

**This resource is only to be used during school closure due to COVID-19.** The Department identified content standards that are prerequisites for student success in the next grade level. The standards should not be used in connection with MCAS expectations or referenced in preparing students for the MCAS for any grade level. Since most standards will already have been taught prior to the closures, we anticipate that significant time would still be spent on reinforcement as an integral part of opposed to advancing new concepts.

## **Grade 5**

### **English Language Arts and Literacy**

#### **Reading Literature and Informational [RL/RI]**

1. Quote or paraphrase a text accurately when explaining what the text states explicitly and when drawing inferences from the text. (See grade 5 Writing Standard 8 for more on paraphrasing.)
10. Independently and proficiently read and comprehend texts exhibiting complexity appropriate for at least grade 5.

#### **Reading Literature [RL]**

2. Determine a theme of a story, drama, or poem from details in the text, including how characters in a story or drama respond to challenges or how the speaker in a poem reflects upon a topic; summarize a text.
3. Compare and contrast two or more characters, settings, or events in a story or drama, drawing on specific details in the text (e.g., how characters interact).
4. Determine the meaning of words and phrases as they are used in a text; identify and explain the effects of figurative language such as metaphors and similes.

#### **Reading Informational [RI]**

2. Determine one or more main ideas of a text and explain how they are supported by key details; summarize a text.
3. Explain the relationships or interactions between two or more individuals, events, ideas, or concepts in a historical, scientific, mathematical, or technical text based on specific information in the text.
8. Explain how an author uses reasons and evidence to support particular points in a text, identifying which reasons and evidence support which point(s).

#### **Reading Foundational Skills [RF]**

3. Know and apply grade-level phonics and word analysis skills in decoding words.
  - a. Use combined knowledge of all letter-sound correspondences, syllabication patterns, and morphology (e.g., roots and affixes) to read accurately unfamiliar multisyllabic words in context and out of context.
4. Read with sufficient accuracy and fluency to support comprehension.
  - a. Read grade-level text with purpose and understanding.

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

## Writing [W]

1. Write opinion pieces on topics or texts, supporting a point of view with reasons and information.
  - a. Introduce a topic or text clearly, state an opinion, and create an organizational structure in which ideas are logically grouped in paragraphs and sections to support the writer's purpose.
  - b. Provide logically ordered reasons that are supported by facts and details.
  - c. Link opinion and reasons using words, phrases, and clauses (e.g., *consequently*, *specifically*).
  - d. Provide a concluding statement or section related to the opinion presented.
2. Write informative/explanatory texts to examine a topic and convey ideas and information clearly.
  - a. Introduce a topic clearly, provide a general observation and focus, and group related information logically in paragraphs and sections; include text features (e.g., headings), illustrations, and multimedia when useful to aiding comprehension.
  - b. Develop the topic with facts, definitions, concrete details, quotations, or other information and examples related to the topic.
  - c. Link ideas within and across categories of information using words, phrases, and clauses (e.g., *in contrast*, *especially*).
  - d. Use precise language and domain-specific vocabulary to inform about or explain the topic.
  - e. Provide a concluding statement or section related to the information or explanation presented.
4. Produce clear and coherent writing in which the development and organization are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in Standards 1–3.)
8. Recall relevant information from experiences or gather relevant information from print and digital sources; summarize or paraphrase information in notes and finished work, and provide a list of sources.

## Language [L]

1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking; retain and further develop language skills learned in previous grades. (See grade 5 Writing Standard 5 and Speaking and Listening Standard 6 on strengthening writing and presentations by applying knowledge of conventions.)  
*Sentence Structure and Meaning*
  - a. Use verb tense to convey various times, sequences, states, and conditions, choosing among verb tenses depending on the overall meaning of the sentence.

- b. Recognize and correct inappropriate shifts in verb tense.<sup>16</sup>
- c. Use active and passive verbs, choosing between them depending on the overall meaning of the sentence.

*Word Usage*

- d. Form and use perfect verb tenses.
2. Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.
    - a. Write legibly and fluently by hand, using either print or cursive handwriting; write their given and family name signature in cursive.
    - b. Use punctuation to separate items in a series.<sup>17</sup>
    - c. Use a comma to separate an introductory element from the rest of the sentence.
    - d. Use a comma to set off the words *yes* and *no* (e.g., *Yes, thank you*), to set off a tag question from the rest of the sentence (e.g., *It's true, isn't it?*), and to indicate direct address (e.g., *Is that you, Steve?*).
    - e. Use underlining, quotation marks, or italics to indicate titles of works.
    - f. Spell grade-appropriate words correctly, consulting references as needed.
  6. Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases, including those that signal contrast, addition, and other logical relationships (e.g., *however, although, nevertheless, similarly, moreover, in addition*).

## Mathematics

### Number and Operations in Base Ten

### 5.NBT

#### A. Understand the place value system.

1. Recognize that in a multi-digit number, including decimals, a digit in any place represents 10 times as much as it represents in the place to its right and  $\frac{1}{10}$  of what it represents in the place to its left.
3. Read, write, and compare decimals to thousandths.
  - a. Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g.,  
 $347.392 = 3 \times 100 + 4 \times 10 + 7 \times 1 + 3 \times (\frac{1}{10}) + 9 \times (\frac{1}{100}) + 2 \times (\frac{1}{1000})$ .
  - b. Compare two decimals to thousandths based on meanings of the digits in each place, using  $>$ ,  $=$ , and  $<$  symbols to record the results of comparisons.

#### B. Perform operations with multi-digit whole numbers and with decimals to hundredths.

5. Fluently multiply multi-digit whole numbers. (Include two-digit x four-digit numbers and, three-digit x three-digit numbers) using the standard algorithm.
6. Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

<sup>16</sup>These skills are particularly likely to require continued attention in higher grades as they are applied to increasingly sophisticated writing and speaking. See the table in the pre-K–5 resource section in this Framework.

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7. Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction and between multiplication and division; relate the strategy to a written method and explain the reasoning used.

## Number and Operations—Fractions

5.NF

### A. Use equivalent fractions as a strategy to add and subtract fractions.

1. Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators.
2. Solve word problems involving addition and subtraction of fractions referring to the same whole (the whole can be a set of objects), including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers.

### B. Apply and extend previous understandings of multiplication and division to multiply and divide fractions.

3. Interpret a fraction as division of the numerator by the denominator ( $\frac{a}{b} = a \div b$ ). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem.
4. Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.
  - a. Interpret the product  $\frac{a}{b} \times q$  as  $a$  parts of a partition of  $q$  into  $b$  equal parts; equivalently, as the result of a sequence of operations  $a \div b \times q$ .
  - b. Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas.
5. Interpret multiplication as scaling (resizing), by:
  - a. Comparing the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication.
  - b. Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case); explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number; and relating the principle of fraction equivalence  $\frac{a}{b} = \frac{n \times a}{n \times b}$  to the effect of multiplying  $\frac{a}{b}$  by 1.
6. Solve real-world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem.

## Measurement and Data

5.MD

### C. Geometric measurement: Understand concepts of volume and relate volume to multiplication and to addition.

3. Recognize volume as an attribute of solid figures and understand concepts of volume measurement.

- a. A cube with side length 1 unit, called a “unit cube,” is said to have “one cubic unit” of volume, and can be used to measure volume.
- b. A solid figure which can be packed without gaps or overlaps using  $n$  unit cubes is said to have a volume of  $n$  cubic units.

## Geometry

5.G

### B. Classify two-dimensional figures into categories based on their properties.

3. Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category.
4. Classify two-dimensional figures in a hierarchy based on properties.

## Science and Technology/Engineering

### Earth and Space Sciences

5-ESS

3- **ESS1-2.** Use a model to communicate Earth’s relationship to the Sun, Moon, and other stars that explain (a) why people on Earth experience day and night, (b) patterns in daily changes in length and direction of shadows over a day, and (c) changes in the apparent position of the Sun, Moon, and stars at different times during a day, over a month, and over a year.

**5-ESS2-1.** Use a model to describe the cycling of water through a watershed through evaporation, precipitation, absorption, surface runoff, and condensation.

### Life Science

5-LS

**5-LS1-1.** Ask testable questions about the process by which plants use air, water, and energy from sunlight to produce sugars and plant materials needed for growth and reproduction.

**5-LS2-1.** Develop a model to describe the movement of matter among producers, consumers, decomposers, and the air, water, and soil in the environment to (a) show that plants produce sugars and plant materials, (b) show that animals can eat plants and/or other animals for food, and (c) show that some organisms, including fungi and bacteria, break down dead organisms and recycle some materials back to the air and soil.

### Physical Science

5-PS

**5-PS1-1.** Use a particle model of matter to explain common phenomena involving gases, and phase changes between gas and liquid and between liquid and solid.

## History and Social Science

### Practice Standard 3: Organize information from multiple sources

*Teachers are encouraged to prioritize Content Standards not yet introduced, and to apply them in connection with Practice Standard 3. Content Standards from Topic 5 are identified here with the assumption that earlier Topics were introduced earlier in the year. It is critical students learn about the historical significance and lasting impact of slavery on our nation through effective instruction, which approaches the content consciously, critically, and carefully, with attention paid to context and point of view.*

### Content Topic 5: Slavery, the legacy of the Civil War and the struggle for civil rights for all [5.T5]

2. Identify the major reasons for the Civil War (e.g., slavery, political and economic competition in Western territories, the emergence of the Republican Party) and the war's most important outcomes (e.g., end of slavery, Reconstruction, expanded role of the federal government, industrial growth in the North).
3. Explain the ideas and roles of some of the people of the pre-Civil War era who led the struggle against slavery (abolitionism) and for voting and property rights for African Americans (e.g., Harriet Tubman, Nat Turner, Sojourner Truth, Frederick Douglass, William Lloyd Garrison, Harriet Beecher Stowe).
7. Explain the consequences of the Emancipation Proclamation and the 13th, 14th, and 15th Amendments for the rights of African Americans. a. advocacy for women's rights surrounding the passage of the 14th and 15th Amendments and its relationship to the later movement for women's rights b. women's attainment of the right to vote with the passage of the 19th Amendment of 1920
8. Describe living conditions for African Americans following the Civil War, during the Jim Crow era, including limited educational and economic opportunities, separate public facilities (e.g., segregated schools and colleges, neighborhoods, sections in buses, trains, restaurants, and movie theaters), the organized perpetuation of white supremacist beliefs and the threat of violence from extra-legal groups such as the Ku Klux Klan. Describe the role African American churches, civic organizations, and newspapers played in supporting and unifying African American communities. Research and analyze one of the people, organizations, events, or legislative acts from the 20th century that contributed to expanding civil rights of African Americans, women, and others in the United States.
9. Explain how the 20th century African American Civil Rights movement served as a model for other movements for civil rights (e.g., the second phase of the women's movement in the 1960s and 1970s, the disability rights movement, the LGBTQ movement).

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## Grade 6

### Reading Literature [RL]

1. Cite textual evidence to support analysis of what a text states explicitly as well as inferences drawn from the text, quoting or paraphrasing as appropriate. (See grade 6 Writing Standard 8 for more on quoting and paraphrasing.)
2. Determine a theme or central idea of a text and how it is conveyed through particular details; provide a summary of a text distinct from personal opinions or judgments.
4. Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; explain how word choice affects meaning and tone. (See grade 6 Language standards 4-6 on applying knowledge of vocabulary to reading.)

### Reading Informational Text [RI]

1. Cite textual evidence to support analysis of what a text states explicitly as well as inferences drawn from the text, quoting or paraphrasing as appropriate. (See grade 6 Writing Standard 8 for more on quoting and paraphrasing.)
2. Determine a text's central idea(s) and how particular details help convey the idea(s); provide a summary of a text distinct from personal opinions or judgments.
8. Trace and evaluate the argument and specific claims in a text, distinguishing claims that are supported by reasons and evidence from claims that are not
10. Independently and proficiently read and comprehend literature **and** literary nonfiction representing a variety of genres, cultures, and perspectives and exhibiting complexity appropriate for at least grade 6.

## Writing [W]

4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in Standards 1–3 above.)
9. Draw evidence from literary or informational texts to support written analysis, interpretation, reflection, and research, applying one or more grade 6 standards for Reading Literature or Reading Informational Text as needed.

## Language [L]

1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking; retain and further develop language skills learned in previous grades. (See grade 6 Writing Standard 5 and Speaking and Listening Standard 6 on strengthening writing and presentations by applying knowledge of conventions.)

### *Sentence Structure, Variety, and Meaning*

- a. Use simple, compound, complex, and compound-complex sentences to communicate ideas clearly and to add variety to writing.
  - b. Explain the function of phrases and clauses in general, how phrases and clauses differ, and how their use conveys a particular meaning in a specific written or spoken sentence.
  - c. Place or rearrange phrases and clauses within a sentence, recognizing and correcting misplaced and dangling modifiers
2. Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.
    - a. Use punctuation (commas, parentheses, dashes) to set off nonrestrictive/parenthetical elements
    - b. Spell correctly, recognizing that some words have commonly accepted variations (e.g., donut/doughnut).

## Grade 6

### Earth and Space Sciences

**6.MS-ESS**

**6.MS-ESS1-1a.** Develop and use a model of the Earth-Sun-Moon system to explain the causes of lunar phases and eclipses of the Sun and Moon.

**6.MS-ESS2-3.** Analyze and interpret maps showing the distribution of fossils and rocks, continental shapes, and seafloor structures to provide evidence that Earth's plates have moved great distances, collided, and spread apart.

### Life Science

**6.MS-LS**

**6.MS-LS1-2.** Develop and use a model to describe how parts of cells contribute to the cellular functions of obtaining food, water, and other nutrients from its environment, disposing of wastes, and providing energy for cellular processes.

**6.MS-LS1-3.** Construct an argument supported by evidence that the body systems interact to carry out essential functions of life.

### Physical Science

**6.MS-PS**



**6.MS-PS1-7(MA).** Use a particulate model of matter to explain that density is the amount of matter (mass) in a given volume. Apply proportional reasoning to describe, calculate, and compare relative densities of different materials.

**6.MS-PS4-2.** Use diagrams and other models to show that both light rays and mechanical waves are reflected, absorbed, or transmitted through various materials.

## Technology/Engineering

## 6.MS-ETS

**6. MS-ETS1-1.** Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution. Include potential impacts on people and the natural environment that may limit possible solutions.\*

## History and Social Science

### Grade 6 and 7

*Grades 6 and 7 form a two-year sequence in which students study regions of the world by examining physical geography, nations in the region today, and selected ancient and classical societies. The standards listed below are pre-requisites for success in grade 8.*

#### Practice Standards

2. Develop focused questions or problem statements and conduct inquiries
3. Organize information and data from multiple primary and secondary sources.

#### Content Topic 1: Studying complex societies, past and present [6.T1]

1. Explain how different academic fields in the social sciences concentrate on different means of studying societies in the past and present.
2. Give examples of ways in which a current historical interpretation might build on, extend, or reject an interpretation of the past.
3. Give examples of how archaeologists, historians, geographers, economists, and political scientists work as teams to analyze evidence, develop hypotheses, and construct interpretations of ancient and classical civilizations.

#### Content Topics 6.T2- 7.T4c

Teachers are encouraged to use Practice Standards 2 and 3 to facilitate inquiry-based investigations of a civilization/region not yet studied.

## Mathematics

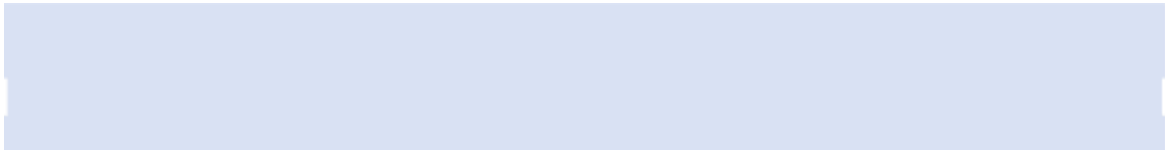
### Grade 6

#### Ratios and Proportional Relationships

#### 6.RP

**A. Understand ratio and rate concepts and use ratio and rate reasoning to solve problems.**

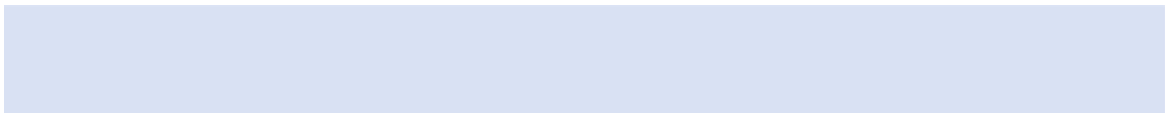
1. Understand the concept of a ratio including the distinctions between part:part and part:whole and the value of a ratio; part/part and part/whole. Use ratio language to



describe a ratio relationship between two quantities.

For example: The ratio of wings to beaks in the bird house at the zoo was 2:1, because for every two wings there was one beak; For every vote candidate A received, candidate C received nearly three votes, meaning that candidate C received three out of every four votes or  $\frac{3}{4}$  of all votes.

2. Understand the concept of a unit rate  $a/b$  associated with a ratio  $a:b$  with  $b \neq 0$ , and



use rate language in the context of a ratio relationship, *including the use of units*.

For example: This recipe has a ratio of three cups of flour to four cups of sugar, so there is  $\frac{3}{4}$  cup of flour for each cup of sugar; We paid \$75 for 15 hamburgers, which is a rate of five dollars per hamburger.<sup>1</sup>

3. Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations.
  - a. Make tables of equivalent ratios relating quantities with whole-number measurements. Find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios.



- b. Solve unit rate problems, including those involving unit pricing, and constant speed. For example, if it took seven hours to mow four lawns, then, at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed?
- c. Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means  $\frac{30}{100}$  times the quantity); solve problems involving finding the whole, given a part and the percent.
- d. Use ratio reasoning to convert measurement units within and between measurement systems; manipulate and transform units appropriately when



multiplying or dividing quantities.

For example, Malik is making a recipe, but he cannot find his measuring cups! He has, however, found a tablespoon. His cookbook says that 1 cup = 16 tablespoons. Explain how he

<sup>1</sup>Expectations for unit rates in this grade are limited to non-complex fractions.

could use the tablespoon to measure out the following ingredients: two cups of flour,  $\frac{1}{2}$  cup sunflower seed, and  $1\frac{1}{4}$  cup of oatmeal.<sup>2</sup>

- e. Solve problems that relate the mass of an object to its volume.

## The Number System

6.NS

### A. Apply and extend previous understandings of multiplication and division to divide fractions by fractions.

1. Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to

represent the problem.

For example, create a story context for  $(\frac{2}{3}) \div (\frac{3}{4})$  and use a visual fraction model to show the quotient; use the relationship between multiplication and division to explain that  $(\frac{2}{3}) \div (\frac{3}{4}) = \frac{8}{9}$  because  $\frac{3}{4}$  of  $\frac{8}{9}$  is  $\frac{2}{3}$ . In general,  $(\frac{a}{b}) \div (\frac{c}{d}) = \frac{ad}{bc}$ . How much chocolate will each person get if three people share  $\frac{1}{2}$  lb. of chocolate equally? How many  $\frac{3}{4}$ -cup servings are in  $\frac{2}{3}$  of a cup of yogurt? How wide is a rectangular strip of land with length  $\frac{3}{4}$  mile and area  $\frac{1}{2}$  square mile?

### B. Compute fluently with multi-digit numbers and find common factors and multiples.

2. Fluently divide multi-digit numbers using the standard algorithm.
3. Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.

### C. Apply and extend previous understandings of numbers to the system of rational numbers.

5. Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, and positive/negative electric charge). Use positive and negative numbers (whole numbers, fractions, and decimals) to represent quantities in real-world contexts, explaining the meaning of zero in each situation.
6. Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates.
  - a. Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize that the opposite of the opposite of a number is the number itself, e.g.,  $-(-3) = 3$ , and that zero is its own opposite.
  - b. Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane; recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes.
  - c. Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane.
8. Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances

**Pre-Requisite Content Standards for Success in the  
Following Grade**

between points with the same first coordinate or the same second coordinate.

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<sup>2</sup>Example is from the Illustrative Mathematics Project: <https://www.illustrativemathematics.org/content-standards/tasks/2174>

## Expressions and Equations

## 6.EE

### A. Apply and extend previous understandings of arithmetic to algebraic expressions.

1. Write and evaluate numerical expressions involving whole-number exponents.
2. Write, read, and evaluate expressions in which letters stand for numbers.
  - a. Write expressions that record operations with numbers and with letters standing for numbers.

For example, express the calculation “Subtract  $y$  from 5” as  $5 - y$ .

- b. Identify parts of an expression using mathematical terms (sum, term, product,

factor, quotient, and coefficient); view one or more parts of an expression as a single entity.

For example, describe the expression  $2(8 + 7)$  as a product of two factors; view  $(8 + 7)$  as both a single entity and a sum of two terms.

- c. Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those involving whole-number exponents, in the

conventional order when there are no parentheses to specify a particular order (Order of Operations).

For example, use the formulas  $V = s^3$  and  $A = 6s^2$  to find the volume and surface area of a cube with sides of length  $s = \frac{1}{2}$ .

3. Apply the properties of operations to generate equivalent expressions.

For example, apply the distributive property to the expression  $3(2 + x)$  to produce the equivalent expression  $6 + 3x$ ; apply the distributive property to the expression  $24x + 18y$  to produce the equivalent expression  $6(4x + 3y)$ ; apply properties of operations to  $y + y + y$  to produce the equivalent expression  $3y$ .

4. Identify when two expressions are equivalent (i.e., when the two expressions name the

same number regardless of which value is substituted into them).

For example, the expressions  $y + y + y$  and  $3y$  are equivalent because they name the same number regardless of which number  $y$  stands for.

### B. Reason about and solve one-variable equations and inequalities.

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

equation or inequality true.

6. Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.
7. Solve real-world and mathematical problems by writing and solving equations of the form  $x + p = q$  and  $px = q$  for cases in which  $p$ ,  $q$ , and  $x$  are all nonnegative rational numbers.

**C. Represent and analyze quantitative relationships between dependent and independent variables.**

9. Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation.

For example, in a problem involving motion at constant speed, list and graph ordered pairs of distances and times, and write the equation  $d = 65t$  to represent the relationship between distance and time.

## Geometry

### 6.G

#### **A. Solve real-world and mathematical problems involving area, surface area, and volume.**

1. Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.

## Statistics and

### Probability 6.SP

#### **B. Summarize and describe distributions.**

5. Summarize numerical data sets in relation to their context, such as by:
  - a. Reporting the number of observations.
  - b. Describing the nature of the attribute under investigation, including how it was measured and its units of measurement.
  - c. Giving quantitative measures of center (median, and/or mean) and variability (range and/or interquartile range), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered.
  - d. Relating the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered.