	Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in a bar graph. <u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts
MAFS.2.MD.4.9	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Domain: GEOMETRY

Cluster 1: Reason with shapes and their attributes.

Supporting Cluster

• Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
	Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces. Identify triangles, quadrilaterals, pentagons, hexagons, and cubes.

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Amended Standard

New Standard

	<u>Cognitive Complexity:</u> Level 1: Recall
MAFS.2.G.1.2	Partition a rectangle into rows and columns of same-size squares and count to find the total number of them.
	Cognitive Complexity: Level 1: Recall
MAFS.2.G.1.3	Partition circles and rectangles into two, three, or four equal shares, describe the shares using the words <i>halves, thirds, half of, a third of,</i> etc., and describe the whole as two halves, three thirds, four fourths. Recognize that equal shares of identical wholes need not have the same shape.

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Amended Standard New Standard Deleted Standard

GRADE: 3

Domain: OPERATIONS AND ALGEBRAIC THINKING

Cluster 1: Represent and solve problems involving multiplication and division.

Major Cluster

• Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
MAFS.3.OA.1.1	Interpret products of whole numbers, e.g., interpret 5×7 as the total number of objects in 5 groups of 7 objects each. For example, describe a context in which a total number of objects can be expressed as 5×7 .
	<u>Cognitive Complexity:</u> Level 1: Recall
MAFS.3.OA.1.2	Interpret whole-number quotients of whole numbers, e.g., interpret $56 \div 8$ as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each. For example, describe a context in which a number of shares or a number of groups can be expressed as $56 \div 8$.
	Cognitive Complexity: Level 1: Recall
MAFS.3.OA.1.3	Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.
MAFS.3.OA.1.4	Determine the unknown whole number in a multiplication or division equation relating three whole numbers. For example, determine the unknown number that makes the equation true in each of the equations $8 \times ? = 48, 5 = [] \div 3, 6 \times 6 = ?$.
	Cognitive Complexity: Level 1: Recall

Cluster 2: Understand properties of multiplication and the relationship between multiplication and division.

Major Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
	Apply properties of operations as strategies to multiply and divide. Examples: If $6 \times 4 = 24$ is known, then $4 \times 6 = 24$ is also known. (Commutative property of multiplication.) $3 \times 5 \times 2$ can be found by $3 \times 5 = 15$, then $15 \times 2 = 30$, or by $5 \times 2 = 10$, then $3 \times 10 = 30$. (Associative property of multiplication.) Knowing that $8 \times 5 = 40$ and $8 \times 2 = 16$, one can find 8×7 as $8 \times (5 + 2) = (8 \times 5) + (8 \times 2) = 40 + 16 = 56$. (Distributive property.)

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	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.3.OA.2.6	Understand division as an unknown-factor problem. <i>For example, find 32 ÷ 8 by finding the number that makes 32 when multiplied by 8.</i> <u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts

Cluster 3: Multiply and divide within 100.

Major Cluster

• Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
	Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that $8 \times 5 = 40$, one knows $40 \div 5 = 8$) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers. <i>Cognitive Complexity:</i> Level 1: Recall

Cluster 4: Solve problems involving the four operations, and identify and explain patterns in arithmetic.

Major Cluster

• Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
MAFS.3.OA.4.8	Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.3.OA.4.9	Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Domain: NUMBER AND OPERATIONS IN BASE TEN

Cluster 1: Use place value understanding and properties of operations to perform multi-digit arithmetic.

Additional Cluster

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Amended Standard

New Standard

• Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

	OTANDADD
STANDARD CODE	STANDARD
MAFS.3.NBT.1.1	Use place value understanding to round whole numbers to the nearest 10 or 100.
	Cognitive Complexity: Level 1: Recall
MAFS.3.NBT.1.2	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.
MAFS.3.NBT.1.3	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.
	Cognitive Complexity: Level 1: Recall

Domain: NUMBER AND OPERATIONS - FRACTIONS

Cluster 1: Develop understanding of fractions as numbers.

Major Cluster

• Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
MAFS.3.NF.1.1	Understand a fraction 1/b as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size 1/b. <u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts
MAFS.3.NF.1.2	Understand a fraction as a number on the number line; represent fractions on a number
WAP3.3.NF.1.2	line diagram.
	 a. Represent a fraction 1/b on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into <i>b</i> equal parts. Recognize that each part has size 1/b and that the endpoint of the part based at 0 locates the number 1/b on the number line. b. Represent a fraction a/b 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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.3.NF.1.3	Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size.
	 Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line.
	b. Recognize and generate simple equivalent fractions, e.g., $1/2 = 2/4$, $4/6 = 2/3$). Explain why the fractions are equivalent, e.g., by using a visual fraction model.

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	c. Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. <i>Examples: Express 3 in the form $3 = 3/1$; recognize that $6/1 = 6$; locate $4/4$ and 1 at the same point of a number line diagram.</i>
	d. Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model.
Cog	nitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Domain: MEASUREMENT AND DATA

Cluster 1: Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.

Major Cluster

• Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
MAFS.3.MD.1.1	Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram.
MAFS.3.MD.1.2	Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (I). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units. <u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts

Cluster 2: Represent and interpret data.

Supporting Cluster

• Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

Examples of Opportunities for In-Depth Focus

Continuous measurement quantities such as liquid volume, mass, and so on are an important context for fraction arithmetic (cf. 4.NF.2.4c, 5.NF.2.7c, 5.NF.2.3). In grade 3, students begin to get a feel for continuous measurement quantities and solve whole- number problems involving such quantities.

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STANDARD CODE	STANDARD
MAFS.3.MD.2.3	Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs. <i>For example, draw a bar graph in which each square in the bar graph might represent 5 pets.</i>
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.3.MD.2.4	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 3: Geometric measurement: understand concepts of area and relate area to multiplication and to addition.

Major Cluster

• Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

	OTANDADD
STANDARD CODE	STANDARD
MAFS.3.MD.3.5	Recognize area as an attribute of plane figures and understand concepts of area measurement.
	 a. 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. b. A plane figure which can be covered without gaps or overlaps by <i>n</i> unit squares is said to have an area of <i>n</i> square units.
	Cognitive Complexity: Level 1: Recall
MAFS.3.MD.3.6	Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units).
	Cognitive Complexity: Level 1: Recall
MAFS.3.MD.3.7	 Relate area to the operations of multiplication and addition. a. 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. b. 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. c. Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths a and b + c is the sum of a x b and a x c. Use area models to represent the distributive property in mathematical reasoning. d. 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.

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Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Cluster 4: Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.

Additional Cluster

• Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Domain: GEOMETRY

Cluster 1: Reason with shapes and their attributes.

Supporting Cluster

• Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
MAFS.3.G.1.1	Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.3.G.1.2	Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. For example, partition a shape into 4 parts with equal area, and describe the area of each part as 1/4 of the area of the shape.
	Cognitive Complexity: Level 1: Recall

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New Standard

GRADE: 4

Domain: OPERATIONS AND ALGEBRAIC THINKING

Cluster 1: Use the four operations with whole numbers to solve problems.

Major Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
MAFS.4.OA.1.1	Interpret a multiplication equation as a comparison, e.g., interpret $35 = 5 \times 7$ as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations. <u>Cognitive Complexity:</u> Level 1: Recall
MAFS.4.OA.1.2	Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison. <u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts
MAFS.4.OA.1.3	Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. <u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts
MAFS.4.OA.1.a	Determine whether an equation is true or false by using comparative relational thinking. For example, without adding 60 and 24, determine whether the equation $60 + 24 = 57 + 27$ is true or false.
MAFS.4.OA.1.b	Determine the unknown whole number in an equation relating four whole numbers using comparative relational thinking. For example, solve $76 + 9 = n + 5$ for n by arguing that nine is four more than five, so the unknown number must be four greater than 76.

Cluster 2: Gain familiarity with factors and multiples.

Supporting Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
MAFS.4.OA.2.4	Investigate factors and multiples.
	 a. Find all factor pairs for a whole number in the range 1–100. b. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1–100 is a multiple of a given one-digit number. c. Determine whether a given whole number in the range 1–100 is prime or

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composite.

Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 3: Generate and analyze patterns.

Additional Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
	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. For example, given the rule "Add 3" and the starting number 1, generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers. Explain informally why the numbers will continue to alternate in this way.

Domain: NUMBER AND OPERATIONS IN BASE TEN

Cluster 1: Generalize place value understanding for multi-digit whole numbers.

Major Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
MAFS.4.NBT.1.1	Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. For example, recognize that $700 \div 70 = 10$ by applying concepts of place value and division.
	Cognitive Complexity: Level 1: Recall
MAFS.4.NBT.1.2	Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.4.NBT.1.3	Use place value understanding to round multi-digit whole numbers to any place.
	<u>Cognitive Complexity:</u> Level 1: Recall

Cluster 2: Use place value understanding and properties of operations to perform multi-digit arithmetic.

Major Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

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STANDARD CODE	STANDARD
MAFS.4.NBT.2.4	Fluently add and subtract multi-digit whole numbers using the standard algorithm.
	Cognitive Complexity: Level 1: Recall
MAFS.4.NBT.2.5	Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.4.NBT.2.6	Find whole-number quotients and remainders with up to four-digit dividends and one- 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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Domain: NUMBER AND OPERATIONS - FRACTIONS

Cluster 1: Extend understanding of fraction equivalence and ordering.

Major Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
MAFS.4.NF.1.1	Explain why a fraction a/b is equivalent to a fraction $(n \times a)/(n \times b)$ by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions. Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
MAFS.4.NF.1.2	Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as 1/2. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model.

Cluster 2: Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.

Major Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
MAFS.4.NF.2.3	Understand a fraction a/b with a > 1 as a sum of fractions 1/b.

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	 a. Understand addition and subtraction of fractions as joining and separating parts referring to the same whole. b. 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, e.g., by using a visual fraction model. <i>Examples: 3/8 = 1/8 + 1/8 + 1/8 ; 3/8 = 1/8 + 2/8 ; 2 1/8 = 1 + 1 + 1/8 = 8/8 + 8/8 + 1/8.</i> c. Add and subtract mixed numbers with like denominators, e.g., by replacing
	each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction.
	d. Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g., by using visual fraction models and equations to represent the problem.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.4.NF.2.4	Apply and extend previous understandings of multiplication to multiply a fraction by a whole number.
	a. Understand a fraction a/b as a multiple of 1/b. For example, use a visual fraction model to represent 5/4 as the product $5 \times (1/4)$, recording the conclusion by the equation $5/4 = 5 \times (1/4)$.
	b. Understand a multiple of a/b as a multiple of 1/b, and use this understanding to multiply a fraction by a whole number. For example, use a visual fraction model to express $3 \times (2/5)$ as $6 \times (1/5)$, recognizing this product as $6/5$. (In general, $n \times (a/b) = (n \times a)/b$.)
	c. Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem. For example, if each person at a party will eat 3/8 of a pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie?
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 3: Understand decimal notation for fractions, and compare decimal fractions.

Major Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
	Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100. For example, express $3/10$ as $30/100$, and add $3/10 + 4/100 = 34/100$.
	<u>Cognitive Complexity:</u> Level 1: Recall
	Use decimal notation for fractions with denominators 10 or 100. For example, rewrite 0.62 as 62/100; describe a length as 0.62 meters; locate 0.62 on a number line diagram.

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Cognitive Complexity: Level 1: Recall
Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual model.

Domain: MEASUREMENT AND DATA

Cluster 1: Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.

Supporting Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
MAFS.4.MD.1.1	Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table. For example, know that 1 ft is 12 times as long as 1 in. Express the length of a 4 ft snake as 48 in. Generate a conversion table for feet and inches listing the number pairs (1, 12), (2, 24), (3, 36),
	Cognitive Complexity: Level 1: Recall
MAFS.4.MD.1.2	Use the four operations to solve word problems ¹ involving distances, intervals of time, and money, including problems involving simple fractions or decimals ² . Represent fractional quantities of distance and intervals of time using linear models. (¹ See glossary <u>Table 1</u> and <u>Table 2</u>) (² Computational fluency with fractions and decimals is not the goal for students at this grade level.) <u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts
MAFS.4.MD.1.3	Apply the area and perimeter formulas for rectangles in real world and mathematical problems. For example, find the width of a rectangular room given the area of the flooring and the length, by viewing the area formula as a multiplication equation with an unknown factor. Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 2: Represent and interpret data.

Supporting Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
MAFS.4.MD.2.4	Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4,

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1/8). Solve problems involving addition and subtraction of fractions by using information presented in line plots. For example, from a line plot find and interpret the difference in length between the longest and shortest specimens in an insect collection.
Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 3: Geometric measurement: understand concepts of angle and measure angles.

Additional Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
MAFS.4.MD.3.5	Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement:
	 a. 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. An angle that turns through 1/360 of a circle is called a "one-degree angle," and can be used to measure angles. b. An angle that turns through <i>n</i> one-degree angles is said to have an angle measure of <i>n</i> degrees.
	<u>Cognitive Complexity:</u> Level 1: Recall
MAFS.4.MD.3.6	Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.4.MD.3.7	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 addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems, e.g., by using an equation with a symbol for the unknown angle measure.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Domain: GEOMETRY

Cluster 1: Draw and identify lines and angles, and classify shapes by properties of their lines and angles.

Additional Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE

STANDARD

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MAFS.4.G.1.1	Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures. <u>Cognitive Complexity:</u> Level 1: Recall
MAFS.4.G.1.2	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. <u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts
MAFS.4.G.1.3	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. <u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts

GRADE: 5

Domain: OPERATIONS AND ALGEBRAIC THINKING

Cluster 1: Write and interpret numerical expressions.

Additional Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
MAFS.5.OA.1.1	Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.
	Cognitive Complexity: Level 1: Recall
MAFS.5.OA.1.2	Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. For example, express the calculation "add 8 and 7, then multiply by 2" as $2 \times (8 + 7)$. Recognize that $3 \times (18932 + 921)$ is three times as large as $18932 + 921$, without having to calculate the indicated sum or product.
	Cognitive Complexity: Level 1: Recall

Cluster 2: Analyze patterns and relationships.

Additional Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
MAFS.5.OA.2.3	Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane. For example, given the rule "Add 3" and the starting number 0, and given the rule "Add 6" and the starting number 0, generate terms in the resulting sequences, and observe that the terms in one sequence are twice the corresponding terms in the other sequence. Explain informally why this is so.

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Domain: NUMBER AND OPERATIONS IN BASE TEN

Cluster 1: Understand the place value system.

Major Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
MAFS.5.NBT.1.1	Recognize that in a multi-digit number, a digit in one 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. <u>Cognitive Complexity:</u> Level 1: Recall
MAFS.5.NBT.1.2	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.5.NBT.1.3	 Read, write, and compare decimals to thousandths. a. Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., 347.392 = 3 × 100 + 4 × 10 + 7 × 1 + 3 × (1/10) + 9 × (1/100) + 2 × (1/100). b. Compare two decimals to thousandths based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.
MAFS.5.NBT.1.4	Use place value understanding to round decimals to any place.
L	Cognitive Complexity: Level 1: Recall

Cluster 2: Perform operations with multi-digit whole numbers and with decimals to hundredths.

Major Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
MAFS.5.NBT.2.5	Fluently multiply multi-digit whole numbers using the standard algorithm.
	Cognitive Complexity: Level 1: Recall
MAFS.5.NBT.2.6	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.

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Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
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. <u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts

Domain: NUMBER AND OPERATIONS - FRACTIONS

Cluster 1: Use equivalent fractions as a strategy to add and subtract fractions.

Major Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
MAFS.5.NF.1.1	Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. For example, $2/3 + 5/4 = 8/12 + 15/12 = 23/12$. (In general, $a/b + c/d = (ad + bc)/bd$.) Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.5.NF.1.2	Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. For example, recognize an incorrect result $2/5 + 1/2 = 3/7$, by observing that $3/7 < 1/2$.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 2: Apply and extend previous understandings of multiplication and division to multiply and divide fractions.

Major Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
	Interpret a fraction as division of the numerator by the denominator $(a/b = a \div b)$. Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem. For example, interpret 3/4 as the result of dividing 3 by 4, noting that 3/4 multiplied by 4 equals 3, and that when 3 wholes are shared equally among 4 people each person has a share of size 3/4. If 9 people want to share a 50-pound sack of rice equally by weight, how many pounds of rice should each person get? Between what two whole numbers does your answer lie? Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.5.NF.2.4	Apply and extend previous understandings of multiplication to multiply a fraction or

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	whole number by a fraction.
	 a. Interpret the product (a/b) × q as a parts of a partition of q into b equal parts; equivalently, as the result of a sequence of operations a × q ÷ b. For example, use a visual fraction model to show (2/3) × 4 = 8/3, and create a story context for this equation. Do the same with (2/3) × (4/5) = 8/15. (In general, (a/b) × (c/d) = ac/bd.) b. Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.5.NF.2.5	Interpret multiplication as scaling (resizing), by:
	 a. Comparing the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication. b. Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case); explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number; and relating the principle of fraction equivalence a/b = (nxa)/(nxb) to the effect of multiplying a/b by 1.
MAFS.5.NF.2.6	<u>Cognitive Complexity:</u> Level 3: Strategic Thinking & Complex Reasoning Solve real world problems involving multiplication of fractions and mixed numbers, e.g.,
	by using visual fraction models or equations to represent the problem.
MAFS.5.NF.2.7	<u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts Apply and extend previous understandings of division to divide unit fractions by whole
MAF 5.5.NF.2.1	 a. Interpret division of a unit fraction by a non-zero whole number, and compute such quotients. For example, create a story context for (1/3) ÷ 4, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that (1/3) ÷ 4 = 1/12 because (1/12) × 4 = 1/3. b. Interpret division of a whole number by a unit fraction, and compute such quotients. For example, create a story context for 4 ÷ (1/5), and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that (1/3) = 20 because 20 × (1/5) = 4. c. Solve real world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions, e.g., by using visual fraction models and equations to represent the problem. For example, how much chocolate will each person get if 3 people share 1/2 lb of chocolate equally? How many 1/3-cup servings are in 2 cups of raisins?
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

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Domain: MEASUREMENT AND DATA

Cluster 1: Convert like measurement units within a given measurement system.

Supporting Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
	Convert among different-sized standard measurement units (i.e., km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec) 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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 2: Represent and interpret data.

Supporting Cluster

• Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
MAFS.5.MD.2.2	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. For example, given different measurements of liquid in identical beakers, find the amount of liquid each beaker would contain if the total amount in all the beakers were redistributed equally.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 3: Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.

Major Cluster

Don't ...Sort clusters from Major to Supporting and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
MAFS.5.MD.3.3	Recognize volume as an attribute of solid figures and understand concepts of volume measurement.
	a. A cube with side length 1 unit, called a "unit cube," is said to have "one cubic unit" of volume, and can be used to measure volume.b. 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.

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	<u>Cognitive Complexity:</u> Level 1: Recall
MAFS.5.MD.3.4	Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units. <i>Cognitive Complexity:</i> Level 1: Recall
MAFS.5.MD.3.5	 Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume. a. 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. b. Apply the formulas V = I × w × h and V = B × 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. c. Recognize volume as additive. Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real world problems.

Domain: GEOMETRY

Cluster 1: Graph points on the coordinate plane to solve real-world and mathematical problems.

Additional Cluster

Don't ...Sort clusters from Major to Supporting and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
MAFS.5.G.1.1	Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., x-axis and x-coordinate, y-axis and y-coordinate).
MAFS.5.G.1.2	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. <i>Cognitive Complexity:</i> Level 2: Basic Application of Skills & Concepts

Cluster 2: Classify two-dimensional figures into categories based on their properties.

Additional Cluster Don't ...Sort clusters from Major to Supporting and then teach them in that order. To do so

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would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
STANDARD CODE	STANDARD
MAFS.5.G.2.3	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.5.G.2.4	Classify and organize two-dimensional figures into Venn diagrams based on the attributes of the figures.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

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GRADE: 6

Domain: RATIOS & PROPORTIONAL RELATIONSHIPS

Cluster 1: Understand ratio concepts and use ratio reasoning to solve problems.

Major Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
MAFS.6.RP.1.1	Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. For example, "The ratio of wings to beaks in the bird house at the zoo was 2:1, because for every 2 wings there was 1 beak." "For every vote candidate A received, candidate C received nearly three votes." <u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts
MAFS.6.RP.1.2	Understand the concept of a unit rate a/b associated with a ratio a:b with b ≠ 0, and use rate language in the context of a ratio relationship. For example, "This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is 3/4 cup of flour for each cup of sugar." "We paid \$75 for 15 hamburgers, which is a rate of \$5 per hamburger." Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.6.RP.1.3	 Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations. a. Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios. b. Solve unit rate problems including those involving unit pricing and constant speed. For example, if it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed? c. Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity); solve problems involving finding the whole, given a part and the percent. d. Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities. e. Understand the concept of Pi as the ratio of the circumference of a circle to its diameter.

Domain: THE NUMBER SYSTEM

Cluster 1: Apply and extend previous understandings of multiplication and division to divide fractions by fractions.

Major Cluster

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STANDARD CODE	STANDARD
	Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem. For example, create a story context for $(2/3) \div (3/4)$ and use a visual fraction model to show the quotient; use the relationship between multiplication and division to explain that $(2/3) \div (3/4) = 8/9$ because $3/4$ of $8/9$ is $2/3$. (In general, $(a/b) \div (c/d) = ad/bc$.) How much chocolate will each person get if 3 people share $1/2$ lb of chocolate equally? How many $3/4$ -cup servings are in $2/3$ of a cup of yogurt? How wide is a rectangular strip of land with length $3/4$ mi and area $1/2$ square mi?
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 2: Compute fluently with multi-digit numbers and find common factors and multiples.

Additional Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
MAFS.6.NS.2.2	Fluently divide multi-digit numbers using the standard algorithm.
	Cognitive Complexity: Level 1: Recall
MAFS.6.NS.2.3	Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.
	Cognitive Complexity: Level 1: Recall
MAFS.6.NS.2.4	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. For example, express $36 + 8$ as $4 (9 + 2)$.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 3: Apply and extend previous understandings of numbers to the system of rational numbers.

Major Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
MAFS.6.NS.3.5	Understand that positive and negative numbers are used together to describe quantities

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	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. <u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts
MAFS.6.NS.3.6	 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 in the plane with negative number coordinates. a. Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize that the opposite of the opposite of a number is the number itself, e.g., -(-3) = 3, and that 0 is its own opposite. b. Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane; recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes. c. 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.
MAFS.6.NS.3.7	 Understand ordering and absolute value of rational numbers. a. Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram. For example, interpret -3 > -7 as a statement that -3 is located to the right of -7 on a number line oriented from left to right. b. Write, interpret, and explain statements of order for rational numbers in realworld contexts. For example, write -3 °C > -7 °C to express the fact that -3 °C is warmer than -7 °C. c. 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. For example, for an account balance of -30 dollars, write -30 = 30 to describe the size of the debt in dollars. d. Distinguish comparisons of absolute value from statements about order. For example, recognize that an account balance less than -30 dollars represents a debt greater than 30 dollars.
MAFS.6.NS.3.8	<u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts 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.

Domain: EXPRESSIONS & EQUATIONS

Cluster 1: Apply and extend previous understandings of arithmetic to algebraic expressions.

Major Cluster

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STANDARD CODE	STANDARD
MAFS.6.EE.1.1	Write and evaluate numerical expressions involving whole-number exponents.
	<u>Cognitive Complexity:</u> Level 1: Recall
MAFS.6.EE.1.2	
MAFS.6.EE.1.2	 Write, read, and evaluate expressions in which letters stand for numbers. a. Write expressions that record operations with numbers and with letters standing for numbers. For example, express the calculation "Subtract y from 5" as 5 - y. b. Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity. For example, describe the expression 2 (8 + 7) as a product of two factors; view (8 + 7) as both a single entity and a sum of two terms. c. Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those involving whole-number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations). For example, use the formulas V = s³ and A = 6 s² to find the volume and surface area of a cube with sides of length s = 1/2.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.6.EE.1.3	Apply the properties of operations to generate equivalent expressions. For example, apply the distributive property to the expression $3 (2 + x)$ to produce the equivalent expression $6 + 3x$; apply the distributive property to the expression $24x + 18y$ to produce the equivalent expression $6 (4x + 3y)$; apply properties of operations to $y + y + y$ to produce the equivalent expression $3y$.
	<u>Cognitive Complexity:</u> Level 1: Recall
MAFS.6.EE.1.4	Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them). For example, the expressions $y + y + y$ and $3y$ are equivalent because they name the same number regardless of which number y stands for.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 2: Reason about and solve one-variable equations and inequalities.

Major Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
	Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.

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	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.6.EE.2.6	Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set. <u>Cognitive Complexity:</u> Level 3: Strategic Thinking & Complex Reasoning
MAFS.6.EE.2.7	Solve real-world and mathematical problems by writing and solving equations of the form $x + p = q$ and $px = q$ for cases in which p, q and x are all non-negative rational numbers.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.6.EE.2.8	Write an inequality of the form $x > c$ or $x < c$ to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities of the form $x > c$ or $x < c$ have infinitely many solutions; represent solutions of such inequalities on number line diagrams.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 3: Represent and analyze quantitative relationships between dependent and independent variables.

Major Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
	Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. For example, in a problem involving motion at constant speed, list and graph ordered pairs of distances and times, and write the equation $d = 65t$ to represent the relationship between distance and time.

Domain: GEOMETRY

Cluster 1: Solve real-world and mathematical problems involving area, surface area, and volume.

Supporting Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
	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.

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	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.6.G.1.2	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 $V = I w h$ 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. <i>Cognitive Complexity:</i> Level 2: Basic Application of Skills & Concepts
MAFS.6.G.1.3	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.6.G.1.4	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Domain: STATISTICS & PROBABILITY

Cluster 1: Develop understanding of statistical variability.

Additional Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
MAFS.6.SP.1.1	Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers. For example, "How old am I?" is not a statistical question, but "How old are the students in my school?" is a statistical question because one anticipates variability in students' ages.
	Cognitive Complexity: Level 1: Recall
MAFS.6.SP.1.2	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.6.SP.1.3	Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number.
	Cognitive Complexity: Level 1: Recall

Cluster 2: Summarize and describe distributions.

Additional Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
MAFS.6.SP.2.4	Display numerical data in plots on a number line, including dot plots, histograms, and

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	box plots.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.6.SP.2.5	Summarize numerical data sets in relation to their context, such as by:
	 a. Reporting the number of observations. b. Describing the nature of the attribute under investigation, including how it was measured and its units of measurement. c. Giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered. d. Relating the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

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GRADE: 7

Domain: RATIOS & PROPORTIONAL RELATIONSHIPS

Cluster 1: Analyze proportional relationships and use them to solve real-world and mathematical problems.

Major Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
MAFS.7.RP.1.1	Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units. For example, if a person walks 1/2 mile in each 1/4 hour, compute the unit rate as the complex fraction 1/2/1/4 miles per hour, equivalently 2 miles per hour. Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.7.RP.1.2	Recognize and represent proportional relationships between quantities.
	 a. Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin. b. Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships. c. Represent proportional relationships by equations. For example, if total cost t is proportional to the number n of items purchased at a constant price p, the relationship between the total cost and the number of items can be expressed as t = pn. d. Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points (0, 0) and (1, r) where r is the unit rate.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.7.RP.1.3	Use proportional relationships to solve multistep ratio and percent problems. Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Domain: THE NUMBER SYSTEM

Cluster 1: Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.

Major Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE

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MAFS.7.NS.1.1	 Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram. a. Describe situations in which opposite quantities combine to make 0. For example, a hydrogen atom has 0 charge because its two constituents are oppositely charged. b. Understand p + q as the number located a distance q from p, in the positive or negative direction depending on whether q is positive or negative. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts. c. Understand subtraction of rational numbers as adding the additive inverse, p - q = p + (-q). Show that the distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real-world contexts. d. Apply properties of operations as strategies to add and subtract rational numbers.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.7.NS.1.2	 Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers. a. Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as (-1)(-1) = 1 and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts. b. 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. If p and q are integers, then -(p/q) = (-p)/q = p/(-q). Interpret quotients of rational numbers by describing real-world contexts. c. Apply properties of operations as strategies to multiply and divide rational numbers. d. Convert a rational number to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats.
MAFS.7.NS.1.3	Solve real-world and mathematical problems involving the four operations with rational
	numbers. <u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts

Domain: EXPRESSIONS & EQUATIONS

Cluster 1: Use properties of operations to generate equivalent expressions.

Major Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
MAFS.7.EE.1.1	Apply properties of operations as strategies to add, subtract, factor, and expand linear

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	expressions with rational coefficients.
	Cognitive Complexity: Level 1: Recall
MAFS.7.EE.1.2	Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related. For example, $a + 0.05a = 1.05a$ means that "increase by 5%" is the same as "multiply by 1.05."
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 2: Solve real-life and mathematical problems using numerical and algebraic expressions and equations.

Major Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
MAFS.7.EE.2.3	Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies. For example: If a woman making \$25 an hour gets a 10% raise, she will make an additional 1/10 of her salary an hour, or \$2.50, for a new salary of \$27.50. If you want to place a towel bar 9 3/4 inches long in the center of a door that is 27 1/2 inches wide, you will need to place the bar about 9 inches from each edge; this estimate can be used as a check on the exact computation.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.7.EE.2.4	 Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities. a. Solve word problems leading to equations of the form px + q = r and p(x + q) = r, where p, q, and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. <i>For example, the perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width?</i> b. Solve word problems leading to inequalities of the form px + q > r or px + q < r, where p, q, and r are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem. <i>For example: As a salesperson, you are paid \$50 per week plus \$3 per sale. This week you want your pay to be at least \$100. Write an inequality for the number of sales you need to make, and describe the solutions.</i>

Domain: GEOMETRY

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Cluster 1: Draw, construct, and describe geometrical figures and describe the relationships between them.

Additional Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
MAFS.7.G.1.1	Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.7.G.1.2	Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.7.G.1.3	Describe the two-dimensional figures that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 2: Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.

Additional Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
MAFS.7.G.2.4	Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.7.G.2.5	Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.7.G.2.6	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Domain: STATISTICS & PROBABILITY

Cluster 1: Use random sampling to draw inferences about a population.

Supporting Cluster

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STANDARD CODE	STANDARD
	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. <i>Cognitive Complexity:</i> Level 2: Basic Application of Skills & Concepts
	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. For example, estimate the mean word length in a book by randomly sampling words from the book; predict the winner of a school election based on randomly sampled survey data. Gauge how far off the estimate or prediction might be.

Cluster 2: Draw informal comparative inferences about two populations.

Additional Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
MAFS.7.SP.2.3	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.7.SP.2.4	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.

Cluster 3: Investigate chance processes and develop, use, and evaluate probability models.

Supporting Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
	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

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	indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event.
	Cognitive Complexity: Level 1: Recall
MAFS.7.SP.3.6	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. <i>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.</i>
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.7.SP.3.7	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.
	 a. 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. b. 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?
	Constitute Complexity I evel 2: Strategie Thinking & Complex Decoming
MAFS.7.SP.3.8	<u>Cognitive Complexity:</u> Level 3: Strategic Thinking & Complex Reasoning Find probabilities of compound events using organized lists, tables, tree diagrams, and
MAP5.7.5P.3.0	simulation.
	 a. 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. b. 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. c. Design and use a simulation to generate frequencies for compound events. <i>For example, use random digits as a simulation tool to approximate the answer to the question: If 40% of donors have type A blood, what is the probability that it will take at least 4 donors to find one with type A blood?</i>
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

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GRADE: 8

Domain: THE NUMBER SYSTEM

Cluster 1: Know that there are numbers that are not rational, and approximate them by rational numbers.

Supporting Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
MAFS.8.NS.1.1	Know that numbers that are not rational are called irrational. Understand informally 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.
MAFS.8.NS.1.2	Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions (e.g., π^2). For example, by truncating the decimal expansion of $\sqrt{2}$, show that $\sqrt{2}$ is between 1 and 2, then between 1.4 and 1.5, and explain how to continue on to get better approximations.

Domain: EXPRESSIONS & EQUATIONS

Cluster 1: Work with radicals and integer exponents.

Major Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
MAFS.8.EE.1.1	Know and apply the properties of integer exponents to generate equivalent numerical expressions. For example, $3^2 \times 3^{-5} = 3^{-3} = 1/3^3 = 1/27$ Cognitive Complexity: Level 1: Recall
MAFS.8.EE.1.2	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. <u>Cognitive Complexity:</u> Level 1: Recall
MAFS.8.EE.1.3	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 $\times 10^8$ and the population of the world as 7 $\times 10^9$, and determine that the world population is more than 20 times larger.

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	Cognitive Complexity: Level 1: Recall
MAFS.8.EE.1.4	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.

Cluster 2: Understand the connections between proportional relationships, lines, and linear equations.

Major Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
MAFS.8.EE.2.5	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.8.EE.2.6	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 3: Analyze and solve linear equations and pairs of simultaneous linear equations.

Major Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
MAFS.8.EE.3.7	Solve linear equations in one variable.
	 a. 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). b. Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

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MAFS.8.EE.3.8	Analyze and solve pairs of simultaneous linear equations.
	 a. 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. b. Solve systems of two linear equations in two variables algebraically, and estimate solutions by graphing the equations. Solve simple cases by inspection. For example, 3x + 2y = 5 and 3x + 2y = 6 have no solution because 3x + 2y cannot simultaneously be 5 and 6. c. Solve real-world and mathematical problems leading to two linear equations in two variables. For example, given coordinates for two pairs of points, determine whether the line through the first pair of points intersects the line through the second pair.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Domain: FUNCTIONS

Cluster 1: Define, evaluate, and compare functions.

Major Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
MAFS.8.F.1.1	Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.8.F.1.2	Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). For example, given a linear function represented by a table of values and a linear function represented by an algebraic expression, determine which function has the greater rate of change.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.8.F.1.3	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. For example, the function $A = s^2$ giving the area of a square as a function of its side length is not linear because its graph contains the points (1,1), (2,4) and (3,9), which are not on a straight line.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 2: Use functions to model relationships between quantities.

Major Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
MAFS.8.F.2.4	Construct a function to model a linear relationship between two quantities. Determine

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	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. <u>Cognitive Complexity:</u> Level 3: Strategic Thinking & Complex Reasoning
MAFS.8.F.2.5	Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally. <u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts

Domain: GEOMETRY

Cluster 1: Understand congruence and similarity using physical models, transparencies, or geometry software.

Major Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
MAFS.8.G.1.1	Verify experimentally the properties of rotations, reflections, and translations:
	 Lines are taken to lines, and line segments to line segments of the same length.
	b. Angles are taken to angles of the same measure.c. Parallel lines are taken to parallel lines.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.8.G.1.2	Understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that exhibits the congruence between them.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.8.G.1.3	Describe the effect of dilations, translations, rotations, and reflections on two- dimensional figures using coordinates.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.8.G.1.4	Understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations; given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.8.G.1.5	Use informal arguments to establish facts about the angle sum and exterior angle of triangles, about the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles. For example, arrange three copies of the same triangle so that the sum of the three angles appears to form a line, and give an argument in terms of transversals why this is so.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

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Cluster 2: Understand and apply the Pythagorean Theorem.

Major Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
MAFS.8.G.2.6	Explain a proof of the Pythagorean Theorem and its converse.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.8.G.2.7	Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.8.G.2.8	Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.
	Cognitive Complexity: Level 1: Recall

Cluster 3: Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres.

Additional Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
	Know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems. <i>Cognitive Complexity:</i> Level 2: Basic Application of Skills & Concepts

Domain: STATISTICS & PROBABILITY

Cluster 1: Investigate patterns of association in bivariate data.

Supporting Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
	Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

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MAFS.8.SP.1.2	Know that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line. <u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts
MAFS.8.SP.1.3	Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept. For example, in a linear model for a biology experiment, interpret a slope of 1.5 cm/hr as meaning that an additional hour of sunlight each day is associated with an additional 1.5 cm in mature plant height.
MAFS.8.SP.1.4	Understand that patterns of association can also be seen in bivariate categorical data by displaying frequencies and relative frequencies in a two-way table. 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. <i>For example, collect data from students in your class on whether or not they have a curfew on school nights and whether or not they have assigned chores at home. Is there evidence that those who have a curfew also tend to have chores?</i>

GRADE: 912

Domain: NUMBER & QUANTITY: THE REAL NUMBER SYSTEM

Cluster 1: Extend the properties of exponents to rational exponents.

Algebra 2 - Major Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
MAFS.912.N-RN.1.1	Explain how the definition of the meaning of rational exponents follows from extending the properties of integer exponents to those values, allowing for a notation for radicals in terms of rational exponents. For example, we define $5^{\sqrt{3}}$ to be the cube root of 5 because we want $(5^{\sqrt{3}})^3 = 5^{(\sqrt{3})3}$ to hold, so $(5^{\sqrt{3}})^3$ must equal 5. Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.N-RN.1.2	Rewrite expressions involving radicals and rational exponents using the properties of exponents. <u>Cognitive Complexity:</u> Level 1: Recall

Cluster 2: Use properties of rational and irrational numbers.

Algebra 1 - Additional Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
	Explain why the sum or product of two rational numbers is rational; that the sum of a rational number and an irrational number is irrational; and that the product of a nonzero rational number and an irrational number is irrational. <i>Cognitive Complexity:</i> Level 2: Basic Application of Skills & Concepts

Domain: NUMBER & QUANTITY: QUANTITIES

Cluster 1: Reason quantitatively and use units to solve problems.

Algebra 1 - Supporting Cluster Algebra 2 - Supporting Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

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STANDARD CODE	STANDARD
MAFS.912.N-Q.1.1	Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.N-Q.1.2	Define appropriate quantities for the purpose of descriptive modeling.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.N-Q.1.3	Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Domain: NUMBER & QUANTITY: THE COMPLEX NUMBER SYSTEM

Cluster 1: Perform arithmetic operations with complex numbers.

Algebra 2 - Additional Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
MAFS.912.N-CN.1.1	Know there is a complex number i such that $i^2 = -1$, and every complex number has the form a + bi with a and b real.
	Cognitive Complexity: Level 1: Recall
MAFS.912.N-CN.1.2	Use the relation $i^2 = -1$ and the commutative, associative, and distributive properties to add, subtract, and multiply complex numbers.
	Cognitive Complexity: Level 1: Recall
MAFS.912.N-CN.1.3	Find the conjugate of a complex number; use conjugates to find moduli and quotients of complex numbers.
	Cognitive Complexity: Level 1: Recall

Cluster 2: Represent complex numbers and their operations on the complex plane.

STANDARD CODE	STANDARD
MAFS.912.N-CN.2.4	Represent complex numbers on the complex plane in rectangular and polar form (including real and imaginary numbers), and explain why the rectangular and polar forms of a given complex number represent the same number. <u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts
MAFS.912.N-CN.2.5	Represent addition, subtraction, multiplication, and conjugation of complex numbers geometrically on the complex plane; use properties of this representation for computation. For example, $(-1 + \sqrt{3} i)^3 = 8$ because $(-1 + \sqrt{3} i)$ has modulus 2 and

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	argument 120°.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.N-CN.2.6	Calculate the distance between numbers in the complex plane as the modulus of the difference, and the midpoint of a segment as the average of the numbers at its endpoints.
	Cognitive Complexity: Level 1: Recall

Cluster 3: Use complex numbers in polynomial identities and equations.

Algebra 2 - Additional Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
MAFS.912.N-CN.3.7	Solve quadratic equations with real coefficients that have complex solutions.
	Cognitive Complexity: Level 1: Recall
MAFS.912.N-CN.3.8	Extend polynomial identities to the complex numbers. For example, rewrite $x^2 + 4$ as $(x + 2i)(x - 2i)$.
	Cognitive Complexity: Level 1: Recall
MAFS.912.N-CN.3.9	Know the Fundamental Theorem of Algebra; show that it is true for quadratic polynomials.
	Cognitive Complexity: Level 1: Recall

Domain: NUMBER & QUANTITY: VECTOR & MATRIX QUANTITIES

Cluster 1: Represent and model with vector quantities.

STANDARD CODE	STANDARD
MAFS.912.N-VM.1.1	Recognize vector quantities as having both magnitude and direction. Represent vector quantities by directed line segments, and use appropriate symbols for vectors and their magnitudes (e.g., <i>v</i> , /v/, v , v).
	Cognitive Complexity: Level 1: Recall
MAFS.912.N-VM.1.2	Find the components of a vector by subtracting the coordinates of an initial point from the coordinates of a terminal point.
	Cognitive Complexity: Level 1: Recall
MAFS.912.N-VM.1.3	Solve problems involving velocity and other quantities that can be represented by vectors.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 2: Perform operations on vectors.

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STANDARD CODE	STANDARD
MAFS.912.N-VM.2.4	 Add and subtract vectors. a. Add vectors end-to-end, component-wise, and by the parallelogram rule. Understand that the magnitude of a sum of two vectors is typically not the sum of the magnitudes. b. Given two vectors in magnitude and direction form, determine the magnitude and direction of their sum. c. Understand vector subtraction v – w as v + (–w), where –w is the additive inverse of w, with the same magnitude as w and pointing in the opposite direction. Represent vector subtraction graphically by connecting the tips in the appropriate order, and perform vector subtraction component-wise.
MAFS.912.N-VM.2.5	<u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts Multiply a vector by a scalar. a. Represent scalar multiplication graphically by scaling vectors and possibly
	 reversing their direction; perform scalar multiplication component-wise, e.g., as c^{(V}x[*], V_y) = (cV_x, cV_y). b. Compute the magnitude of a scalar multiple cv using cv = c v. Compute the direction of cv knowing that when c v ≠ 0, the direction of cv is either along v (for c > 0) or against v (for c < 0).
	Cognitive Complexity: Level 1: Recall

Cluster 3: Perform operations on matrices and use matrices in applications.	
STANDARD CODE	STANDARD
MAFS.912.N-VM.3.10	Understand that the zero and identity matrices play a role in matrix addition and multiplication similar to the role of 0 and 1 in the real numbers. The determinant of a square matrix is nonzero if and only if the matrix has a multiplicative inverse.
MAFS.912.N-VM.3.11	Multiply a vector (regarded as a matrix with one column) by a matrix of suitable dimensions to produce another vector. Work with matrices as transformations of vectors.
MAFS.912.N-VM.3.12	Work with 2 × 2 matrices as transformations of the plane, and interpret the absolute value of the determinant in terms of area. <u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts
MAFS.912.N-VM.3.6	Use matrices to represent and manipulate data, e.g., to represent payoffs or incidence relationships in a network. <u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts
MAFS.912.N-VM.3.7	Multiply matrices by scalars to produce new matrices, e.g., as when all of the payoffs in

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	a game are doubled.
	Cognitive Complexity: Level 1: Recall
MAFS.912.N-VM.3.8	Add, subtract, and multiply matrices of appropriate dimensions.
	Cognitive Complexity: Level 1: Recall
MAFS.912.N-VM.3.9	Understand that, unlike multiplication of numbers, matrix multiplication for square matrices is not a commutative operation, but still satisfies the associative and distributive properties.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Domain: ALGEBRA: SEEING STRUCTURE IN EXPRESSIONS

Cluster 1: Interpret the structure of expressions

Algebra 1 - Major Cluster Algebra 2 - Major Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
MAFS.912.A-SSE.1.1	Interpret expressions that represent a quantity in terms of its context.
	 a. Interpret parts of an expression, such as terms, factors, and coefficients. b. Interpret complicated expressions by viewing one or more of their parts as a single entity. For example, interpret P(1+r)ⁿ as the product of P and a factor not depending on P.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.A-SSE.1.2	Use the structure of an expression to identify ways to rewrite it. For example, see $x^4 - y^4$ as $(x^2)^2 - (y^2)^2$, thus recognizing it as a difference of squares that can be factored as $(x^2 - y^2)(x^2 + y^2)$.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 2: Write expressions in equivalent forms to solve problems

Algebra 1 - Supporting Cluster Algebra 2 - Major Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
	Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.

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	 a. Factor a quadratic expression to reveal the zeros of the function it defines. b. Complete the square in a quadratic expression to reveal the maximum or minimum value of the function it defines. c. Use the properties of exponents to transform expressions for exponential functions. For example the expression 1.15^t can be rewritten as (1.15^{1/12})¹²t ≈ 1.012^{12t} to reveal the approximate equivalent monthly interest rate if the annual rate is 15%.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.A-SSE.2.4	Derive the formula for the sum of a finite geometric series (when the common ratio is not 1), and use the formula to solve problems. <i>For example, calculate mortgage payments</i> .
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Domain: ALGEBRA: ARITHMETIC WITH POLYNOMIALS & RATIONAL EXPRESSIONS

Cluster 1: Perform arithmetic operations on polynomials

Algebra 1 - Major Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
	Understand that polynomials form a system analogous to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication; add, subtract, and multiply polynomials. <u>Cognitive Complexity:</u> Level 1: Recall

Cluster 2: Understand the relationship between zeros and factors of polynomials

Algebra 1 - Supporting Cluster Algebra 2 - Major Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD
Know and apply the Remainder Theorem: For a polynomial $p(x)$ and a number a, the remainder on division by $x - a$ is $p(a)$, so $p(a) = 0$ if and only if $(x - a)$ is a factor of $p(x)$. <i>Cognitive Complexity:</i> Level 1: Recall
Identify zeros of polynomials when suitable factorizations are available, and use the zeros to construct a rough graph of the function defined by the polynomial.

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<u>Cognitive Complexity:</u> Level 1: Recall

Cluster 3: Use polynomial identities to solve problems

Algebra 2 - Additional Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
	Prove polynomial identities and use them to describe numerical relationships. For example, the polynomial identity $(x^2 + y^2)^2 = (x^2 - y^2)^2 + (2xy)^2$ can be used to generate Pythagorean triples. <u>Cognitive Complexity:</u> Level 1: Recall
	Know and apply the Binomial Theorem for the expansion of $(x + y)^n$ in powers of x and y for a positive integer n, where x and y are any numbers, with coefficients determined for example by Pascal's Triangle. <u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts

Cluster 4: Rewrite rational expressions

Algebra 2 - Supporting Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
MAFS.912.A-APR.4.6	Rewrite simple rational expressions in different forms; write $a(x)/b(x)$ in the form $q(x) + r(x)/b(x)$, where $a(x)$, $b(x)$, $q(x)$, and $r(x)$ are polynomials with the degree of $r(x)$ less than the degree of $b(x)$, using inspection, long division, or, for the more complicated examples, a computer algebra system.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.A-APR.4.7	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Domain: ALGEBRA: CREATING EQUATIONS

Cluster 1: Create equations that describe numbers or relationships

Algebra 1 - Major Cluster Algebra 2 - Supporting Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the

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major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
MAFS.912.A-CED.1.1	Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational, absolute, and exponential functions. <u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts
MAFS.912.A-CED.1.2	Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales. <u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts
MAFS.912.A-CED.1.3	Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or non-viable options in a modeling context. For example, represent inequalities describing nutritional and cost constraints on combinations of different foods. <u>Cognitive Complexity:</u> Level 3: Strategic Thinking & Complex Reasoning
MAFS.912.A-CED.1.4	Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. For example, rearrange Ohm's law $V = IR$ to highlight resistance R. Cognitive Complexity: Level 1: Recall

Domain: ALGEBRA: REASONING WITH EQUATIONS & INEQUALITIES

Cluster 1: Understand solving equations as a process of reasoning and explain the reasoning

Algebra 1 - Major Cluster Algebra 2 - Major Cluster

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STANDARD CODE	STANDARD
MAFS.912.A-REI.1.1	Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
MAFS.912.A-REI.1.2	Solve simple rational and radical equations in one variable, and give examples showing how extraneous solutions may arise.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Cluster 2: Solve equations and inequalities in one variable

Algebra 1 - Major Cluster Algebra 2 - Supporting Cluster

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STANDARD CODE	STANDARD
MAFS.912.A-REI.2.3	Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.A-REI.2.4	 Solve quadratic equations in one variable. a. Use the method of completing the square to transform any quadratic equation in x into an equation of the form (x – p)² = q that has the same solutions. Derive the quadratic formula from this form. b. Solve quadratic equations by inspection (e.g., for x² = 49), taking square roots, completing the square, the quadratic formula and factoring, as appropriate to the initial form of the equation. Recognize when the quadratic formula gives complex solutions and write them as a ± bi for real numbers a and b. Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 3: Solve systems of equations

Algebra 1 - Additional Cluster Algebra 2 - Additional Cluster

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STANDARD CODE	STANDARD
MAFS.912.A-REI.3.5	Prove that, given a system of two equations in two variables, replacing one equation by the sum of that equation and a multiple of the other produces a system with the same solutions.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
MAFS.912.A-REI.3.6	Solve systems of linear equations exactly and approximately (e.g., with graphs), focusing on pairs of linear equations in two variables.
	Cognitive Complexity: Level 1: Recall
MAFS.912.A-REI.3.7	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 $x^2 + y^2 = 3$.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.A-REI.3.8	Represent a system of linear equations as a single matrix equation in a vector variable.
	Cognitive Complexity: Level 1: Recall
MAFS.912.A-REI.3.9	Find the inverse of a matrix if it exists and use it to solve systems of linear equations (using technology for matrices of dimension 3×3 or greater).
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

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Cluster 4: Represent and solve equations and inequalities graphically

Algebra 1 - Major Cluster Algebra 2 - Major Cluster

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STANDARD CODE	STANDARD
MAFS.912.A-REI.4.10	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).
	Cognitive Complexity: Level 1: Recall
MAFS.912.A-REI.4.11	Explain why the x-coordinates of the points where the graphs of the equations $y = f(x)$ and $y = g(x)$ intersect are the solutions of the equation $f(x) = g(x)$; find the solutions approximately, e.g., using technology to graph the functions, make tables of values, or find successive approximations. Include cases where $f(x)$ and/or $g(x)$ are linear, polynomial, rational, absolute value, exponential, and logarithmic functions.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.A-REI.4.12	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.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Domain: FUNCTIONS: INTERPRETING FUNCTIONS

Cluster 1: Understand the concept of a function and use function notation

Algebra 1 - Major Cluster

Algebra 2 - Supporting Cluster

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STANDARD CODE	STANDARD
MAFS.912.F-IF.1.1	Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. If f is a function and x is an element of its domain, then $f(x)$ denotes the output of f corresponding to the input x. The graph of f is the graph of the equation $y = f(x)$.
	<u>Cognitive Complexity:</u> Level 1: Recall
MAFS.912.F-IF.1.2	Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.F-IF.1.3	Recognize that sequences are functions, sometimes defined recursively, whose domain is a subset of the integers. For example, the Fibonacci sequence is defined recursively by $f(0) = f(1) = 1$, $f(n+1) = f(n) + f(n-1)$ for $n \ge 1$.

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Cognitive Complexity: Level 2: Basic Application of Skills & Concepts	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 2: Interpret functions that arise in applications in terms of the context

Algebra 1 - Major Cluster Algebra 2 - Major Cluster

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STANDARD CODE	STANDARD
MAFS.912.F-IF.2.4	For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. <i>Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity.</i>
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.F-IF.2.5	Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. For example, if the function $h(n)$ gives the number of personhours it takes to assemble n engines in a factory, then the positive integers would be an appropriate domain for the function.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.F-IF.2.6	Calculate and interpret the average rate of change of a function (presented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 3: Analyze functions using different representations

Algebra 1 - Supporting Cluster Algebra 2 - Supporting Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
MAFS.912.F-IF.3.7	Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases.
	a. Graph linear and quadratic functions and show intercepts, maxima, and minima.
	b. Graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions.
	c. Graph polynomial functions, identifying zeros when suitable factorizations are available, and showing end behavior.
	d. Graph rational functions, identifying zeros and asymptotes when suitable factorizations are available, and showing end behavior.

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	 e. Graph exponential and logarithmic functions, showing intercepts and end behavior, and trigonometric functions, showing period, midline, and amplitude, and using phase shift. <u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts
MAFS.912.F-IF.3.8	 Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function. a. Use the process of factoring and completing the square in a quadratic function to show zeros, extreme values, and symmetry of the graph, and interpret these in terms of a context. b. Use the properties of exponents to interpret expressions for exponential functions. <i>For example, identify percent rate of change in functions such as y</i> = (1.02)^t, <i>y</i> = (0.97)^t, <i>y</i> = (1.01)^{12t}, <i>y</i> = (1.2)^{t/10}, and classify them as representing exponential growth or decay.
MAFS.912.F-IF.3.9	Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). For example, given a graph of one quadratic function and an algebraic expression for another, say which has the larger maximum.

Domain: FUNCTIONS: BUILDING FUNCTIONS

Cluster 1: Build a function that models a relationship between two quantities

Algebra 1 - Supporting Cluster Algebra 2 - Major Cluster

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STANDARD CODE	STANDARD
MAFS.912.F-BF.1.1	Write a function that describes a relationship between two quantities.
	 Determine an explicit expression, a recursive process, or steps for calculation from a context.
	b. Combine standard function types using arithmetic operations. For example, build a function that models the temperature of a cooling body by adding a constant function to a decaying exponential, and relate these functions to the model.
	c. Compose functions. For example, if $T(y)$ is the temperature in the atmosphere as a function of height, and $h(t)$ is the height of a weather balloon as a function of time, then $T(h(t))$ is the temperature at the location of the weather balloon as a function of time.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
MAFS.912.F-BF.1.2	Write arithmetic and geometric sequences both recursively and with an explicit formula,

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use them to model situations, and translate between the two forms.
Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 2: Build new functions from existing functions

Algebra 1 - Additional Cluster Algebra 2 - Additional Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
MAFS.912.F-BF.2.3	Identify the effect on the graph of replacing $f(x)$ by $f(x) + k$, $k f(x)$, $f(kx)$, and $f(x + k)$ for specific values of k (both positive and negative); find the value of k given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. <i>Include recognizing even and odd functions from their graphs and algebraic expressions for them.</i>
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.F-BF.2.4	 Find inverse functions. a. Solve an equation of the form f(x) = c for a simple function f that has an inverse and write an expression for the inverse. For example, f(x) =2 x³ or f(x) = (x+1)/(x-1) for x ≠ 1. b. Verify by composition that one function is the inverse of another. c. Read values of an inverse function from a graph or a table, given that the function has an inverse. d. Produce an invertible function from a non-invertible function by restricting the domain.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.F-BF.2.5	Understand the inverse relationship between exponents and logarithms and use this relationship to solve problems involving logarithms and exponents. <u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts
MAFS.912.F-BF.2.a	Use the change of base formula.

Domain: FUNCTIONS: LINEAR, QUADRATIC, & EXPONENTIAL MODELS

Cluster 1: Construct and compare linear, quadratic, and exponential models and solve problems

Algebra 1 - Supporting Cluster Algebra 2 - Supporting Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
MAFS.912.F-LE.1.1	Distinguish between situations that can be modeled with linear functions and with
	exponential functions.

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 a. Prove that linear functions grow by equal differences over equal intervals, and that exponential functions grow by equal factors over equal intervals. b. Recognize situations in which one quantity changes at a constant rate per unit interval relative to another. c. Recognize situations in which a quantity grows or decays by a constant percent rate per unit interval relative to another.
Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table).
Observe using graphs and tables that a quantity increasing exponentially eventually exceeds a quantity increasing linearly, quadratically, or (more generally) as a polynomial function.
Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
For exponential models, express as a logarithm the solution to $ab^{ct} = d$ where a, c, and d are numbers and the base b is 2, 10, or e; evaluate the logarithm using technology. <u>Cognitive Complexity</u> : Level 2: Basic Application of Skills & Concepts

Cluster 2: Interpret expressions for functions in terms of the situation they model

Algebra 1 - Supporting Cluster Algebra 2 - Additional Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
MAFS.912.F-LE.2.5	Interpret the parameters in a linear or exponential function in terms of a context.
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	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Domain: FUNCTIONS: TRIGONOMETRIC FUNCTIONS

Cluster 1: Extend the domain of trigonometric functions using the unit circle

Algebra 2 - Additional Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
MAFS.912.F-TF.1.1	Understand radian measure of an angle as the length of the arc on the unit circle

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	subtended by the angle; Convert between degrees and radians. <u>Cognitive Complexity:</u> Level 1: Recall
MAFS.912.F-TF.1.2	Explain how the unit circle in the coordinate plane enables the extension of trigonometric functions to all real numbers, interpreted as radian measures of angles traversed counterclockwise around the unit circle.
MAFS.912.F-TF.1.3	Use special triangles to determine geometrically the values of sine, cosine, tangent for $\pi/3$, $\pi/4$ and $\pi/6$, and use the unit circle to express the values of sine, cosine, and tangent for $\pi-x$, $\pi+x$, and $2\pi-x$ in terms of their values for x, where x is any real number.
MAFS.912.F-TF.1.4	<u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts Use the unit circle to explain symmetry (odd and even) and periodicity of trigonometric
	functions. <u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts

Cluster 2: Model periodic phenomena with trigonometric functions

Algebra 2 - Additional Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
MAFS.912.F-TF.2.5	Choose trigonometric functions to model periodic phenomena with specified amplitude, frequency, and midline.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.F-TF.2.6	Understand that restricting a trigonometric function to a domain on which it is always increasing or always decreasing allows its inverse to be constructed.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.F-TF.2.7	Use inverse functions to solve trigonometric equations that arise in modeling contexts; evaluate the solutions using technology, and interpret them in terms of the context.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 3: Prove and apply trigonometric identities

Algebra 2 - Additional Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

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STANDARD CODE	STANDARD
	Prove the Pythagorean identity $\sin^2(\theta) + \cos^2(\theta) = 1$ and use it to calculate trigonometric ratios.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.F-TF.3.9	Prove the addition and subtraction, half-angle, and double-angle formulas for

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sine, cosine, and tangent and use these formulas to solve problems.
Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Domain: GEOMETRY: CONGRUENCE

Cluster 1: Experiment with transformations in the plane

Geometry - Supporting Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
MAFS.912.G-CO.1.1	Know precise definitions of angle, circle, perpendicular line, parallel line, and line segment, based on the undefined notions of point, line, distance along a line, and distance around a circular arc.
	<u>Cognitive Complexity:</u> Level 1: Recall
MAFS.912.G-CO.1.2	Represent transformations in the plane using, e.g., transparencies and geometry software; describe transformations as functions that take points in the plane as inputs and give other points as outputs. Compare transformations that preserve distance and angle to those that do not (e.g., translation versus horizontal stretch). <u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts
MAFS.912.G-CO.1.3	Given a rectangle, parallelogram, trapezoid, or regular polygon, describe the rotations
	and reflections that carry it onto itself. <u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts
MAFS.912.G-CO.1.4	Develop definitions of rotations, reflections, and translations in terms of angles, circles, perpendicular lines, parallel lines, and line segments.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
MAFS.912.G-CO.1.5	Given a geometric figure and a rotation, reflection, or translation, draw the transformed figure using, e.g., graph paper, tracing paper, or geometry software. Specify a sequence of transformations that will carry a given figure onto another.

Cluster 2: Understand congruence in terms of rigid motions

Geometry - Major Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
	Use geometric descriptions of rigid motions to transform figures and to predict the effect of a given rigid motion on a given figure; given two figures, use the definition of congruence in terms of rigid motions to decide if they are congruent.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
	Use the definition of congruence in terms of rigid motions to show that two triangles are congruent if and only if corresponding pairs of sides and corresponding pairs of angles

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	are congruent.
	Cognitive Complexity: Level 1: Recall
MAFS.912.G-CO.2.8	Explain how the criteria for triangle congruence (ASA, SAS, SSS, and Hypotenuse-Leg) follow from the definition of congruence in terms of rigid motions.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 3: Prove geometric theorems

Geometry - Major Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
MAFS.912.G-CO.3.9	Prove theorems about lines and angles; use theorems about lines and angles to solve problems. Theorems include: vertical angles are congruent; when a transversal crosses parallel lines, alternate interior angles are congruent and corresponding angles are congruent; points on a perpendicular bisector of a line segment are exactly those equidistant from the segment's endpoints.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
MAFS.912.G-CO.3.10	Prove theorems about triangles; use theorems about triangles to solve problems. Theorems include: measures of interior angles of a triangle sum to 180°; triangle inequality theorem; base angles of isosceles triangles are congruent; the segment joining midpoints of two sides of a triangle is parallel to the third side and half the length; the medians of a triangle meet at a point. Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
MAFS.912.G-CO.3.11	Prove theorems about parallelograms; use theorems about parallelograms to solve problems. Theorems include: opposite sides are congruent, opposite angles are congruent, the diagonals of a parallelogram bisect each other, and conversely, rectangles are parallelograms with congruent diagonals.

Cluster 4: Make geometric constructions

Geometry - Supporting Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
	Make formal geometric constructions with a variety of tools and methods (compass and straightedge, string, reflective devices, paper folding, dynamic geometric software, etc.). Copying a segment; copying an angle; bisecting a segment; bisecting an angle; constructing perpendicular lines, including the perpendicular bisector of a line segment; and constructing a line parallel to a given line through a point not on the line.

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	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.G-CO.4.13	Construct an equilateral triangle, a square, and a regular hexagon inscribed in a circle.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Domain: GEOMETRY: SIMILARITY, RIGHT TRIANGLES, & TRIGONOMETRY

Cluster 1: Understand similarity in terms of similarity transformations

Geometry - Major Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
MAFS.912.G-SRT.1.1	Verify experimentally the properties of dilations given by a center and a scale factor:
	 a. A dilation takes a line not passing through the center of the dilation to a parallel line, and leaves a line passing through the center unchanged. b. The dilation of a line segment is longer or shorter in the ratio given by the scale factor.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.G-SRT.1.2	Given two figures, use the definition of similarity in terms of similarity transformations to decide if they are similar; explain using similarity transformations the meaning of similarity for triangles as the equality of all corresponding pairs of angles and the proportionality of all corresponding pairs of sides.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.G-SRT.1.3	Use the properties of similarity transformations to establish the AA criterion for two triangles to be similar.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 2: Prove theorems involving similarity

Geometry - Major Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
MAFS.912.G-SRT.2.4	Prove theorems about triangles. <i>Theorems include: a line parallel to one side of a triangle divides the other two proportionally, and conversely; the Pythagorean Theorem proved using triangle similarity.</i> <i>Cognitive Complexity:</i> Level 3: Strategic Thinking & Complex Reasoning
MAFS.912.G-SRT.2.5	Use congruence and similarity criteria for triangles to solve problems and to prove relationships in geometric figures.

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Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Cluster 3: Define trigonometric ratios and solve problems involving right triangles

Geometry - Major Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
MAFS.912.G-SRT.3.6	Understand that by similarity, side ratios in right triangles are properties of the angles in the triangle, leading to definitions of trigonometric ratios for acute angles.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.G-SRT.3.7	Explain and use the relationship between the sine and cosine of complementary angles.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.G-SRT.3.8	Use trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problems.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 4: Apply trigonometry to general triangles

STANDARD CODE	STANDARD
MAFS.912.G-SRT.4.10	Prove the Laws of Sines and Cosines and use them to solve problems.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
MAFS.912.G-SRT.4.11	Understand and apply the Law of Sines and the Law of Cosines to find unknown measurements in right and non-right triangles (e.g., surveying problems, resultant forces).
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.G-SRT.4.9	Derive the formula $A = 1/2$ ab sin(C) for the area of a triangle by drawing an auxiliary line from a vertex perpendicular to the opposite side.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Domain: GEOMETRY: CIRCLES

Cluster 1: Understand and apply theorems about circles

Geometry - Additional Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE

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MAFS.912.G-C.1.1	Prove that all circles are similar.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.G-C.1.2	Identify and describe relationships among inscribed angles, radii, and chords. <i>Include</i> the relationship between central, inscribed, and circumscribed angles; inscribed angles on a diameter are right angles; the radius of a circle is perpendicular to the tangent where the radius intersects the circle.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.G-C.1.3	Construct the inscribed and circumscribed circles of a triangle, and prove properties of angles for a quadrilateral inscribed in a circle.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
MAFS.912.G-C.1.4	Construct a tangent line from a point outside a given circle to the circle.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 2: Find arc lengths and areas of sectors of circles

Geometry - Additional Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
	Derive using similarity the fact that the length of the arc intercepted by an angle is proportional to the radius, and define the radian measure of the angle as the constant of proportionality; derive the formula for the area of a sector.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Domain: GEOMETRY: EXPRESSING GEOMETRIC PROPERTIES WITH EQUATIONS

Cluster 1: Translate between the geometric description and the equation for a conic section

Geometry - Additional Cluster Algebra 2 - Additional Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
MAFS.912.G-GPE.1.1	Derive the equation of a circle of given center and radius using the Pythagorean Theorem; complete the square to find the center and radius of a circle given by an equation.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.G-GPE.1.2	Derive the equation of a parabola given a focus and directrix.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.G-GPE.1.3	Derive the equations of ellipses and hyperbolas given the foci and directrices.

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Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Cluster 2: Use coordinates to prove simple geometric theorems algebraically

Geometry - Major Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
MAFS.912.G-GPE.2.4	Use coordinates to prove simple geometric theorems algebraically. For example, prove or disprove that a figure defined by four given points in the coordinate plane is a rectangle; prove or disprove that the point $(1, \sqrt{3})$ lies on the circle centered at the origin and containing the point $(0, 2)$.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.G-GPE.2.5	Prove the slope criteria for parallel and perpendicular lines and use them to solve geometric problems (e.g., find the equation of a line parallel or perpendicular to a given line that passes through a given point).
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.G-GPE.2.6	Find the point on a directed line segment between two given points that partitions the segment in a given ratio.
	<u>Cognitive Complexity:</u> Level 1: Recall
MAFS.912.G-GPE.2.7	Use coordinates to compute perimeters of polygons and areas of triangles and rectangles, e.g., using the distance formula.
	Cognitive Complexity: Level 1: Recall

Domain: GEOMETRY: GEOMETRIC MEASUREMENT & DIMENSION

Cluster 1: Explain volume formulas and use them to solve problems

Geometry - Additional Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
	Give an informal argument for the formulas for the circumference of a circle, area of a circle, volume of a cylinder, pyramid, and cone. <i>Use dissection arguments, Cavalieri's principle, and informal limit arguments.</i>
MAFS.912.G-GMD.1.2	Give an informal argument using Cavalieri's principle for the formulas for the volume of

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	a sphere and other solid figures.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
MAFS.912.G-GMD.1.3	Use volume formulas for cylinders, pyramids, cones, and spheres to solve problems.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 2: Visualize relationships between two-dimensional and three-dimensional objects

Geometry - Additional Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
	Identify the shapes of two-dimensional cross-sections of three-dimensional objects, and identify three-dimensional objects generated by rotations of two-dimensional objects. <u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts

Domain: GEOMETRY: MODELING WITH GEOMETRY

Cluster 1: Apply geometric concepts in modeling situations

Geometry - Major Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
MAFS.912.G-MG.1.1	Use geometric shapes, their measures, and their properties to describe objects (e.g., modeling a tree trunk or a human torso as a cylinder).
	Cognitive Complexity: Level 1: Recall
MAFS.912.G-MG.1.2	Apply concepts of density based on area and volume in modeling situations (e.g., persons per square mile, BTUs per cubic foot).
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.G-MG.1.3	Apply geometric methods to solve design problems (e.g., designing an object or structure to satisfy physical constraints or minimize cost; working with typographic grid systems based on ratios)
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Domain: STATISTICS & PROBABILITY: INTERPRETING CATEGORICAL & QUANTITATIVE DATA

Cluster 1: Summarize, represent, and interpret data on a single count or measurement variable

Algebra 1 - Additional Cluster

Algebra 2 - Additional Cluster

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STANDARD CODE	STANDARD
MAFS.912.S-ID.1.1	Represent data with plots on the real number line (dot plots, histograms, and box plots).
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.S-ID.1.2	Use statistics appropriate to the shape of the data distribution to compare center (median, mean) and spread (interquartile range, standard deviation) of two or more different data sets.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.S-ID.1.3	Interpret differences in shape, center, and spread in the context of the data sets, accounting for possible effects of extreme data points (outliers).
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.S-ID.1.4	Use the mean and standard deviation of a data set to fit it to a normal distribution and to estimate population percentages. Recognize that there are data sets for which such a procedure is not appropriate. Use calculators, spreadsheets, and tables to estimate areas under the normal curve.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 2: Summarize, represent, and interpret data on two categorical and quantitative variables

Algebra 1 - Supporting Cluster

Algebra 2 - Supporting Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
MAFS.912.S-ID.2.5	Summarize categorical data for two categories in two-way frequency tables. Interpret relative frequencies in the context of the data (including joint, marginal, and conditional relative frequencies). Recognize possible associations and trends in the data.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.S-ID.2.6	Represent data on two quantitative variables on a scatter plot, and describe how the variables are related.
	a. Fit a function to the data; use functions fitted to data to solve problems in the context of the data. Use given functions or choose a function suggested by the context. Emphasize linear, and exponential models.
	b. Informally assess the fit of a function by plotting and analyzing residuals.
	c. Fit a linear function for a scatter plot that suggests a linear association.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 3: Interpret linear models

Algebra 1 - Major Cluster

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STANDARD CODE	STANDARD
MAFS.912.S-ID.3.7	Interpret the slope (rate of change) and the intercept (constant term) of a linear model in the context of the data.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.S-ID.3.8	Compute (using technology) and interpret the correlation coefficient of a linear fit.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.S-ID.3.9	Distinguish between correlation and causation.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Domain: STATISTICS & PROBABILITY: MAKING INFERENCES & JUSTIFYING CONCLUSIONS

Cluster 1: Understand and evaluate random processes underlying statistical experiments

Algebra 2 - Supporting Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
MAFS.912.S-IC.1.1	Understand statistics as a process for making inferences about population parameters based on a random sample from that population.
	Cognitive Complexity: Level 1: Recall
MAFS.912.S-IC.1.2	Decide if a specified model is consistent with results from a given data-generating process, e.g., using simulation. For example, a model says a spinning coin falls heads up with probability 0.5. Would a result of 5 tails in a row cause you to question the model?
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 2: Make inferences and justify conclusions from sample surveys, experiments, and observational studies

Algebra 2 - Major Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
	Recognize the purposes of and differences among sample surveys, experiments, and observational studies; explain how randomization relates to each. <u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts
	Use data from a sample survey to estimate a population mean or proportion; develop a margin of error through the use of simulation models for random sampling. <u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts

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MAFS.912.S-IC.2.5	Use data from a randomized experiment to compare two treatments; use simulations to decide if differences between parameters are significant. <u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts
MAFS.912.S-IC.2.6	Evaluate reports based on data. <u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts

Domain: STATISTICS & PROBABILITY: CONDITIONAL PROBABILITY & THE RULES OF PROBABILITY

Cluster 1: Understand independence and conditional probability and use them to interpret data

Algebra 2 - Additional Cluster

Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

STANDARD CODE	STANDARD
MAFS.912.S-CP.1.1	Describe events as subsets of a sample space (the set of outcomes) using characteristics (or categories) of the outcomes, or as unions, intersections, or complements of other events ("or," "and," "not").
	<u>Cognitive Complexity:</u> Level 1: Recall
MAFS.912.S-CP.1.2	Understand that two events A and B are independent if the probability of A and B occurring together is the product of their probabilities, and use this characterization to determine if they are independent.
	Cognitive Complexity: Level 1: Recall
MAFS.912.S-CP.1.3	Understand the conditional probability of A given B as P(A and B)/P(B), and interpret independence of A and B as saying that the conditional probability of A given B is the same as the probability of A, and the conditional probability of B given A is the same as the probability of B.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.S-CP.1.4	Construct and interpret two-way frequency tables of data when two categories are associated with each object being classified. Use the two-way table as a sample space to decide if events are independent and to approximate conditional probabilities. For example, collect data from a random sample of students in your school on their favorite subject among math, science, and English. Estimate the probability that a randomly selected student from your school will favor science given that the student is in tenth grade. Do the same for other subjects and compare the results.
MAFS.912.S-CP.1.5	Recognize and explain the concepts of conditional probability and independence in
WIAL 0.912.0°CF.1.0	everyday language and everyday situations. For example, compare the chance of having lung cancer if you are a smoker with the chance of being a smoker if you have lung cancer.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 2: Use the rules of probability to compute probabilities of compound events in a uniform probability model

Algebra 2 - Additional Cluster

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Don't ... Sort clusters from Major to Supporting, and then teach them in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.

major nome of the grade	with the supporting clusters.	
STANDARD CODE	STANDARD	
MAFS.912.S-CP.2.6	Find the conditional probability of A given B as the fraction of B's outcomes that also belong to A, and interpret the answer in terms of the model.	
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts	
MAFS.912.S-CP.2.7	Apply the Addition Rule, $P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$, and interpret the answer in terms of the model.	
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts	
MAFS.912.S-CP.2.8	Apply the general Multiplication Rule in a uniform probability model, $P(A \text{ and } B) = P(A)P(B A) = P(B)P(A B)$, and interpret the answer in terms of the model.	
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts	
MAFS.912.S-CP.2.9	Use permutations and combinations to compute probabilities of compound events and solve problems.	
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts	

Domain: STATISTICS & PROBABILITY: USING PROBABILITY TO MAKE DECISIONS

Cluster 1: Calculate expected values and use them to solve problems

STANDARD CODE	STANDARD
MAFS.912.S-MD.1.1	Define a random variable for a quantity of interest by assigning a numerical value to each event in a sample space; graph the corresponding probability distribution using the same graphical displays as for data distributions.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.S-MD.1.2	Calculate the expected value of a random variable; interpret it as the mean of the probability distribution.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.S-MD.1.3	Develop a probability distribution for a random variable defined for a sample space in which theoretical probabilities can be calculated; find the expected value. For example, find the theoretical probability distribution for the number of correct answers obtained by guessing on all five questions of a multiple-choice test where each question has four choices, and find the expected grade under various grading schemes.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.S-MD.1.4	Develop a probability distribution for a random variable defined for a sample space in which probabilities are assigned empirically; find the expected value. For example, find a current data distribution on the number of TV sets per household in the United States, and calculate the expected number of sets per household. How many TV sets would you expect to find in 100 randomly selected households?
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 2: Use probability to evaluate outcomes of decisions

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STANDARD CODE	STANDARD
MAFS.912.S-MD.2.5	Weigh the possible outcomes of a decision by assigning probabilities to payoff values and finding expected values.
	 a. Find the expected payoff for a game of chance. For example, find the expected winnings from a state lottery ticket or a game at a fast-food restaurant. b. Evaluate and compare strategies on the basis of expected values. For example, compare a high-deductible versus a low-deductible automobile insurance policy using various, but reasonable, chances of having a minor or a major accident.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.S-MD.2.6	Use probabilities to make fair decisions (e.g., drawing by lots, using a random number generator).
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.S-MD.2.7	Analyze decisions and strategies using probability concepts (e.g., product testing, medical testing, pulling a hockey goalie at the end of a game).
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

GRADE: K12

Domain: MATHEMATICAL PRACTICE	
Cluster 1: Make sense of problems and persevere in solving them.	
STANDARD CODE	STANDARD
MAFS.K12.MP.1.1	Make sense of problems and persevere in solving them.
	Mathematically proficient students start by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints, relationships, and goals. They make conjectures about the form and meaning of the solution and plan a solution pathway rather than simply jumping into a solution attempt. They consider analogous problems, and try special cases and simpler forms of the original problem in order to gain insight into its solution. They monitor and evaluate their progress and change course if necessary. Older students might, depending on the context of the problem, transform algebraic expressions or change the viewing window on their graphing calculator to get the information they need. Mathematically proficient students can explain correspondences between equations, verbal descriptions, tables, and graphs or draw diagrams of important features and relationships, graph data, and search for regularity or trends. Younger students might rely on using concrete objects or pictures to help conceptualize and solve a problem. Mathematically proficient students check their answers to problems using a different method, and they continually ask themselves, "Does this make sense?" They can understand the approaches of others to solving complex problems and identify correspondences between different approaches.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

STANDARD ctly and quantitatively.
ctly and quantitatively.
proficient students make sense of quantities and their relationships in ns. They bring two complementary abilities to bear on problems tative relationships: the ability to decontextualize—to abstract a given present it symbolically and manipulate the representing symbols as if of their own, without necessarily attending to their referents—and the tualize, to pause as needed during the manipulation process in order to efferents for the symbols involved. Quantitative reasoning entails habits herent representation of the problem at hand; considering the units ing to the meaning of quantities, not just how to compute them; and xibly using different properties of operations and objects.

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Cluster 3: Construct viable arguments and critique the reasoning of others.

STANDARD CODE	STANDARD
MAFS.K12.MP.3.1	Construct viable arguments and critique the reasoning of others.
	Mathematically proficient students understand and use stated assumptions, definitions, and previously established results in constructing arguments. They make conjectures and build a logical progression of statements to explore the truth of their conjectures. They are able to analyze situations by breaking them into cases, and can recognize and use counterexamples. They justify their conclusions, communicate them to others, and respond to the arguments of others. They reason inductively about data, making plausible arguments that take into account the context from which the data arose. Mathematically proficient students are also able to compare the effectiveness of two plausible arguments, distinguish correct logic or reasoning from that which is flawed, and—if there is a flaw in an argument—explain what it is. Elementary students can construct arguments using concrete referents such as objects, drawings, diagrams, and actions. Such arguments can make sense and be correct, even though they are not generalized or made formal until later grades. Later, students learn to determine domains to which an argument applies. Students at all grades can listen or read the arguments of others, decide whether they make sense, and ask useful questions to clarify or improve the arguments.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Cluster 4: Model with mathematics.	
STANDARD CODE	STANDARD
MAFS.K12.MP.4.1	Model with mathematics.
	Mathematically proficient students can apply the mathematics they know to solve problems arising in everyday life, society, and the workplace. In early grades, this might be as simple as writing an addition equation to describe a situation. In middle grades, a student might apply proportional reasoning to plan a school event or analyze a problem in the community. By high school, a student might use geometry to solve a design problem or use a function to describe how one quantity of interest depends on another. Mathematically proficient students who can apply what they know are comfortable making assumptions and approximations to simplify a complicated situation, realizing that these may need revision later. They are able to identify important quantities in a practical situation and map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts and formulas. They can analyze those relationships mathematically to draw conclusions. They routinely interpret their mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

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Cluster 5: Use appropriate tools strategically.

STANDARD CODE	STANDARD
MAFS.K12.MP.5.1	Use appropriate tools strategically.
	Mathematically proficient students consider the available tools when solving a mathematical problem. These tools might include pencil and paper, concrete models, a ruler, a protractor, a calculator, a spreadsheet, a computer algebra system, a statistical package, or dynamic geometry software. Proficient students are sufficiently familiar with tools appropriate for their grade or course to make sound decisions about when each of these tools might be helpful, recognizing both the insight to be gained and their limitations. For example, mathematically proficient high school students analyze graphs of functions and solutions generated using a graphing calculator. They detect possible errors by strategically using estimation and other mathematical knowledge. When making mathematical models, they know that technology can enable them to visualize the results of varying assumptions, explore consequences, and compare predictions with data. Mathematically proficient students at various grade levels are able to identify relevant external mathematical resources, such as digital content located on a website, and use them to pose or solve problems. They are able to use technological tools to explore and deepen their understanding of concepts.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 6: Attend to precision.	
STANDARD CODE	STANDARD
MAFS.K12.MP.6.1	Attend to precision.
	Mathematically proficient students try to communicate precisely to others. They try to use clear definitions in discussion with others and in their own reasoning. They state the meaning of the symbols they choose, including using the equal sign consistently and appropriately. They are careful about specifying units of measure, and labeling axes to clarify the correspondence with quantities in a problem. They calculate accurately and efficiently, express numerical answers with a degree of precision appropriate for the problem context. In the elementary grades, students give carefully formulated explanations to each other. By the time they reach high school they have learned to examine claims and make explicit use of definitions.

Cluster 7: Look for and r	nake use of structure.		
STANDARD CODE		STANDARD	

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ſ	MAFS.K12.MP.7.1	Look for and make use of structure.
		Mathematically proficient students look closely to discern a pattern or structure. Young students, for example, might notice that three and seven more is the same amount as seven and three more, or they may sort a collection of shapes according to how many sides the shapes have. Later, students will see 7×8 equals the well remembered $7 \times 5 + 7 \times 3$, in preparation for learning about the distributive property. In the expression $x^2 + 9x + 14$, older students can see the 14 as 2×7 and the 9 as $2 + 7$. They recognize the significance of an existing line in a geometric figure and can use the strategy of drawing an auxiliary line for solving problems. They also can step back for an overview and shift perspective. They can see complicated things, such as some algebraic expressions, as single objects or as being composed of several objects. For example, they can see $5 - 3(x - y)^2$ as 5 minus a positive number times a square and use that to realize that its value cannot be more than 5 for any real numbers x and y.
		Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Cluster 8: Look for and	d express regularity in repeated reasoning.
STANDARD CODE	STANDARD
MAFS.K12.MP.8.1	Look for and express regularity in repeated reasoning.
	Mathematically proficient students notice if calculations are repeated, and look both for general methods and for shortcuts. Upper elementary students might notice when dividing 25 by 11 that they are repeating the same calculations over and over again, and conclude they have a repeating decimal. By paying attention to the calculation of slope as they repeatedly check whether points are on the line through (1, 2) with slope 3, middle school students might abstract the equation $(y - 2)/(x - 1) = 3$. Noticing the regularity in the way terms cancel when expanding $(x - 1)(x + 1)$, $(x - 1)(x^2 + x + 1)$, and $(x - 1)(x^3 + x^2 + x + 1)$ might lead them to the general formula for the sum of a geometric series. As they work to solve a problem, mathematically proficient students maintain oversight of the process, while attending to the details. They continually evaluate the reasonableness of their intermediate results.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

GRADE: 912 - CALCULUS

Standard 1: Limits and Continuity

Develop an understanding of the concept of limit by estimating limits graphically and numerically and evaluating limits analytically. Extend the idea of a limit to one-sided limits and limits at infinity. Use limits to define and understand the concept of continuity, decide whether a function

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heorems.	
BENCHMARK CODE	BENCHMARK
MAFS.912.C.1.1	Understand the concept of limit and estimate limits from graphs and tables of values.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.C.1.10	Decide if a function is continuous at a point. <u>Cognitive Complexity:</u> Level 3: Strategic Thinking & Complex Reasoning
MAFS.912.C.1.11	Find the types of discontinuities of a function.
WAI 3.312.0.1.11	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.C.1.12	Understand and use the Intermediate Value Theorem on a function over a closed
	interval.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.C.1.13	Understand and apply the Extreme Value Theorem: If f(x) is continuous over a closed interval, then f has a maximum and a minimum on the interval.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.C.1.2	Find limits by substitution.
	Cognitive Complexity: Level 1: Recall
MAFS.912.C.1.3	Find limits of sums, differences, products, and quotients.
	Cognitive Complexity: Level 1: Recall
MAFS.912.C.1.4	Find limits of rational functions that are undefined at a point.
	<u>Cognitive Complexity:</u> Level 1: Recall
MAFS.912.C.1.5	Find one-sided limits.
	<u>Cognitive Complexity:</u> Level 1: Recall
MAFS.912.C.1.6	Find limits at infinity.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.C.1.7	Decide when a limit is infinite and use limits involving infinity to describe asymptotic behavior.
	Cognitive Complexity: Level 2: Papie Application of Skills & Concepts
MAFS.912.C.1.8	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAP3.912.0.1.0	Find special limits such as $\overline{z = 0}$
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.C.1.9	Understand continuity in terms of limits.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning

Standard 2: Differential Calculus

Develop an understanding of the derivative as an instantaneous rate of change, using geometrical, numerical, and analytical methods. Use this definition to find derivatives of algebraic and transcendental functions and combinations of these functions (using, for example, sums, composites, and inverses). Find second and higher order derivatives. Understand and use the relationship between differentiability and continuity. Understand and apply the Mean

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Value Theorem. Find derivatives of algebraic, trigonometric, logarithmic, and exponential functions. Find derivatives of sums, products, and quotients, and composite and inverse functions. Find derivatives of higher order, and use logarithmic differentiation and the Mean Value Theorem.

BENCHMARK CODE	BENCHMARK
MAFS.912.C.2.1	Understand the concept of derivative geometrically, numerically, and analytically,
	and interpret the derivative as an instantaneous rate of change or as the slope of the tangent line.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
MAFS.912.C.2.10	Understand and use the relationship between differentiability and continuity.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.C.2.11	Understand and apply the Mean Value Theorem.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.C.2.2	State, understand, and apply the definition of derivative.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.C.2.3	Find the derivatives of functions, including algebraic, trigonometric, logarithmic,
	and exponential functions.
	Cognitive Complexity: Level 1: Recall
MAFS.912.C.2.4	Find the derivatives of sums, products, and quotients.
	Cognitive Complexity: Level 1: Recall
MAFS.912.C.2.5	Find the derivatives of composite functions using the Chain Rule.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.C.2.6	Find the derivatives of implicitly-defined functions.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.C.2.7	Find derivatives of inverse functions.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.C.2.8	Find second derivatives and derivatives of higher order.
	Cognitive Complexity: Level 1: Recall
MAFS.912.C.2.9	Find derivatives using logarithmic differentiation.
	Cognitive Complexity Level 2: Pasis Application of Skills & Conserts
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Standard 3: Applications of Derivatives

Apply knowledge about derivatives to find slopes of curves and the related tangent lines. Analyze and graph functions, finding where they are increasing or decreasing, their maximum and minimum points, their points of inflection, and their concavity. Solve optimization problems, find average and instantaneous rates of change (including velocities and accelerations), and model rates of change. Find slopes and equations of tangent lines, maximum and minimum points, and points of inflection. Solve optimization problems, and find rates of change.

BENCHMARK CODE	BENCHMARK
	Find the slope of a curve at a point, including points at which there are vertical tangent lines and no tangent lines.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

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MAFS.912.C.3.10	Find the velocity and acceleration of a particle moving in a straight line.
	Cognitive Complexity Level 2: Basis Application of Skills & Concents
MAFS.912.C.3.11	<u>Cognitive Complexity:</u> Level 2: Basic Application of Skills & Concepts Model rates of change, including related rates problems.
MAF5.912.C.3.11	model rates of change, including related rates problems.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
MAFS.912.C.3.12	Solve problems using the Newton-Raphson method.
	p
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
MAFS.912.C.3.2	Find an equation for the tangent line to a curve at a point and a local linear
	approximation.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.C.3.3	Decide where functions are decreasing and increasing. Understand the relationship between the increasing and decreasing behavior of <i>f</i> and the sign of
	relationship between the increasing and decreasing behavior of rand the sign of r
	1.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.C.3.4	Find local and absolute maximum and minimum points.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.C.3.5	Find points of inflection of functions. Understand the relationship between the
	concavity of f and the sign of f". Understand points of inflection as places where
	concavity changes.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.C.3.6	Use first and second derivatives to help sketch graphs. Compare the
100 12:0:0:0	corresponding characteristics of the graphs of f, f', and f".
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
MAFS.912.C.3.7	Use implicit differentiation to find the derivative of an inverse function.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.C.3.8	Solve optimization problems.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.C.3.9	Find average and instantaneous rates of change. Understand the instantaneous
11/1 0.012.0.0.0	rate of change as the limit of the average rate of change. Interpret a derivative as
	a rate of change in applications, including velocity, speed, and acceleration.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Standard 4: Integral Calculus

Understand that integration is used to find areas, and evaluate integrals using rectangular approximations. From this, develop the idea that integration is the inverse operation to differentiation — the Fundamental Theorem of Calculus. Use this result to find definite and indefinite integrals, including using the method of integration by substitution. Apply approximate methods, such as the Trapezoidal Rule, to find definite integrals. Define integrals using Riemann sums, use the Fundamental Theorem of Calculus to find integrals using antiderivatives, and use basic properties of integrals. Integrate by substitution, and find approximate integrals.

BENCHMARK CODE	BENCHMARK
MAFS.912.C.4.1	Use rectangle approximations to find approximate values of integrals.
	Cognitive Complexity: Level 1: Recall

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MAFS.912.C.4.2	Calculate the values of Riemann Sums over equal subdivisions using left, right, and midpoint evaluation points.
	and mupoint evaluation points.
	Cognitive Complexity: Level 1: Recall
MAFS.912.C.4.3	Interpret a definite integral as a limit of Riemann sums.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.C.4.4	Interpret a definite integral of the rate of change of a quantity over an interval as
	ð
	the change of the quantity over the interval. That is, $J_a f'(x)dx = f(b) - f(a)$
	(Fundamental Theorem of Calculus).
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
MAFS.912.C.4.5	Use the Fundamental Theorem of Calculus to evaluate definite and indefinite
111/1 0.012.0.1.0	integrals and to represent particular antiderivatives. Perform analytical and
	graphical analysis of functions so defined.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.C.4.6	Use these properties of definite integrals:
	• $\int_{\alpha}^{a} [f(x) + g(x)] dx = \int_{\alpha}^{a} f(x) dx + \int_{\alpha}^{a} g(x) dx$
	• $a[f(x) + g(x)]dx = a(x)dx + a(y)dx$
	[b [b
	• $\int_{a}^{b} k \circ f(x) dx = k \int_{a}^{b} f(x) dx$
	∫a
	• $\int_{a}^{a} f(x) dx = 0$
	b a
	$\int_{a}^{b} f(x) dx = - \int_{b}^{a} f(x) dx$
	fe fe
	• $a f(x)dx + b f(x)dx = a f(x)dx$
	• $\int_{a}^{b} \int_{a}^{c} f(x)dx = \int_{a}^{c} f(x)dx$ • If $f(x) \le g(x)$ on [a, b], then $\int_{a}^{b} f(x)dx \le \int_{a}^{b} g(x)dx$
	• If $f(x) \leq q(x)$ on [a, b], then $a f(x) dx \leq a q(x) dx$
	Cognitive Complexity: Level 1: Recall
MAFS.912.C.4.7	Use integration by substitution (or change of variable) to find values of integrals.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.C.4.8	Use Riemann Sums, the Trapezoidal Rule, and technology to approximate definite
	integrals of functions represented algebraically, geometrically, and by tables of values.
	values.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

Standard 5: Applications of Integration

Apply knowledge about integrals to finding velocities from accelerations, solving separable differential equations, and finding areas and volumes. Apply integration to model, and solve problems in physics, biology, economics, etc. Find velocity functions and position functions from their derivatives, solve separable differential equations, and use definite integrals to find areas and volumes.

BENCHMARK CODE	BENCHMARK
MAFS.912.C.5.1	Find specific antiderivatives using initial conditions, including finding velocity
	functions from acceleration functions, finding position functions from velocity

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	functions, and solving applications related to motion along a line.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.C.5.2	Solve separable differential equations, and use them in modeling.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.C.5.3	$\frac{dy}{dx} = ky$
	Solve differential equations of the form $\frac{dt}{dt}$ as applied to growth and decay
	problems.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.C.5.4	Use slope fields to display a graphic representation of the solution to a
	differential equation, and locate particular solutions to the equation.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.C.5.5	Use definite integrals to find the area between a curve and the x-axis or between
	two curves.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts
MAFS.912.C.5.6	Use definite integrals to find the average value of a function over a closed
MAI 3.912.0.3.0	interval.
	Cognitive Complexity: Level 1: Recall
MAFS.912.C.5.7	Use definite integrals to find the volume of a solid with known cross-sectional
	area, including solids of revolution.
	Cognitive Complexity: Level 3: Strategic Thinking & Complex Reasoning
MAFS.912.C.5.8	Apply integration to model, and solve problems in physical, biological, and social
	sciences.
	Cognitive Complexity: Level 2: Basic Application of Skills & Concepts

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