

MCAP EOC Tutorials for Maryland are designed specifically for the Maryland College and Career Ready Standards to prepare students for the Maryland Comprehensive Assessment Program (MCAP). EOC Categories are at the heart of MCAP EOC Tutorial structure – bringing category-based learning to the student experience, and category-based performance and progress tracking to the teacher experience.

Math Tutorials offer targeted instruction, practice and review designed to develop computational fluency, deepen conceptual understanding, and apply mathematical practices. They automatically identify and address learning gaps down to elementary-level content, using adaptive remediation to bring students to grade-level no matter where they start. Students engage with the content in an interactive, feedback-rich environment as they progress through standards-aligned modules. By constantly honing the ability to apply their knowledge in abstract and real world scenarios, students build the depth of knowledge and higher order skills required to demonstrate their mastery when put to the test.

In each module, the Learn It and Try It make complex ideas accessible to students through focused content, modeled logic and process, multi-modal representations, and personalized feedback as students reason through increasingly challenging problems. The Review It offers a high impact summary of key concepts and relates those concepts to students' lives. The Test It assesses students' mastery of the module's concepts, providing granular performance data to students and teachers after each attempt. To help students focus on the content most relevant to them, unit-level pretests and posttests can quickly identify where students are strong and where they're still learning.

Test-Taking Strategies for EOC Tutorials allow students to practice and apply learning approaches that will hone their test-taking skills and focus them for success on the day of their EOC test.

1. RATIOS AND RATES

• RATIOS

- **6.M.1b** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. b. Given a real-world situation, formulate a mathematical representation of the problem.
- **6.R.1a.a** Present solutions to multi-step problems in the form of valid chains of reasoning, using symbols such as the equal sign appropriately, or identify or describe errors in solutions to multi-step problems and present corrected solutions.
- **6.RP.A.1** Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. For example, "The ratio of wings to beaks in the bird house at the zoo was 2:1, because for every 2 wings there was 1 beak." and "For every vote candidate A received, candidate C received nearly three votes."
- **6.RP.A.3a** 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.
- **6.NS.C.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 between points with the same first coordinate or the same second coordinate.
- **6.R.2d.a** Base explanations and reasoning on a coordinate plane diagram.

• RATES AND UNIT RATES

- **6.M.1c** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. c. Given a real-world situation, use mathematical models to compute and draw conclusions.
- **6.RP.A.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. For example, "This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is $3/4$ cup of flour for each cup of sugar." and "We paid \$75 for 15 hamburgers, which is a rate of \$5 per hamburger."
- **6.M.1** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions.

- **6.M.1b** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. b. Given a real-world situation, formulate a mathematical representation of the problem.
- **6.M.1a** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. a. Given a real-world situation, identify the problem that needs to be solved, make necessary assumptions, and identify important information.
- **6.M.1d** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. d. Given a real-world situation, interpret what a solution means within the context of the situation.
- **6.M.1e** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. e. Given a real-world situation, evaluate and/or validate a partial or complete solution.
- **6.RP.A.3b** 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. b. Solve unit rate problems including those involving unit pricing and constant speed. For example, “If it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed?”
- **6.R.1a.a** Present solutions to multi-step problems in the form of valid chains of reasoning, using symbols such as the equal sign appropriately, or identify or describe errors in solutions to multi-step problems and present corrected solutions.

2. PERCENTS AND CONVERSIONS

● SOLVING PERCENT PROBLEMS

- **6.M.1** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions.
- **6.M.1b** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. b. Given a real-world situation, formulate a mathematical representation of the problem.
- **6.M.1a** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. a. Given a real-world situation, identify the problem that needs to be solved, make necessary assumptions, and identify important information.
- **6.RP.A.3c-1** 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. c-1. Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity); solve problems involving finding the whole, given a part and the percent.
- **6.M.1d** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. d. Given a real-world situation, interpret what a solution means within the context of the situation.
- **6.M.1c** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. c. Given a real-world situation, use mathematical models to compute and draw conclusions.
- **6.RP.A.3c-2** 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. c-2. Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity); solve problems involving finding the whole, given a part and the percent.
- **6.M.1e** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. e. Given a real-world situation, evaluate and/or validate a partial or complete solution.

● UNIT CONVERSIONS

- **6.M.1c** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. c. Given a real-world situation, use mathematical models to compute and draw conclusions.
- **6.RP.A.3d** 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. d. Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.
- **6.M.1** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions.
- **6.M.1b** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze

situations, make predictions, solve multi-step problems, and draw conclusions. b. Given a real-world situation, formulate a mathematical representation of the problem.

- **6.M.1a** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. a. Given a real-world situation, identify the problem that needs to be solved, make necessary assumptions, and identify important information.
- **6.M.1d** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. d. Given a real-world situation, interpret what a solution means within the context of the situation.
- **6.M.1e** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. e. Given a real-world situation, evaluate and/or validate a partial or complete solution.

3. DIVIDING FRACTIONS

● DIVIDING FRACTIONS

- **6.M.1** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions.
- **6.M.1b** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. b. Given a real-world situation, formulate a mathematical representation of the problem.
- **6.NS.A.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 $(2/3) \div (3/4)$ and use a visual fraction model to show the quotient; use the relationship between multiplication and division to explain that $(2/3) \div (3/4) = 8/9$ because $3/4$ of $8/9$ is $2/3$. (In general, $(a/b) \div (c/d) = ad/bc$.) How much chocolate will each person get if 3 people share $1/2$ lb of chocolate equally? How many $3/4$ -cup servings are in $2/3$ of a cup of yogurt? How wide is a rectangular strip of land with length $3/4$ mi and area $1/2$ square mi?
- **6.R.2a.a** Base arithmetic explanations and reasoning on concrete referents such as diagrams, connecting the diagrams to a written (symbolic) method. For example, how many pounds of chocolate will each person receive if 3 people share $1/2$ lb of chocolate equally? [Graphic cannot be reproduced.]
- **6.R.2b.a** Base explanations and reasoning on the relationship between multiplication and division.

● SOLVING PROBLEMS BY DIVIDING FRACTIONS

- **6.NS.A.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 $(2/3) \div (3/4)$ and use a visual fraction model to show the quotient; use the relationship between multiplication and division to explain that $(2/3) \div (3/4) = 8/9$ because $3/4$ of $8/9$ is $2/3$. (In general, $(a/b) \div (c/d) = ad/bc$.) How much chocolate will each person get if 3 people share $1/2$ lb of chocolate equally? How many $3/4$ -cup servings are in $2/3$ of a cup of yogurt? How wide is a rectangular strip of land with length $3/4$ mi and area $1/2$ square mi?
- **6.R.2a.a** Base arithmetic explanations and reasoning on concrete referents such as diagrams, connecting the diagrams to a written (symbolic) method. For example, how many pounds of chocolate will each person receive if 3 people share $1/2$ lb of chocolate equally? [Graphic cannot be reproduced.]
- **6.R.2b.a** Base explanations and reasoning on the relationship between multiplication and division.
- **6.M.1** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions.
- **6.M.1b** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. b. Given a real-world situation, formulate a mathematical representation of the problem.

4. NUMBER SENSE

● DIVIDING MULTI-DIGIT WHOLE NUMBERS

- **6.NS.B.2** Fluently divide multi-digit numbers using the standard algorithm.
- **6.M.1d** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. d. Given a real-world situation, interpret what a solution means within the context of the situation.

● DECIMAL OPERATIONS

- **6.NS.B.3-4** Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.
- **6.NS.B.3-3** Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.
- **6.NS.B.3-1** Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.
- **6.NS.B.3-2** Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.
- **6.M.1c** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. c. Given a real-world situation, use mathematical models to compute and draw conclusions.

- **GREATEST COMMON FACTOR AND LEAST COMMON MULTIPLE**

- **6.NS.B.4-1** Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers 1–100 with a common factor as a multiple of a sum of two whole numbers with no common factor. For example, express $36 + 8$ as $4(9 + 2)$.
- **6.NS.B.4-2** Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers 1–100 with a common factor as a multiple of a sum of two whole numbers with no common factor. For example, express $36 + 8$ as $4(9 + 2)$.
- **6.M.1c** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. c. Given a real-world situation, use mathematical models to compute and draw conclusions.

5. SIGNED NUMBERS

- **SIGNED NUMBERS**

- **6.M.1b** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. b. Given a real-world situation, formulate a mathematical representation of the problem.
- **6.NS.C.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, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation.
- **6.R.2c.a** Base explanations and reasoning on a number line diagram.
- **6.NS.C.6a** Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates. a. Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize that the opposite of the opposite of a number is the number itself, e.g., $-(-3) = 3$, and that 0 is its own opposite.
- **6.NS.C.6c-1** 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. c-1. 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.

- **INEQUALITIES AND COMPARISON**

- **6.NS.C.7b** Understand ordering and absolute value of rational numbers. b. Write, interpret, and explain statements of order for rational numbers in real-world contexts. For example, write $-3^{\circ}\text{C} > -7^{\circ}\text{C}$ to express the fact that -3°C is warmer than -7°C .
- **6.R.2c.a** Base explanations and reasoning on a number line diagram.
- **6.NS.C.7a** Understand ordering and absolute value of rational numbers. a. Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram. For example, interpret $-3 > -7$ as a statement that -3 is located to the right of -7 on a number line oriented from left to right.
- **6.M.1b** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. b. Given a real-world situation, formulate a mathematical representation of the problem.

- **ABSOLUTE VALUE**

- **6.M.1b** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. b. Given a real-world situation, formulate a

mathematical representation of the problem.

- **6.NS.C.6c-1** 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. c-1. Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane.
- **6.NS.C.7c-1** Understand ordering and absolute value of rational numbers. c-1. Understand the absolute value of a rational number as its distance from 0 on the number line. Interpret absolute value as magnitude for a positive or negative quantity in a real-world situation. For example, for an account balance of -30 dollars, write $|-30| = 30$ to describe the size of the debt in dollars.
- **6.R.2c.a** Base explanations and reasoning on a number line diagram.
- **6.NS.C.7c-2** Understand ordering and absolute value of rational numbers. c-2. Understand the absolute value of a rational number as its distance from 0 on the number line; interpret absolute value as magnitude for a positive or negative quantity in a real-world situation. For example, for an account balance of -30 dollars, write $|-30| = 30$ to describe the size of the debt in dollars.
- **6.NS.C.7b** Understand ordering and absolute value of rational numbers. b. Write, interpret, and explain statements of order for rational numbers in real-world contexts. For example, write $-3^{\circ}\text{C} > -7^{\circ}\text{C}$ to express the fact that -3°C is warmer than -7°C .
- **6.NS.C.7d** Understand ordering and absolute value of rational numbers. d. Distinguish comparisons of absolute value from statements about order. For example, recognize that an account balance less than -30 dollars represents a debt greater than 30 dollars.

6. THE COORDINATE PLANE

• PLOTTING POINTS IN THE COORDINATE PLANE

- **6.NS.C.6c-1** 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. c-1. Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane.
- **6.NS.C.6b-2** 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. b-2. 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.
- **6.NS.C.6b-1** 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. b-1. 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.
- **6.NS.C.6c-2** 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. c-2. Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane.
- **6.M.1b** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. b. Given a real-world situation, formulate a mathematical representation of the problem.
- **6.NS.C.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 between points with the same first coordinate or the same second coordinate.
- **6.R.2d.a** Base explanations and reasoning on a coordinate plane diagram.
- **6.G.A.3** Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving real-world and mathematical problems.

• QUADRANTS AND AXES

- **6.NS.C.6b-1** 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. b-1. 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.
- **6.R.2d.a** Base explanations and reasoning on a coordinate plane diagram.
- **6.NS.C.6b-2** 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. b-2. 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.

- **6.M.1c** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. c. Given a real-world situation, use mathematical models to compute and draw conclusions.
- **6.NS.C.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 between points with the same first coordinate or the same second coordinate.
- **6.G.A.3** Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving real-world and mathematical problems.
- **6.NS.C.6c-2** 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. c-2. 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.

● USING GRAPHS TO SOLVE PROBLEMS

- **6.G.A.3** Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving real-world and mathematical problems.
- **6.NS.C.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 between points with the same first coordinate or the same second coordinate.
- **6.NS.C.6c-2** 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. c-2. Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane.
- **6.M.1c** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. c. Given a real-world situation, use mathematical models to compute and draw conclusions.
- **6.R.2d.a** Base explanations and reasoning on a coordinate plane diagram.

● COORDINATE GEOMETRY

- **6.G.A.3** Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving real-world and mathematical problems.
- **6.M.1c** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. c. Given a real-world situation, use mathematical models to compute and draw conclusions.
- **6.NS.C.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 between points with the same first coordinate or the same second coordinate.
- **6.R.2d.a** Base explanations and reasoning on a coordinate plane diagram.

7. FORMULATING AND SIMPLIFYING EXPRESSIONS

● EXPONENTS

- **6.EE.A.1-2** Write and evaluate numerical expressions involving whole-number exponents.
- **6.EE.A.2c-1** Write, read, and evaluate expressions in which letters stand for numbers. c-1. 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 $s = 1/2$.
- **6.EE.A.1-1** Write and evaluate numerical expressions involving whole-number exponents.
- **6.M.1c** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. c. Given a real-world situation, use

mathematical models to compute and draw conclusions.

● WRITING EXPRESSIONS

- **6.M.1** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions.
- **6.M.1b** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. b. Given a real-world situation, formulate a mathematical representation of the problem.
- **6.EE.B.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.
- **6.EE.A.2a** 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 $5 - y$.
- **6.EE.A.1-1** Write and evaluate numerical expressions involving whole-number exponents.
- **6.M.1a** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. a. Given a real-world situation, identify the problem that needs to be solved, make necessary assumptions, and identify important information.
- **6.M.1c** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. c. Given a real-world situation, use mathematical models to compute and draw conclusions.

8. ALGEBRAIC EXPRESSIONS

● UNDERSTANDING PARTS OF EXPRESSIONS

- **6.EE.A.2b** Write, read, and evaluate expressions in which letters stand for numbers. b. Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity. For example, describe the expression $2(8 + 7)$ as a product of two factors; view $(8 + 7)$ as both a single entity and a sum of two terms.
- **6.M.1a** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. a. Given a real-world situation, identify the problem that needs to be solved, make necessary assumptions, and identify important information.
- **6.R.3a.a** Base explanations and reasoning on the properties of operations.

● EVALUATING EXPRESSIONS

- **6.EE.A.2c-2** Write, read, and evaluate expressions in which letters stand for numbers. c-2. 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 $s = 1/2$.
- **6.M.1** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions.
- **6.M.1a** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. a. Given a real-world situation, identify the problem that needs to be solved, make necessary assumptions, and identify important information.
- **6.M.1d** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. d. Given a real-world situation, interpret what a solution means within the context of the situation.
- **6.M.1c** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. c. Given a real-world situation, use mathematical models to compute and draw conclusions.
- **6.M.1e** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. e. Given a real-world situation, evaluate and/or validate a partial or complete solution.
- **6.EE.A.2c-1** Write, read, and evaluate expressions in which letters stand for numbers. c-1. 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 $s = 1/2$.

- o **6.R.3a.a** Base explanations and reasoning on the properties of operations.

- **EQUIVALENT EXPRESSIONS**

- o **6.M.1a** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. a. Given a real-world situation, identify the problem that needs to be solved, make necessary assumptions, and identify important information.
- o **6.R.3a.a** Base explanations and reasoning on the properties of operations.
- o **6.EE.A.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.
- o **6.EE.A.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 $3y$.

9. SOLVING EQUATIONS AND INEQUALITIES 1

- **SOLUTIONS OF EQUATIONS AND INEQUALITIES**

- o **6.EE.B.5-1** 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.
- o **6.EE.B.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.
- o **6.EE.B.5-2** 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.
- o **6.M.1c** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. c. Given a real-world situation, use mathematical models to compute and draw conclusions.
- o **6.R.3b.a** Given an equation, present the solution steps as a logical argument that concludes with a solution.

- **WRITING EXPRESSIONS TO SOLVE PROBLEMS**

- o **6.M.1b** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. b. Given a real-world situation, formulate a mathematical representation of the problem.
- o **6.M.1a** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. a. Given a real-world situation, identify the problem that needs to be solved, make necessary assumptions, and identify important information.
- o **6.M.1d** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. d. Given a real-world situation, interpret what a solution means within the context of the situation.
- o **6.M.1e** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. e. Given a real-world situation, evaluate and/or validate a partial or complete solution.
- o **6.EE.B.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.
- o **6.EE.A.2a** 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 $5 - y$.
- o **6.EE.C.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.

- **6.M.1** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions.
- **6.M.1c** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. c. Given a real-world situation, use mathematical models to compute and draw conclusions.
- **6.EE.A.2c-1** Write, read, and evaluate expressions in which letters stand for numbers. c-1. 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 $s = 1/2$.
- **6.R.3d.a** Present solutions to multi-step problems in the form of valid chains of reasoning, adhering to precision.
- **6.R.3d.b** Identify or describe errors in solutions to multi-step problems and present corrected solutions.

● SOLVING ADDITION EQUATIONS

- **6.R.3b.a** Given an equation, present the solution steps as a logical argument that concludes with a solution.
- **6.EE.B.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.
- **6.EE.B.5-2** 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.M.1b** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. b. Given a real-world situation, formulate a mathematical representation of the problem.
- **6.M.1a** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. a. Given a real-world situation, identify the problem that needs to be solved, make necessary assumptions, and identify important information.
- **6.M.1** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions.
- **6.M.1d** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. d. Given a real-world situation, interpret what a solution means within the context of the situation.
- **6.M.1c** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. c. Given a real-world situation, use mathematical models to compute and draw conclusions.
- **6.M.1e** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. e. Given a real-world situation, evaluate and/or validate a partial or complete solution.

10. SOLVING EQUATIONS AND INEQUALITIES 2

● SOLVING MULTIPLICATION EQUATIONS

- **6.R.3b.a** Given an equation, present the solution steps as a logical argument that concludes with a solution.
- **6.EE.B.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.
- **6.EE.B.5-2** 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.M.1b** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. b. Given a real-world situation, formulate a mathematical representation of the problem.
- **6.M.1a** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. a. Given a real-world situation, identify the problem that needs to be solved, make necessary assumptions, and identify important information.
- **6.M.1** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions.
- **6.M.1c** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. c. Given a real-world situation, use mathematical models to compute and draw conclusions.

- **6.M.1e** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. e. Given a real-world situation, evaluate and/or validate a partial or complete solution.
- **6.M.1d** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. d. Given a real-world situation, interpret what a solution means within the context of the situation.

● SOLVING INEQUALITIES

- **6.M.1a** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. a. Given a real-world situation, identify the problem that needs to be solved, make necessary assumptions, and identify important information.
- **6.EE.B.8** Write an inequality of the form $x > c$ or $x < c$ to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities of the form $x > c$ or $x < c$ have infinitely many solutions; represent solutions of such inequalities on number line diagrams.
- **6.EE.B.5-2** 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.M.1b** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. b. Given a real-world situation, formulate a mathematical representation of the problem.
- **6.M.1d** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. d. Given a real-world situation, interpret what a solution means within the context of the situation.
- **6.M.1e** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. e. Given a real-world situation, evaluate and/or validate a partial or complete solution.
- **6.M.1** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions.
- **6.M.1c** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. c. Given a real-world situation, use mathematical models to compute and draw conclusions.
- **6.R.3b.a** Given an equation, present the solution steps as a logical argument that concludes with a solution.

11. EXPRESSIONS AND EQUATIONS

● INDEPENDENT AND DEPENDENT VARIABLES

- **6.EE.B.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.
- **6.EE.C.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.
- **6.M.1b** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. b. Given a real-world situation, formulate a mathematical representation of the problem.
- **6.M.1** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions.
- **6.M.1a** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. a. Given a real-world situation, identify the problem that needs to be solved, make necessary assumptions, and identify important information.
- **6.R.3d.a** Present solutions to multi-step problems in the form of valid chains of reasoning, adhering to precision.
- **6.R.3d.b** Identify or describe errors in solutions to multi-step problems and present corrected solutions.

● MULTIPLE REPRESENTATIONS: TABLES, GRAPHS, AND EQUATIONS

- **6.M.1b** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze

situations, make predictions, solve multi-step problems, and draw conclusions. b. Given a real-world situation, formulate a mathematical representation of the problem.

- **6.M.1a** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. a. Given a real-world situation, identify the problem that needs to be solved, make necessary assumptions, and identify important information.
- **6.EE.C.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.
- **6.M.1** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions.
- **6.M.1c** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. c. Given a real-world situation, use mathematical models to compute and draw conclusions.
- **6.R.3d.a** Present solutions to multi-step problems in the form of valid chains of reasoning, adhering to precision.
- **6.R.3d.b** Identify or describe errors in solutions to multi-step problems and present corrected solutions.

12. GEOMETRY

• AREA

- **6.M.1** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions.
- **6.G.A.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.
- **6.M.1a** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. a. Given a real-world situation, identify the problem that needs to be solved, make necessary assumptions, and identify important information.
- **6.M.1b** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. b. Given a real-world situation, formulate a mathematical representation of the problem.
- **6.M.1d** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. d. Given a real-world situation, interpret what a solution means within the context of the situation.
- **6.M.1c** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. c. Given a real-world situation, use mathematical models to compute and draw conclusions.
- **6.M.1e** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. e. Given a real-world situation, evaluate and/or validate a partial or complete solution.

• VOLUME

- **6.M.1** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions.
- **6.G.A.2-1** Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas $V = lwh$ and $V = Bh$ to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.
- **6.M.1a** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. a. Given a real-world situation, identify the problem that needs to be solved, make necessary assumptions, and identify important information.
- **6.G.A.2-2** Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas $V = lwh$ and $V = Bh$ to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.
- **6.M.1b** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. b. Given a real-world situation, formulate a

mathematical representation of the problem.

- **6.M.1d** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. d. Given a real-world situation, interpret what a solution means within the context of the situation.
- **6.M.1c** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. c. Given a real-world situation, use mathematical models to compute and draw conclusions.
- **6.M.1e** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. e. Given a real-world situation, evaluate and/or validate a partial or complete solution.

● **SOLID FIGURES**

- **6.M.1** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions.
- **6.M.1b** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. b. Given a real-world situation, formulate a mathematical representation of the problem.
- **6.M.1a** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. a. Given a real-world situation, identify the problem that needs to be solved, make necessary assumptions, and identify important information.
- **6.G.A.4** Represent three-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems.
- **6.M.1d** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. d. Given a real-world situation, interpret what a solution means within the context of the situation.
- **6.M.1c** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. c. Given a real-world situation, use mathematical models to compute and draw conclusions.
- **6.M.1e** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. e. Given a real-world situation, evaluate and/or validate a partial or complete solution.

13. INTRODUCTION TO STATISTICS

● **STATISTICAL QUESTIONS AND DATA DISTRIBUTIONS**

- **6.M.1a** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. a. Given a real-world situation, identify the problem that needs to be solved, make necessary assumptions, and identify important information.
- **6.SP.A.2** Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape.
- **6.SP.A.1** Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers. For example, "How old am I?" is not a statistical question, but "How old are the students in my school?" is a statistical question because one anticipates variability in students' ages.
- **6.M.1** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions.
- **6.SP.A.3** Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number.
- **6.SP.B.5.c** Giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered.
- **6.M.1c** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. c. Given a real-world situation, use mathematical models to compute and draw conclusions.

● **MEASURES OF CENTER AND VARIABILITY**

- **6.M.1a** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. a. Given a real-world situation, identify the

problem that needs to be solved, make necessary assumptions, and identify important information.

- **6.SP.A.3** Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number.
- **6.SP.B.5.c** Giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered.
- **6.SP.A.2** Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape.
- **6.M.1** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions.
- **6.M.1b** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. b. Given a real-world situation, formulate a mathematical representation of the problem.
- **6.M.1d** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. d. Given a real-world situation, interpret what a solution means within the context of the situation.
- **6.M.1c** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. c. Given a real-world situation, use mathematical models to compute and draw conclusions.

14. STATISTICAL DISPLAYS

• BOX PLOTS

- **6.SP.A.3** Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number.
- **6.SP.B.5.c** Giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered.
- **6.M.1c** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. c. Given a real-world situation, use mathematical models to compute and draw conclusions.
- **6.M.1** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions.
- **6.M.1b** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. b. Given a real-world situation, formulate a mathematical representation of the problem.
- **6.SP.B.4** Display numerical data in plots on a number line, including dot plots, histograms, and box plots.
- **6.M.1a** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. a. Given a real-world situation, identify the problem that needs to be solved, make necessary assumptions, and identify important information.
- **6.M.1d** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. d. Given a real-world situation, interpret what a solution means within the context of the situation.

• DOT PLOTS AND HISTOGRAMS

- **6.M.1** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions.
- **6.M.1b** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. b. Given a real-world situation, formulate a mathematical representation of the problem.
- **6.SP.B.4** Display numerical data in plots on a number line, including dot plots, histograms, and box plots.
- **6.M.1a** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. a. Given a real-world situation, identify the problem that needs to be solved, make necessary assumptions, and identify important information.
- **6.M.1d** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. d. Given a real-world situation, interpret what a solution means within the context of the situation.

- **6.M.1c** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. c. Given a real-world situation, use mathematical models to compute and draw conclusions.

15. SUMMARIZING DATA

● COLLECTING DATA

- **6.M.1a** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. a. Given a real-world situation, identify the problem that needs to be solved, make necessary assumptions, and identify important information.
- **6.SP.B.5.a** Reporting the number of observations.
- **6.SP.B.5.b** Describing the nature of the attribute under investigation, including how it was measured and its units of measurement.

● SUMMARIZING DATA USING MEASURES OF CENTER AND VARIABILITY

- **6.SP.B.5.c** Giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered.
- **6.M.1** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions.
- **6.M.1d** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. d. Given a real-world situation, interpret what a solution means within the context of the situation.
- **6.M.1c** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. c. Given a real-world situation, use mathematical models to compute and draw conclusions.
- **6.M.1e** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. e. Given a real-world situation, evaluate and/or validate a partial or complete solution.
- **6.M.1a** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. a. Given a real-world situation, identify the problem that needs to be solved, make necessary assumptions, and identify important information.
- **6.SP.A.3** Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number.
- **6.SP.A.2** Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape.

● CHOOSING APPROPRIATE MEASURES TO SUMMARIZE DATA SETS

- **6.M.1** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions.
- **6.M.1a** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. a. Given a real-world situation, identify the problem that needs to be solved, make necessary assumptions, and identify important information.
- **6.SP.A.3** Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number.
- **6.SP.B.5.c** Giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered.
- **6.M.1d** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. d. Given a real-world situation, interpret what a solution means within the context of the situation.
- **6.M.1c** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. c. Given a real-world situation, use mathematical models to compute and draw conclusions.
- **6.M.1e** Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions. e. Given a real-world situation, evaluate and/or validate a partial or complete solution.

- **6.SP.A.2** Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape.
- **6.SP.B.5.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.

16. TEST-TAKING STRATEGIES

- **STUDY HABITS**
- **BEING PREPARED AND GETTING STARTED**
- **WORDING IN TEST QUESTIONS**
- **WORDING IN ANSWER CHOICES**
- **QUESTIONS WITH PASSAGES AND VISUAL DATA**
- **ESSAY AND SHORT ANSWER QUESTIONS**
- **WORD PROBLEMS**