### California's COMMON CORE

Content Standards
First Grade

### California's

### **COMMON CORE**

Content Standards for ELA and Mathematics First Grade

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The following standards offer a focus for instruction each year and help ensure that students gain adequate exposure to a range of texts and tasks. Rigor is also infused through the requirement that students read increasingly complex texts through the grades. Students advancing through the grades are expected to meet each year's gradespecific standards and retain or further develop skills and understandings mastered in preceding grades.

### **LITERATURE**

### Key Ideas and Details

### K

- With prompting and support, ask and answer questions about key details in a text.
- 2. With prompting and support, retell familiar stories, including key details.
- 3. With prompting and support, identify characters, settings, and major events in a story.

### **1st**

- 1. Ask and answer questions about key details in a text.
- Retell stories, including key details, and demonstrate understanding of their central message or lesson.
- Describe characters in a story (e.g., their traits, motivations, or feelings) and explain how their actions contribute to the sequence of events.

### 2<sub>ND</sub>

- Ask and answer such questions as who, what,where, when, why, and how to demonstrate understanding of key details in a text
- 2. Recount stories, including fables and folktales from diverse cultures, and determine their central message, lesson, or moral.
- 3. Describe how characters in a story respond to major events and challenges.
- Anchor R.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.
- Anchor R.2 Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas. Anchor R.3 Analyze how and why individuals, events, or ideas develop and interact over the course of a text.

### Craft and Structure

- 4. Ask and answer questions about unknown words in a text.
- Recognize common types of texts (e.g., storybooks, poems, <u>fantasy, realistic</u> text).
- With prompting and support, name the author and illustrator of a story and define the role of each in telling the story.

- 4. Identify words and phrases in stories or poems that suggest feelings or appeal to the senses.
- Explain major differences between books that tell stories and books that give information, drawing on a wide reading of a range of text types.
- 6. Identify who is telling the story at various points in a text.
- Describe how words and phrases (e.g., regular beats, alliteration, rhymes, repeated lines) supply rhythm and meaning in a story, poem, or song.
- 5. Describe the overall structure of a story, including describing how the beginning introduces the story and the ending concludes the action.
- Acknowledge differences in the points of view of characters, including by speaking in a different voice for each character when reading dialogue aloud.
- Anchor R.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.
- Anchor R.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.
- Anchor R.6 Assess how point of view or purpose shapes the content and style of a text.

### Integration of Knowledge and Ideas

### K

- 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).
- 8. (Not applicable to literature)
- With prompting and support, compare and contrast the adventures and experiences of characters in familiar stories.

### **1st**

- Use illustrations and details in a story to describe its characters, setting, or events.
- 8. (Not applicable to literature)
- Compare and contrast the adventures and experiences of characters in stories.

### 2<sub>ND</sub>

- Use information gained from the illustrations and words in a print or digital text to demonstrate understanding of its characters, setting, or plot.
- 8. (Not applicable to literature)
- Compare and contrast two or more versions of the same story (e.g., Cinderella stories) by different authors or from different cultures.
- Anchor R.7 Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words.<sup>1</sup>
- Anchor R.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.
- Anchor R.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.

### Range of Reading & Level of Text Complexity

- Actively engage in group reading activities with purpose and understanding.
- a. Activate prior knowledge related to the information and events in texts.
   b. Use illustrations and context to make
- predictions about text.
- 10. With prompting and support, read prose and poetry of appropriate complexity for grade 1.
  - a. Activate prior knowledge related to the information and events in a text.
- b. Confirm predictions about what will happen next in a text.
- 10. 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 end of the range.

Anchor R.10 Read and comprehend complex literary and informational texts independently and proficiently.

<sup>&</sup>lt;sup>1</sup> Please see "Research to Build and Present Knowledge" in Writing and "Comprehension and Collaboration" in Speaking and Listening for additional standards relevant to gathering, assessing, and applying information from print and digital sources.

### **INFORMATIONAL TEXT**

### Key Ideas and Details

### K

- With prompting and support, ask and answer questions about key details in a text.
- 2. With prompting and support, identify the main topic and retell key details of a text.
- 3. With prompting and support, describe the connection between two individuals, events, ideas, or pieces of information in a text.

### **1**ST

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

### 2<sub>ND</sub>

- Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text.
- 2. Identify the main topic of a multiparagraph text as well as the focus of specific paragraphs within the text.
- 3. Describe the connection between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text.
- Anchor R.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.
- Anchor R.2 Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas.
- Anchor R.3 Analyze how and why individuals, events, or ideas develop and interact over the course of a text.

### Craft and Structure

- With prompting and support, ask and answer questions about unknown words in a text
- 5. Identify the front cover, back cover, and title page of a book.
- 6. Name the author and illustrator of a text and define the role of each in presenting the ideas or information in a text.
- 4. Ask and answer questions to help determine or clarify the meaning of words and phrases in a text.
- 5. Know and use various text structures (e.g., sequence) and text features (e.g., headings, tables of contents, glossaries, electronic menus, icons) to locate key facts or information in a text.
- 6. Distinguish between information provided by pictures or other illustrations and information provided by the words in a text.
- 4. Determine the meaning of words and phrases in a text relevant to a grade 2 topic or subject area.
- 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.
- 6. Identify the main purpose of a text, including what the author wants to answer, explain, or describe.
- Anchor R.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.
- Anchor R.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.
- Anchor R.6 Assess how point of view or purpose shapes the content and style of a text.

### Integration of Knowledge and Ideas

### K

- 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).
- With prompting and support, identify the reasons an author gives to support points in a text.
- 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).

### 1<sub>ST</sub>

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

### 2<sub>ND</sub>

- 7. Explain how specific images (e.g., a diagram showing how a machine works) contribute to and clarify a text.
- 8. Describe how reasons support specific points the author makes in a text.
- 9. Integrate information from two texts on the same topic in order to write or speak about the subject knowledgeably.
- Anchor R.7 Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words.<sup>2</sup>
- Anchor R.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.
- Anchor R.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.

### Range of Reading & Level of Text Complexity

- Actively engage in group reading activities with purpose and understanding.
- a. Activate prior knowledge related to the information and events in texts.
- b. Use illustrations and context to make predictions about text.
- 10. With prompting and support, read informational texts appropriately complex for grade 1.
- a. Activate prior knowledge related to the information and events in a text.
- b. Confirm predictions about what will happen next in a text.
- 10. By the end of year, read and comprehend informational texts, including history/social studies, science, and technical texts, in the grades 2–3 text complexity band proficiently, with scaffolding as needed at the high end of the range.

Anchor R.10 Read and comprehend complex literary and informational texts independently and proficiently.

<sup>&</sup>lt;sup>2</sup> Please see "Research to Build and Present Knowledge" in Writing and "Comprehension and Collaboration" in Speaking and Listening for additional standards relevant to gathering, assessing, and applying information from print and digital sources.

These standards are directed toward fostering students' understanding and working knowledge of concepts of print, the alphabetic principle, and other basic conventions of the English writing system. These foundational skills are not an end in and of themselves; rather, they are necessary and important components of an effective, comprehensive reading program designed to develop proficient readers with the capacity to comprehend texts across a range of types and disciplines. Instruction should be differentiated: good readers will need much less practice with these concepts than struggling readers will. The point is to teach students what they need to learn and not what they already know—to discern when particular children or activities warrant more or less attention.

### **FOUNDATIONAL SKILLS**

### **Print Concepts**

### K

- 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.

### **1st**

- 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).

### Phonological Awareness

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

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

### Phonics & Word Recognition

### K

- 3. Know and apply grade-level phonics and word analysis skills in decoding words both in isolation and in text.
- a. Demonstrate basic knowledge of oneto-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 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.

### **1**ST

- Know and apply grade-level phonics and word analysis skills in decoding words both in isolation and in text.
- 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 gradeappropriate irregularly spelled words.

### 2<sub>ND</sub>

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

### Fluency

- 4. Read emergent-reader texts with purpose and understanding.
- 4. Read with sufficient accuracy and fluency to support comprehension.
  - a. Read on-level text with purpose and understanding.
- Read on-level text orally with accuracy, appropriate rate, and expression on successive readings.
- c. Use context to confirm or selfcorrect word recognition and understanding, rereading as necessary.
- 4. Read with sufficient accuracy and fluency to support comprehension.
- a. Read on-level text with purpose and understanding.
- 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.

### WRITING STANDARDS

The following standards for K–5 offer a focus for instruction each year to help ensure that students gain adequate mastery of a range of skills and applications. Each year in their writing, students should demonstrate increasing sophistication in all aspects of language use, from vocabulary and syntax to the development and organization of ideas, and they should address increasingly demanding content and sources. Students advancing through the grades are expected to meet each year's grade-specific standards and retain or further develop skills and understandings mastered in preceding grades. The expected growth in student writing ability is reflected both in the standards themselves and in the collection of annotated student writing samples in Appendix C.

### **WRITING**

### Text Types & Purposes

### K

- 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 . . .).
- 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.
- 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.

### **1**st

- 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.
- Write informative explanatory texts in which they name a topic, supply some facts about the topic, and provide some sense of closure.
- 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.

### 2<sub>ND</sub>

- 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.
- Write informative/explanatory texts in which they name a topic, supply some facts about the topic, and provide some sense of closure.
- 3. Write narratives in which they recount a wellelaborated 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.
- Anchor W.1 Write arguments to support claims in an analysis of substantive topics or texts using valid reasoning and relevant and sufficient evidence.
- Anchor W.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.
- Anchor W.3 Write narratives to develop real or imagined experiences or events using effective technique, well-chosen details and well-structured event sequences.

### **Production & Distribution of Writing**

4. (Begins in grade 2)

4. (Begins in grade 2)

4. With guidance and support from adults, produce writing in which the development and organization are appropriate to task and purpose.

### WRITING STANDARDS

### K

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

### **1st**

- 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.
- 6. With guidance and support from adults, use a variety of digital tools to produce and publish writing, including in collaboration with peers.

### **2**ND

- With guidance and support from adults and peers, focus on a topic and strengthen writing as needed by revising and editing.
- 6. With guidance and support from adults, use a variety of digital tools to produce and publish writing, including in collaboration with peers.
- Anchor W.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
- Anchor W.5 Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach.

  Anchor W.6 Use technology, including the Internet, to produce and publish writing and to interact and collaborate with others.

### Research to Build & Present Knowledge

- Participate in shared research and writing projects (e.g., explore a number of books by a favorite author and express opinions about them).
- With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question.
- 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).
- 8. With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question.
- 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).
- 8. Recall information from experiences or gather information from provided sources to answer a question.
- Anchor W.7 Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation.
- Anchor W.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.
- Anchor W.9 Draw evidence from literary or informational texts to support analysis, reflection, and research.

### Research to Build & Present Knowledge

10. (Begins in grade <u>2</u>)

10. (Begins in grade **2**)

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.

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

### SPEAKING & LISTENING

The following standards offer a focus for instruction each year to help ensure that students gain adequate mastery of a range of skills and applications. Students advancing through the grades are expected to meet each year's grade-specific standards and retain or further develop skills and understandings mastered in preceding grades.

### Comprehension & Collaboration

### K

- Participate in collaborative conversations with diverse partners about kindergarten topics and texts with peers and adults in small and larger groups.
- a. Follow agreed-upon rules for discussions (e.g., listening to others and taking turns speaking about the topics and texts under discussion).
- b. Continue a conversation through multiple exchanges.

- 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.
- a. Understand and follow one- and twostep oral directions.
- Ask and answer questions in order to seek help, get information, or clarify something that is not understood.

### **1st**

- 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).
- 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.
- Ask and answer questions about key details in a text read aloud or information presented orally or through other media.
- a. Give, restate, and follow simple two-step directions.
- Ask and answer questions about what a speaker says in order to gather additional information or clarify something that is not understood.

### 2<sub>ND</sub>

- Participate in collaborative conversations with diverse partners about grade 2 topics and texts with peers and adults in small and larger groups.
- a. Follow agreed-upon rules for discussions (e.g., gaining the floor in respectful ways, listening to others with care, speaking one at a time about the topics and texts under discussion).
- b. Build on others' talk in conversations by linking their comments to the remarks of others.
- c. Ask for clarification and further explanation as needed about the topics and texts under discussion.
- 2. Recount or describe key ideas or details from a text read aloud or information presented orally or through other media.
- <u>a. Give and follow three- and four-step</u> oral directions.
- 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.

- Anchor SL.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.
- Anchor SL.2 Integrate and evaluate information presented in diverse media and formats, including visually, quantitatively, and orally.
- Anchor SL.3 Evaluate a speaker's point of view, reasoning, and use of evidence and rhetoric.

### SPEAKING & LISTENING

### Presentation of Knowledge & Ideas

- 4. Describe familiar people, places, things, and events and, with prompting and support, provide additional detail.
- Add drawings or other visual displays to descriptions as desired to provide additional detail.
- 6. Speak audibly and express thoughts, feelings, and ideas clearly.

### **1**st

- 4. Describe people, places, things, and events with relevant details, expressing ideas and feelings clearly.
  - a. Memorize and recite poems, rhymes, and songs with expression.
- 5. Add drawings or other visual displays to descriptions when appropriate to clarify ideas, thoughts, and feelings.
- 6. Produce complete sentences when appropriate to task and situation.

### 2<sub>ND</sub>

- Tell a story or recount an experience with appropriate facts and relevant, descriptive details, speaking audibly in coherent sentences.
  - a. Plan and deliver a narrative
    presentation that: recounts a wellelaborated event, includes details,
    reflects a logical sequence, and
    provides a conclusion.
- 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.
- Produce complete sentences when appropriate to task and situation in order to provide requested detail or clarification.

- Anchor SL.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.
- Anchor SL.5 Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations.
- Anchor SL.6 Adapt speech to a variety of contexts and communicative tasks, demonstrating command of formal English when indicated or appropriate.

### LANGUAGE STANDARDS

The following standards for grades K-5 offer a focus for instruction each year to help ensure that students gain adequate mastery of a range of skills and applications. Students advancing through the grades are expected to meet each year's grade-specific standards and retain or further develop skills and understandings mastered in preceding grades. Beginning in grade 3, skills and understandings that are particularly likely to require continued attention in higher grades as they are applied to increasingly sophisticated writing and speaking are marked with an asterisk (\*).

### Conventions of Standard English

- 1. Demonstrate command of the conventions of standard English grammar and usage when writing or
- a. Print many upper- and lowercase letters.
- b. Use frequently occurring nouns and
- c. Form regular plural nouns orally by adding /s/ or /es/ (e.g., dog, dogs; wish,
- 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.

- 2. Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.
- a. Capitalize the first word in a sentence and the pronoun I.
- b. Recognize and name end punctuation.
- c. Write a letter or letters for most consonant and short-vowel sounds (phonemes).
- d. Spell simple words phonetically, drawing on knowledge of sound-letter relationships.

- 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
- c. Use singular and plural nouns with matching verbs in basic sentences (e.g., He hops; We hop).
- d. Use personal (subject, object), possessive, and indefinite pronouns (e.g., I, me, my; they, them, their, anyone, everything).
- e. Use verbs to convey a sense of past, present, and future (e.g., Yesterday *I walked home; Today I walk home;* Tomorrow I will walk home).
- f. Use frequently occurring adjectives.
- g. Use frequently occurring conjunctions (e.g., and, but, or, so, because).
- h. Use determiners (e.g., articles, demonstratives).
- i. Use frequently occurring prepositions (e.g., during, beyond, toward).
- j. Produce and expand complete simple and compound declarative, interrogative, imperative, and exclamatory sentences in response to prompts.
- 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 onphonemic awareness and spelling conventions

### 2ND

- 1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
- a. Create readable documents with legible print.
- b. Use collective nouns (e.g., group).
- c. Form and use frequently occurring irregular pluralnouns (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 simpleand compound sentences (e.g., The boy watched the movie; The little boy watched the movie; The action movie was watched by the little boy).
- 2. 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 writingwords (e.g., cage badge; boy — boil).
- e. Consult reference materials, including beginning dictionaries, as needed to check and correctspellings.

### LANGUAGE STANDARDS

### Knowledge of Language

K

3. (Begins in grade 2)

### **1**ST

3. (Begins in grade 2)

### 2<sub>ND</sub>

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

Anchor L.3 Apply knowledge of language to understand how language functions in different contexts, to make effective choices for meaning or style, and to comprehend more fully when reading or listening.

### Vocabulary Acquisition and Use

- 4. Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on *kindergarten* reading and content.
  - a. Identify new meanings for familiar words and apply them accurately (e.g., knowing *duck* is a bird and learning the verb to *duck*).
  - b. Use the most frequently occurring inflections and affixes (e.g., -ed, -s, re-, un-, pre-, -ful,-less) as a clue to the meaning of an unknown word.
- 4. Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on *grade 1 reading and content*, choosing flexibly from an array of strategies.
- a. Use sentence-level context as a clue to the meaning of a word or phrase.
- b. Use frequently occurring affixes as a clue to the meaning of a word.
- c. Identify frequently occurring root words (e.g., look) and their inflectional forms (e.g., looks, looked, looking).
- 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 clarifythe meaning of words and phrases in all content areas.

### LANGUAGE STANDARDS

### Vocabulary Acquisition and Use

### K

- 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 samegeneral action (e.g., *walk, march, strut, prance*) by acting out the meanings.
- Use words and phrases acquired through conversations, reading and being read to, and responding to texts.

### **1**ST

- With guidance and support from adults, demonstrate understanding of word relationships and nuances in word meanings.
- a. Sort words into categories (e.g., colors, clothing) to gain a sense of the concepts the categories represent.
- b. Define words by category and by one or more key attributes (e.g., a *duck* is a bird thatswims; a *tiger* is a large cat with stripes).
- c. Identify real-life connections between words and their use (e.g., note places at home that are *cozy*).
- d. Distinguish shades of meaning among verbs differing in manner (e.g., look, peek, glance, stare, glare, scowl) and adjectives differing in intensity (e.g., large, gigantic) by defining or choosing them or by acting out the meanings.
- 6. Use words and phrases acquired through conversations, reading and being read to, and responding to texts, including using frequently occurring conjunctions to signal simple relationships (e.g., I named my hamster Nibblet because she nibbles too much because she likes that).

### 2ND

- 5. Demonstrate understanding of word relationships and nuances in word meanings.
  - a. Identify real-life connections between words and their use (e.g., describe foods that are *spicy* or *juicy*).
  - b. Distinguish shades of meaning among closely related verbs (e.g., toss, throw, hurl) and closely related adjectives (e.g., thin, slender, skinny, scrawny)

6. Use words and phrases acquired through conversations, reading and being read to, and responding to texts, including using adjectives and adverbs to describe (e.g., When other kids are happy that makes me happy).

- Anchor L.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.
- Anchor L.5 Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.
- Anchor L.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.

## LANGUAGE PROGRESSIVE SKILLS, BY GRADE

The following skills, marked with an asterisk (\*) in Language standards 1-3, are particularly likely to require continued attention in higher grades as they are applied to increasingly sophisticated writing and speaking.

		Cradoles	-		Ī
Standard		laneio	6	Ì	
	3 4 5	9	7 8	9-10	11-12
L.3.1f. Ensure subject-verb and pronoun-antecedent agreement.					
L.3.3a. Choose words and phrases for effect.					
L.4.1f. Produce complete sentences, recognizing and correcting inappropriate fragments and run-ons.					
L.4.1g. Correctly use frequently confused words (e.g., to/too/two; there/their).					
L.4.3a. Choose words and phrases to convey ideas precisely.					
L.4.3b. Choose punctuation for effect.					
L.5.1d. Recognize and correct inappropriate shifts in verb tense.					
L.5.2a. Use punctuation to separate items in a series.					
L.6.1c. Recognize and correct inappropriate shifts in pronoun number and person.					
L.6.1d. Recognize and correct vague pronouns (i.e., ones with unclear or ambiguous antecedents).					
<b>L.6.1e.</b> Recognize variations from standard English in their own and others' writing and speaking, and identify and use strategies to improve expression in conventional language.					
L.6.2a. Use punctuation (commas, parentheses, dashes) to set off nonrestrictive/parenthetical elements.					
L.6.3a. Vary sentence patterns for meaning, reader/listener interest, and style.					
L.6.3b. Maintain consistency in style and tone.					
L.7.1c. Place phrases and clauses within a sentence, recognizing and correcting misplaced and dangling modifiers.					
<b>L.7.3a.</b> Choose language that expresses ideas precisely and concisely, recognizing and eliminating wordiness and redundancy.					
L.8.1d. Recognize and correct inappropriate shifts in verb voice and mood.					
L.9-10.1a. Use parallel structure.					

# STANDARD 10: RANGE, QUALITY, AND COMPLEXITY OF STUDENT READING K-5

### Measuring Text Complexity: Three Factors



Qualitative evaluation of the text: Levels of meaning, structure, language conventionality and clarity,

and knowledge demands

Quantitative evaluation of the text: Readability measures and other scores of text complexity

and task variables (such as purpose and the complexity generated by Reader variables (such as motivation, knowledge, and experiences) Matching reader to text and task:

the task assigned and the questions posed)

Note: More detailed information on text complexity and how it is measured is contained in Appendix A

### Range of Text Types for K-5

Students in grades K-5 apply the Reading standards to the following range of text types, with texts selected from a broad range of cultures and periods.

	Literature		Informational Text
Stories	Drama	Poetry	Literary Nonfiction
Includes children's adventure stories, folktales, legends, fables, fantasy, realistic fiction, and myth	Includes staged dialogue and brief familiar scenes	Includes nursery rhymes and the subgenres of the narrative poem, limerick, and free verse poem	Includes biographies and autobiographies; books about history, social studies, science, and the arts; technical texts, including directions, forms, and information displayed in graphs, charts, or maps; and digital sources on a range of topics

# TEXT ILLUSTRATING THE COMPLEXITY, QUALITY, AND RANGE OF STUDENT READING K-5

		Literature: Stories, Dramas, Poetry	Informational Texts: Literary Nonfiction and Historical, Scientific, and Technical Texts	ical, Scientific, and Technical Texts
	•	Over in the Meadow by John Langstaff (traditional) (c1800)*	My Five Senses by Aliki (1962)**	
	•	A Boy, a Dog, and a Frog by Mercer Mayer (1967)	Truck by Donald Crews (1980)	
*	•	Pancakes for Breakfast by Tomie DePaola (1978)	I Read Signs by Tana Hoban (1987)	
	•	A Story, A Story by Gail E. Haley (1970)*	What Do You Do With a Tail Like This? by Steve Jenkins and Robin Page (2003)*	$\prime$ e Jenkins and Robin Page (2003) $^*$
	•	Kitten's First Full Moon by Kevin Henkes (2004)*	Amazing Whales! by Sarah L. Thomson (2005)*	*
	•	"Mix a Pancake" by Christina G. Rossetti (1893)**	A Tree Is a Plant by Clyde Robert Bulla, illustrated by Stacey Schuett (1960)**	ited by Stacey Schuett (1960)**
	•	Mr. Popper's Penguins by Richard Atwater (1938)*	Starfish by Edith Thacher Hurd (1962)	
*	•	Little Bear by Else Holmelund Minarik, illustrated by Maurice	Follow the Water from Brook to Ocean by Arthur Dorros (1991)**	ur Dorros (1991)**
-		Sendak (1957)**	From Seed to Pumpkin by Wendy Pfeffer, illustrated by James Graham Hale	rated by James Graham Hale
	•	Frog and Toad Together by Arnold Lobel (1971)**	(2004)*	
	•	Hi! Fly Guy by Tedd Arnold (2006)	How People Learned to Fly by Fran Hodgkins and True Kelley (2007)*	and True Kelley (2007)*
	•	"Who Has Seen the Wind?" by Christina G. Rossetti (1893)	A Medieval Feast by Aliki (1983)	
	•	Charlotte's Web by E. B. White (1952)*	From Seed to Plant by Gail Gibbons (1991)	
,	•	Sarah, Plain and Tall by Patricia MacLachlan (1985)	The Story of Ruby Bridges by Robert Coles (1995)*	)95)*
C-4	•	Tops and Bottoms by Janet Stevens (1995)	A Drop of Water: A Book of Science and Wonder by Walter Wick (1997)	ler by Walter Wick (1997)
	•	Poppleton in Winter by Cynthia Rylant, illustrated by Mark Teague (2001)	Moonshot: The Flight of Apollo 11 by Brian Floca (2009)	ca (2009)
	•	Alice's Adventures in Wonderland by Lewis Carroll (1865)	Discovering Mars: The Amazing Story of the Red Planet by Melvin Berger (1992)	ed Planet by Melvin Berger (1992)
	•	"Casey at the Bat" by Ernest Lawrence Thayer (1888)	Hurricanes: Earth's Mightiest Storms by Patricia Lauber (1996)	a Lauber (1996)
<b>V</b>	•	The Black Stallion by Walter Farley (1941)	A History of US by Joy Hakim (2005)	
	•	"Zlateh the Goat" by Isaac Bashevis Singer (1984)	Horses by Seymour Simon (2006)	
	•	Where the Mountain Meets the Moon by Grace Lin (2009)	Quest for the Tree Kangaroo: An Expedition to the Cloud Forest of New Guinea by Sy Montgomery (2006)	the Cloud Forest of New Guinea by

Note: Given space limitations, the illustrative texts listed above are meant only to show individual titles that are representative of a wide range of topics and genres. (See Appendix B for excerpts of these and other texts illustrative of K-5 text complexity, quality, and range.) At a curricular or instructional level, within and across grade levels, texts need to be selected around topics or themes in depth. On the next page is an example of progressions of texts building knowledge across grade levels. \*Children at the kindergarten and grade 1 levels should be expected to read texts independently that have been specifically written to correlate to their reading level and their word knowledge. Many of the titles listed above are meant to supplement carefully structured independent reading with books to read along with a teacher or that are read aloud to students to build knowledge and cultivate a joy in reading.

## HOW TO BUILD KNOWLEDGE SYSTEMATICALLY IN ENGLISH LANGUAGE ARTS K-5 STAYING ON TOPIC WITHIN A GRADE AND ACROSS GRADES

form one big picture. At a curricular or instructional level, texts—within and across grade levels—need to be selected around topics or themes that systematically develop the knowledge base of students. Within a grade level, there should be an adequate number of titles on a single topic that should then be expanded and developed in subsequent grade levels to ensure an increasingly deeper understanding of these topics. Children in the upper elementary grades will generally be expected to read these texts independently and reflect on them in writing. However, children in the early grades (particularly K–2) should participate in rich, structured conversations with an adult in response to the written texts that are read aloud, orally Building knowledge systematically in English language arts is like giving children various pieces of a puzzle in each grade that, over time, will would allow children to study that topic for a sustained period. The knowledge children have learned about particular topics in early grade levels comparing and contrasting as well as analyzing and synthesizing, in the manner called for by the Standards.

Preparation for reading complex informational texts should begin at the very earliest elementary school grades. What follows is one example that uses domain-specific nonfiction titles across grade levels to illustrate how curriculum designers and classroom teachers can infuse the English anguage arts block with rich, age-appropriate content knowledge and vocabulary in history/social studies, science, and the arts. Having students listen to informational read-alouds in the early grades helps lay the necessary foundation for students' reading and understanding of increasingly complex texts on their own in subsequent grades.

Exemplar Texts on a Topic Across Grades	¥	÷	2-3	4-5
The Human Body	The five senses and associated body parts	Introduction to the systems of the human body and associated body parts	Digestive and excretory systems  What Happens to a Hamburger	Circulatory system • The Heart by Seymour Simon
about the human body starting in kindergarten and then review and extend	My Five Senses by Aliki (1989)     Hearing by Maria Rius (1985)	<ul> <li>Under Your Skin: Your Amazing Body by Mick Manning (2007)</li> </ul>	by Paul Showers (1985)  The Digestive System by Christine Taylor-Butler (2008)	(2006) The Heart and Circulation by Carol Ballard (2005)
their learning during each subsequent grade.	• Signt by Maria Rius (1985)	<ul> <li>Me and My Amazing Body by Joan Sweeney (1999)</li> </ul>	<ul> <li>The Digestive System by Rebecca L. Johnson (2006)</li> </ul>	<ul> <li>The Circulatory System by Kristin Petrie (2007)</li> </ul>
	<ul> <li>Taste by Maria Rius (1985)</li> <li>Touch by Maria Rius (1985)</li> </ul>	<ul> <li>The Human Body by Gallimard Jeunesse (2007)</li> </ul>	<ul> <li>The Digestive System by Kristin Petrie (2007)</li> </ul>	<ul> <li>The Amazing Circulatory System by John Burstein (2009)</li> </ul>
	Taking care of your body:	<ul> <li>The Busy Body Book by Lizzy Rockwell (2008)</li> </ul>	Taking care of your body:	Respiratory system
	overview (inygierie, diet, exercise, rest)	First Encyclopedia of the Human Body by Fiona Chandler	Good Enough to Eat by Lizzy	<ul> <li>The Lungs by Seymour Simon (2007)</li> </ul>
	My Amazing Body: A First Look at Health & Fitness by Dat	(2004)	Rockwell (1999)	<ul> <li>The Respiratory System by</li> </ul>
	Thomas (2001)	Taking care of your body: Germs,	<ul> <li>Showdown at the Food Pyramid by Rex Barron (2004)</li> </ul>	Susan Glass (2004)
	· Get Up and Go! by Nancy	diseases, and preventing illness	Muscular, skeletal, and nervous	<ul> <li>The Respiratory System by Kristin Petrie (2007)</li> </ul>
	Carlson (2008)	<ul> <li>Germs Make Me Sick by Marilyn Berger (1995)</li> </ul>	systems	The Remarkable Respiratory
	<ul> <li>Go Wash Up by Doering Tourville (2008)</li> </ul>	<ul> <li>Tiny Life on Your Body by</li> </ul>	• The Mighty Muscular and	System by John Burstein (2009)
	Sleep by Paul Showers (1997)	Christine Taylor-Butler (2005)	Skeletal systems Craptree Publishing (2009)	Endocrine system
	<ul> <li>Fuel the Body by Doering Tourville (2008)</li> </ul>	<ul> <li>Germ Stories by Arthur Kornberg (2007)</li> </ul>	<ul> <li>Muscles by Seymour Simon (1998)</li> </ul>	<ul> <li>The Endocrine System by Rebecca Olien (2006)</li> </ul>
		All About Scabs by Genichiro Yagu (1998)	<ul> <li>Bones by Seymour Simon (1998)</li> </ul>	• The Exciting Endocrine System by John Burstein (2009)
			<ul> <li>The Astounding Nervous System Crabtree Publishing (2009)</li> </ul>	
			• The Nervous System by Joelle Riley (2004)	

### **INTRODUCTION**

### Toward greater focus and coherence

Mathematics experiences in early childhood settings should concentrate on (1) number (which includes whole number, operations, and relations) and (2) geometry, spatial relations, and measurement, with more mathematics learning time devoted to number than to other topics. Mathematical process goals should be integrated in these content areas.

-National Research Council, 2009

The composite standards [of Hong Kong, Korea and Singapore] have a number of features that can inform an international benchmarking process for the development of K–6 mathematics standards in the U.S. First, the composite standards concentrate the early learning of mathematics on the number, measurement, and geometry strands with less emphasis on data analysis and little exposure to algebra. The Hong Kong standards for grades 1–3 devote approximately half the targeted time to numbers and almost all the time remaining to geometry and measurement.

- Ginsburg, Leinwand and Decker, 2009

Because the mathematics concepts in [U.S.] textbooks are often weak, the presentation becomes more mechanical than is ideal. We looked at both traditional and non-traditional textbooks used in the US and found this conceptual weakness in both.

- Ginsburg et al., 2005

There are many ways to organize curricula. The challenge, now rarely met, is to avoid those that distort mathematics and turn off students.

- Steen, 2007

For over a decade, research studies of mathematics education in high-performing countries have pointed to the conclusion that the mathematics curriculum in the United States must become substantially more focused and coherent in order to improve mathematics achievement in this country. To deliver on the promise of common standards, the standards must address the problem of a curriculum that is "a mile wide and an inch deep." These Standards are a substantial answer to that challenge.

It is important to recognize that "fewer standards" are no substitute for focused standards. Achieving "fewer standards" would be easy to do by resorting to broad, general statements. Instead, these Standards aim for clarity and specificity.

Assessing the coherence of a set of standards is more difficult than assessing their focus. William Schmidt and Richard Houang (2002) have said that content standards and curricula are coherent if they are:

articulated over time as a sequence of topics and performances that are logical and reflect, where appropriate, the sequential or hierarchical nature of the disciplinary content from which the subject matter derives. That is, what and how students are taught should reflect not only the topics that fall within a certain academic discipline, **but also the key ideas** that determine how knowledge is organized and generated within that discipline. This implies that "to be coherent," a set of content standards must evolve from particulars (e.g., the meaning and operations of whole numbers, including simple math facts and routine computational procedures associated with whole numbers and fractions) to deeper structures inherent in the discipline. These deeper structures then serve as a means for connecting the particulars (such as an understanding of the rational number system and its properties). (emphasis added)

These Standards endeavor to follow such a design, not only by stressing conceptual understanding of key ideas, but also by continually returning to organizing principles such as place value or the laws of arithmetic to structure those ideas.

In addition, the "sequence of topics and performances" that is outlined in a body of mathematics standards must also respect what is known about how students learn. As Confrey (2007) points out, developing "sequenced obstacles and challenges for students... absent the insights about meaning that derive from careful study of learning, would be unfortunate and unwise." In recognition of this, the development of these Standards began with research-based learning progressions detailing what is known today about how students' mathematical knowledge, skill, and understanding develop over time.

### MATHEMATICAL PRACTICE

The Standards for Mathematical Practice describe varieties of expertise that mathematics educators at all levels should seek to develop in their students. These practices rest on important "processes and proficiencies" with longstanding importance in mathematics education. The first of these are the NCTM process standards of problem solving, reasoning and proof, communication, representation, and connections. The second are the strands of mathematical proficiency specified in the National Research Council's report Adding It Up: adaptive reasoning, strategic competence, conceptual understanding (comprehension of mathematical concepts, operations and relations), procedural fluency (skill in carrying out procedures flexibly, accurately, efficiently and appropriately), and productive disposition (habitual inclination to see mathematics as sensible, useful, and worthwhile, coupled with a belief in diligence and one's own efficacy).

### 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.

### 2 Reason abstractly and quantitatively.

Mathematically proficient students make sense of quantities and their relationships in problem situations. They bring two complementary abilities to bear on problems involving quantitative relationships: the ability to decontextualize—to abstract a given situation and represent it symbolically and manipulate the representing symbols as if they have a life of their own, without necessarily attending to their referents—and the ability to contextualize, to pause as needed during the manipulation process in order to probe into the referents for the symbols involved. Quantitative reasoning entails habits of creating a coherent representation of the problem at hand; considering the units involved; attending to the meaning of quantities, not just how to compute them; and knowing and flexibly using different properties of operations and objects.

### 3 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.

### 4 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.

### 5 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.

### 6 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.

### 7 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  $7 \times 8$  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  $2 \times 7$  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.

### 8 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 + 1), and (x - 1)(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.

### Connecting the Standards for Mathematical Practice to the Standards for Mathematical Content

The Standards for Mathematical Practice describe ways in which developing student practitioners of the discipline of mathematics increasingly ought to engage with the subject matter as they grow in mathematical maturity and expertise throughout the elementary, middle and high school years. Designers of curricula, assessments, and professional development should all attend to the need to connect the mathematical practices to mathematical content in mathematics instruction. The Standards for Mathematical Content are a balanced combination of procedure and understanding. Expectations that begin with the word "understand" are often especially good opportunities to connect the practices to the content. Students who lack understanding of a topic may rely on procedures too heavily. Without a flexible base from which to work, they may be less likely to consider analogous problems, represent problems coherently, justify conclusions, apply the mathematics to practical situations, use technology mindfully to work with the mathematics, explain the mathematics accurately to other students, step back for an overview, or deviate from a known procedure to find a shortcut. In short, a lack of understanding effectively prevents a student from engaging in the mathematical practices. In this respect, those content standards which set an expectation of understanding are potential "points of intersection" between the Standards for Mathematical Content and the Standards for Mathematical Practice. These points of intersection are intended to be weighted toward central and generative concepts in the school mathematics curriculum that most merit the time, resources, innovative energies, and focus necessary to qualitatively improve the curriculum, instruction, assessment, professional development, and student achievement in mathematics.

### **Understanding mathematics**

These Standards define what students should understand and be able to do in their study of mathematics. Asking a student to understand something means asking a teacher to assess whether the student has understood it. But what does mathematical understanding look like? One hallmark of mathematical understanding is the ability to justify, in a way appropriate to the student's mathematical maturity, why a particular mathematical statement is true or where a mathematical rule comes from. There is a world of difference between a student who can summon a mnemonic device to expand a product such as (a + b)(x + y) and a student who can explain where the mnemonic comes from. The student who can explain the rule understands the mathematics, and may have a better chance to succeed at a less familiar task such as expanding (a + b + c)(x + y). Mathematical understanding and procedural skill are equally important, and both are assessable using mathematical tasks of sufficient richness.

The Standards set grade-specific standards but do not define the intervention methods or materials necessary to support students who are well below or well above grade-level expectations. It is also beyond the scope of the Standards to define the full range of supports appropriate for English language learners and for students with special needs. At the same time, all students must have the opportunity to learn and meet the same high standards if they are to access the knowledge and skills necessary in their post-school lives. The Standards should be read as allowing for the widest possible range of students to participate fully from the outset, along with appropriate accommodations to ensure maximum participation of students with special education needs. For example, for students with disabilities reading should allow for use of Braille, screen reader technology, or other assistive devices, while writing should include the use of a scribe, computer, or speech-to-text technology. In a similar vein, speaking and listening should be interpreted broadly to include sign language. No set of grade-specific standards can fully reflect the great variety in abilities, needs, learning rates, and achievement levels of students in any given classroom. However, the Standards do provide clear signposts along the way to the goal of college and career readiness for all students.

K	1	2	3	4	5	6	7	8	HS
Counting & Cardinality									
	Number	& Operati	ions Base T	en en			roportional onships		Number
			Num	ber & Oper Fractions		The	Number Sy	stem	& Quantity
		Operatio					Expressions & Equations		Algebra
& Algebraic Thinking							Functions	Functions	
Geometry						Geometry			
Measurement & Data Statistics & Probability						Statistics & Probability			

Findell & Foughty (2011)

College and Career-Readiness through the Common Core State Standards for Mathematics

### **GRADE 1 - OVERVIEW**

In Grade 1, instructional time should focus on four critical areas: (1) developing understanding of addition, subtraction, and strategies for addition and subtraction within 20; (2) developing understanding of whole number relationships and place value, including grouping in tens and ones; (3) developing understanding of linear measurement and measuring lengths as iterating length units; and (4) reasoning about attributes of, and composing and decomposing geometric shapes.

- 1. Students develop strategies for adding and subtracting whole numbers based on their prior work with small numbers. They use a variety of models, including discrete objects and length-based models (e.g., cubes connected to form lengths), to model add-to, take-from, put-together, take-apart, and compare situations to develop meaning for the operations of addition and subtraction, and to develop strategies to solve arithmetic problems with these operations. Students understand connections between counting and addition and subtraction (e.g., adding two is the same as counting on two). They use properties of addition to add whole numbers and to create and use increasingly sophisticated strategies based on these properties (e.g., "making tens") to solve addition and subtraction problems within 20. By comparing a variety of solution strategies, children build their understanding of the relationship between addition and subtraction.
- 2. Students develop, discuss, and use efficient, accurate, and generalizable methods to add within 100 and subtract multiples of 10. They compare whole numbers (at least to 100) to develop understanding of and solve problems involving their relative sizes. They think of whole numbers between 10 and 100 in terms of tens and ones (especially recognizing the numbers 11 to 19 as composed of a ten and some ones). Through activities that build number sense, they understand the order of the counting numbers and their relative magnitudes.
- 3. Students develop an understanding of the meaning and processes of measurement, including underlying concepts such as iterating (the mental activity of building up the length of an object with equal-sized units) and the transitivity principle for indirect measurement.1
- 4. Students compose and decompose plane or solid figures (e.g., put two triangles together to make a quadrilateral) and build understanding of part-whole relationships as well as the properties of the original and composite shapes. As they combine shapes, they recognize them from different perspectives and orientations, describe their geometric attributes, and determine how they are alike and different, to develop the background for measurement and for initial understandings of properties such as congruence and symmetry.

### **OPERATIONS & ALGEBRAIC THINKING**

REPRESENT AND SOLVE PROBLEMS INVOLVING ADDITION AND SUBTRACTION.

- 1. Use addition and subtraction within 20 to solve word problems 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.
- 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.

### UNDERSTAND AND APPLY PROPERTIES OF OPERATIONS AND THE RELATIONSHIP BETWEEN ADDITION AND SUBTRACTION.

- 3. Apply properties of operations as strategies to add and subtract. 3 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.)
- 4. Understand subtraction as an unknown-addend problem. For example, subtract 10 8 by finding the number that makes 10 when added to 8.

### ADD AND SUBTRACT WITHIN 20.

- 5. Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).
- 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).

### WORK WITH ADDITION AND SUBTRACTION EQUATIONS.

- 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.
- 8. Determine the unknown whole number in an addition or subtraction equation relating 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 = .

### NUMBER & OPERATIONS IN BASETEN

### **EXTEND THE COUNTING SEQUENCE**

1. 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.

### UNDERSTAND PLACE VALUE

- Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases:
  - 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).
- 3. Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols >, =, and <.

### USE PLACE VALUE UNDERSTANDING AND PROPERTIES OF OPERATIONS TO ADD AND SUBTRACT.

- 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.
- 5. Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used.
- 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.

<sup>&</sup>lt;sup>2</sup>See Glossary, Table 1.

### **MEASUREMENT & DATA**

MEASURE LENGTHS INDIRECTLY AND BY ITERATING LENGTH UNITS.

- 1. Order three objects by length; compare the lengths of two objects indirectly by using a third object.
- 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 no gaps or overlaps. Limit to contexts where the object being measured is spanned by a whole number of length units with no gaps or overlaps.

TELL AND WRITE TIME

3. Tell and write time in hours and half-hours using analog and digital clocks

### REPRESENT AND INTERPRET DATA.

4. 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.

### **GEOMETRY**

REASON WITH SHAPES AND THEIR ATTRIBUTES.

- 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.
- 2. Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quartercircles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape.
- 3. Partition circles and rectangles into two and four equal shares, describe the shares using the words halves, fourths, and quarters, and use the phrases half of, fourth of, and quarter of. Describe the whole as two of, or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares.