for English Language Arts & Literacy in History/Social Studies, Science, and Technical Subjects for California Public Schools Kindergarten Through Grade Twelve

#### RL

#### Reading Standards for Literature K-5

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 grade-specific standards and retain or further develop skills and understandings mastered in preceding grades.

Grade 3 Students:					
Key Ideas and Details	1.	Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.			
	2.	Recount stories, including fables, folktales, and myths from diverse cultures; determine the central message, lesson, or moral and explain how it is conveyed through key details in the text.			
	3.	Describe characters in a story (e.g., their traits, motivations, or feelings) and explain how their actions contribute to the sequence of events.			
Craft and Structure	4.	Determine the meaning of words and phrases as they are used in a text, distinguishing literal from nonliteral language. (See grade 3 Language standards 4–6 for additional expectations.) CA			
	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.			
	6.	Distinguish their own point of view from that of the narrator or those of the characters.			
Integration of Knowledge and Ideas	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).			
	8.	(Not applicable to literature)			
	9.	Compare and contrast the themes, settings, and plots of stories written by the same author about the same or similar characters (e.g., in books from a series).			
Range of Reading and Level of Text Complexity	10.	By the end of the year, read and comprehend literature, including stories, dramas, and poetry, at the high end of the grades 2–3 text complexity band independently and proficiently.			

for English Language Arts & Literacy in History/Social Studies, Science, and Technical Subjects for California Public Schools Kindergarten Through Grade Twelve

### RI Reading Standards for Informational Text K-5

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 grade-specific standards and retain or further develop skills and understandings mastered in preceding grades.

	Grade 3 Students:					
Key Ideas and Details	1.	Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.				
	2.	Determine the main idea of a text; recount the key details and explain how they support the main idea.				
	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.				
Craft and Structure	4.	Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a <i>grade 3 topic</i> or subject area. (See grade 3 Language standards 4–6 for additional expectations.) CA				
	5.	Use text features and search tools (e.g., key words, sidebars, hyperlinks) to locate information relevant to a given topic efficiently.				
	6.	Distinguish their own point of view from that of the author of a text.				
Integration of Knowledge and Ideas	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).				
	8.	Describe the logical connection between particular sentences and paragraphs in a text (e.g., comparison, cause/effect, first/second/third in a sequence).				
	9.	Compare and contrast the most important points and key details presented in two texts on the same topic				
Range of Reading and Level of Text Complexity	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.				

for English Language Arts & Literacy in History/Social Studies, Science, and Technical Subjects for California Public Schools Kindergarten Through Grade Twelve

#### RF

#### Reading Standards: Foundational Skills K-5

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. Note: In kindergarten, children are expected to demonstrate increasing awareness and competence in the areas that follow.

expected to demonstrate increasing awareness and competence in the areas that follow.						
Grade 3 Students:						
Phonics and Word Recognition	3.	Know and apply grade-level phonics and word analysis skills in decoding words both in isolation and in text. CA  a. Identify and know the meaning of the most common prefixes and derivational suffices.  b. Decode words with common Latin suffixes.  c. Decode multisyllable words.  d. Read grade-appropriate irregularly spelled words.				
Fluency	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.				

for English Language Arts & Literacy in History/Social Studies, Science, and Technical Subjects for California Public Schools Kindergarten Through Grade Twelve

#### W

#### Writing Standards K-5

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 understanding 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.

	Grade 3 Students:					
Text Types and Purposes	1.	<ul> <li>Write opinion pieces on topics or texts, supporting a point of view with reasons.</li> <li>a. Introduce the topic or text they are writing about, state an opinion, and create an organizational structure that lists reasons.</li> <li>b. Provide reasons that support the opinion.</li> <li>c. Use linking words and phrases (e.g., because, therefore, since, for example) to connect opinions and reasons.</li> <li>d. Provide a concluding statement or section.</li> </ul>				
	2.	<ul> <li>Write informative/explanatory texts to examine a topic and convey ideas and information clearly.</li> <li>a. Introduce a topic and group related information together; include illustrations when useful to aiding comprehension.</li> <li>b. Develop the topic with facts, definitions, and details.</li> <li>c. Use linking words and phrases (e.g., also, another, and, more, but) to connect ideas within categories of information.</li> <li>d. Provide a concluding statement or section.</li> </ul>				
	3.	<ul> <li>Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear sequences.</li> <li>a. Establish a situation and introduce a narrator and/or characters; organize an event sequence that unfolds naturally.</li> <li>b. Use dialogue and descriptions of actions, thoughts, and feelings to develop experiences and events or show the response of characters to situations.</li> <li>c. Use temporal words and phrases to signal event order.</li> <li>d. Provide a sense of closure.</li> </ul>				
nd /riting	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.)				
Production and Distribution of Writing	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.)				
Pro Distrib	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.				
ld and edge	7.	Conduct short research projects that build knowledge about a topic.				
Research to Build and Present Knowledge	8.	Recall information from experiences or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories.				
Resear	9.	(Begins in grade 4)				
Range of Writing	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.				

for English Language Arts & Literacy in History/Social Studies, Science, and Technical Subjects for California Public Schools Kindergarten Through Grade Twelve

#### SL

#### Speaking and Listening Standards K-5

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. 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.

#### **Grade 3 Students:** Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 3 topics and texts, building on others' ideas and expressing their own clearly. 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. Follow agreed-upon rules for discussions (e.g., gaining the floor in respectful ways, listening to others with care, Comprehension and Collaboration speaking one at a time about the topics and texts under discussion). Ask questions to check understanding of information presented, stay on topic, and link their comments to the remarks of others. Explain their own ideas and understanding in light of the discussion. 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. Ask and answer questions about information from a speaker, offering appropriate elaboration and detail. 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. Presentation of Knowledge a. Plan and deliver an informative/explanatory presentation on a topic that: organizes ideas around major points of information, follows a logical sequence, includes supporting details, uses clear and specific vocabulary, and provides a strong conclusion, CA Create engaging audio recordings of stories or poems that demonstrate fluid reading at an understandable pace; add visual displays when appropriate to emphasize or enhance certain facts or details. 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 for specific expectations.)

for English Language Arts & Literacy in History/Social Studies, Science, and Technical Subjects for California Public Schools Kindergarten Through Grade Twelve

#### Language Standards K-5

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. 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 understanding 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 (\*). See the table "Language Progress Skills, by Grade" for a complete list and Appendix A for an example of how these skills develop in sophistication.

#### **Grade 3 Students:**

- Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
  - a. Explain the function of nouns, pronouns, verbs, adjectives, and adverbs in general and their functions in particular sentences.
  - b. Form and use regular and irregular plural nouns.
  - c. Use abstract nouns (e.g., childhood).
  - d. Form and use regular and irregular verbs.
  - Form and use the simple (e.g., I walked; I walk; I will walk) verb tenses.
  - Ensure subject-verb and pronoun-antecedent agreement.\*
  - Form and use comparative and superlative adjectives and adverbs, and choose between them depending on what is to be modified.
  - Use coordinating and subordinating conjunctions.
  - Produce simple, compound, and complex sentences.
  - Write legibly in cursive or joined italics, allowing margins and correct spacing between letters in a word and words in a sentence. CA
  - k. Use reciprocal pronouns correctly. CA
- 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.
  - Use conventional spelling for high-frequency and other studied words and for adding suffixes to base words (e.g., sitting, smiled, cries, happiness).
  - Use spelling patterns and generalizations (e.g., word families, position-based spellings, syllable patterns, ending rules, meaningful word parts) in writing words.
  - Consult reference materials, including beginning dictionaries, as needed to check and correct spellings.

# of Language

Standard English

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

Vocabulary Acquisition

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

### Mathematics | Grade 3

In Grade 3, instructional time should focus on four critical areas: (1) developing understanding of multiplication and division and strategies for multiplication and division within 100; (2) developing understanding of fractions, especially unit fractions (fractions with numerator 1); (3) developing understanding of the structure of rectangular arrays and of area; and (4) describing and analyzing two-dimensional shapes.

- (1) Students develop an understanding of the meanings of multiplication and division of whole numbers through activities and problems involving equal-sized groups, arrays, and area models; multiplication is finding an unknown product, and division is finding an unknown factor in these situations. For equal-sized group situations, division can require finding the unknown number of groups or the unknown group size. Students use properties of operations to calculate products of whole numbers, using increasingly sophisticated strategies based on these properties to solve multiplication and division problems involving single-digit factors. By comparing a variety of solution strategies, students learn the relationship between multiplication and division.
- (2) Students develop an understanding of fractions, beginning with unit fractions. Students view fractions in general as being built out of unit fractions, and they use fractions along with visual fraction models to represent parts of a whole. Students understand that the size of a fractional part is relative to the size of the whole. For example, 1/2 of the paint in a small bucket could be less paint than 1/3 of the paint in a larger bucket, but 1/3 of a ribbon is longer than 1/5 of the same ribbon because when the ribbon is divided into 3 equal parts, the parts are longer than when the ribbon is divided into 5 equal parts. Students are able to use fractions to represent numbers equal to, less than, and greater than one. They solve problems that involve comparing fractions by using visual fraction models and strategies based on noticing equal numerators or denominators.
- (3) Students recognize area as an attribute of two-dimensional regions. They measure the area of a shape by finding the total number of same-size units of area required to cover the shape without gaps or overlaps, a square with sides of unit length being the standard unit for measuring area. Students understand that rectangular arrays can be decomposed into identical rows or into identical columns. By decomposing rectangles into rectangular arrays of squares, students connect area to multiplication, and justify using multiplication to determine the area of a rectangle.
- (4) Students describe, analyze, and compare properties of two-dimensional shapes. They compare and classify shapes by their sides and angles, and connect these with definitions of shapes. Students also relate their fraction work to geometry by expressing the area of part of a shape as a unit fraction of the whole.

## 3 Grade 3 Overview

#### **Operations and Algebraic Thinking**

- Represent and solve problems involving multiplication and division.
- Understand properties of multiplication and the relationship between multiplication and division.
- Multiply and divide within 100.
- Solve problems involving the four operations, and identify and explain patterns in arithmetic.

#### **Number and Operations in Base Ten**

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

#### **Number and Operations—Fractions**

Develop understanding of fractions as numbers.

#### **Mathematical Practices**

- **1.** Make sense of problems and persevere in solving them.
- **2.** Reason abstractly and quantitatively.
- **3.** Construct viable arguments and critique the reasoning of others.
- 4. Model with mathematics.
- **5.** Use appropriate tools strategically.
- 6. Attend to precision.
- **7.** Look for and make use of structure.
- **8.** Look for and express regularity in repeated reasoning.

#### **Measurement and Data**

- Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.
- Represent and interpret data.
- Geometric measurement: understand concepts of area and relate area to multiplication and to addition.
- Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.

#### Geometry

Reason with shapes and their attributes.

#### Operations and Algebraic Thinking

3.OA

#### Represent and solve problems involving multiplication and division.

- 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.
- 2. Interpret whole-number quotients of whole numbers, e.g., interpret 56 ÷ 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÷8.
- 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.<sup>1</sup>
- 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  $8 \times ? = 48$ ,  $5 = || \div 3$ ,  $6 \times 6 = ?$ .

#### Understand properties of multiplication and the relationship between multiplication and division.

- 5. 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  $8 \times 7$  as  $8 \times (5 + 2) = (8 \times 5) + (8 \times 2) = 40 + 16 = 56$ . (Distributive property.)
- 6. Understand division as an unknown-factor problem. For example, find  $32 \div 8$  by finding the number that makes 32 when multiplied by 8.

#### Multiply and divide within 100.

7. 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.

#### Solve problems involving the four operations, and identify and explain patterns in arithmetic.

- 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.<sup>3</sup>
- 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.

-

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

<sup>&</sup>lt;sup>2</sup> Students need not use formal terms for these properties.

<sup>&</sup>lt;sup>3</sup> This standard is limited to problems posed with whole numbers and having whole-number answers; students should know how to perform operations in the conventional order when there are no parentheses to specify a particular order (Order of Operations).

## 3 Grade 3

#### Number and Operations in Base Ten

3.NBT

Use place value understanding and properties of operations to perform multi-digit arithmetic.4

- 1. Use place value understanding to round whole numbers to the nearest 10 or 100.
- 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.
- 3. Multiply one-digit whole numbers by multiples of 10 in the range 10-90 (e.g.,  $9 \times 80$ ,  $5 \times 60$ ) using strategies based on place value and properties of operations.

#### Number and Operations—Fractions<sup>5</sup>

3.NF

Develop understanding of fractions as numbers.

- 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.
- 2. Understand a fraction as a number on the number line; represent fractions on a number 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 b 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.
- 3. Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size.
  - a. 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.
  - c. Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. 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.
  - 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.

#### Measurement and Data

3.MD

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

- 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.
- 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

<sup>&</sup>lt;sup>4</sup> A range of algorithms may be used.

<sup>&</sup>lt;sup>5</sup> Grade 3 expectations in this domain are limited to fractions with denominators 2, 3, 4, 6, and 8.

<sup>&</sup>lt;sup>6</sup> Excludes compound units such as cm<sup>3</sup> and finding the geometric volume of a container.

### 3 Grade 3

involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem.<sup>7</sup>

#### Represent and interpret data.

- 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. For example, draw a bar graph in which each square in the bar graph might represent 5 pets.
- 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.

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

- 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 *n* unit squares is said to have an area of *n* square units.
- 6. Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units).
- 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  $a \times b$  and  $a \times c$ . 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.

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

8. 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.

<sup>&</sup>lt;sup>7</sup> Excludes multiplicative comparison problems (problems involving notions of "times as much"; see Glossary, Table 2).

Geometry 3.G

#### Reason with shapes and their attributes.

- 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.
- 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.