Matanuska-Susitna Borough School District
6th Grade Math Standards

MAJOR, SUPPORTING, AND ADDITIONAL CLUSTERS FOR GRADE 6

Students should spend the large majority of their time on the major work of the grade (🟩). Supporting work (⬜) and, where appropriate, additional work (🟡) can engage students in the major work of the grade. Please click on the link for the reference website: Student Achievement Partners (SAP)

Key:	🟩 Major Clusters	⬜ Supporting Clusters	🟡 Additional Clusters

6.RP.A	🟩	Understand ratio concepts and use rational reasoning to solve problems.
6.NS.A	🟩	Apply and extend previous understandings of multiplication and division to divide fractions by fractions.
6.NS.B	🟡	Compute fluently with multi-digit numbers and find common factors and multiples.
6.NS.C	🟩	Apply and extend previous understandings of numbers to the system of rational numbers.
6.EE.A	🟩	Apply and extend previous understandings of arithmetic to algebraic expressions.
6.EE.B	🟩	Reason about and solve one-variable equations and inequalities.
6.EE.C	🟩	Represent and analyze quantitative relationships between dependent and independent variables.
6.G.A	⬜	Solve real-world and mathematical problems involving area, surface area, and volume.
6.SP.A	🟡	Develop understanding of statistical variability.
6.SP.B	🟡	Summarize and describe distributions.

1st Semester	2nd Semester
Ready Classroom Standards/Lessons Alignment Coming Soon	

Matanuska-Susitna Borough School District
6ᵗʰ Grade Ready Classroom Textbook to Curriculum Map Alignment for Alaska State Standards

Students use reasoning about multiplication and division to solve ratio and rate problems about quantities. By viewing equivalent ratios and rates as deriving from, and extending, pairs of rows (or columns) in the multiplication table, and by analyzing simple drawings that indicate the relative size of quantities, students connect their understanding of multiplication and division with ratios and rates. Thus, students expand the scope of problems for which they can use multiplication and division to solve programs, and they connect ratios and fractions. Students solve a wide variety of problems involving ratios and rates.

Clusters	State of Alaska Standards	Ready Classroom Lessons	Additional Resources
Understand ratio concepts and use ratio reasoning to solve problems.	**6.RP.1** Write and describe the relationship in real life context between two questions using ratio language. *For example: "The ratio of wings to beaks in the bird house at the zoo was 2:1, because for every 2 wings there was 1 beak." "For every vote Candidate A received, Candidate C received nearly three votes."*	**Lesson 12:** Understand Ratio Concepts **Math in Action**: 329-342 **Additional Content:** Lesson 13: Find Equivalent Ratios	**6.RP.1** **Illustrative Mathematics** Games at recess Assessment variation
	6.RP.2 Understand the concept of a unit rate a/b associated with a ratio a:b with b ≠ 0, and use rate language in the context of a ratio relationship. *For example: "This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is ¾ cup of flour for each cup of sugar." "We paid $75 for 15 hamburgers, which is a rate of $5 per hamburger."*	**Lesson 15:** Understand Rate Concepts **Math in Action**: 419-432 **Additional Content:** Lesson 16: Use Unit Rates to Solve Problems	**6.RP.2** **Illustrative Mathematics** Mangos for sale Price per pound and pounds per dollar
	6.RP.3 Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations. a. Make tables of equivalent ratios relating quantities with whole number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios. b. Solve unit rate problems including those involving unit pricing and constant speed. *For example: If it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed?* c. Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity); solve problems involving finding the whole, given a part and the percent. d. Use rational reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.	**6.RP.3.a**. **Lesson 13**: Find Equivalent Ratios **Lesson 14:** Use Part-to-Part and Part-to- Whole Ratios **Math in Action:** 329-342 **6.RP.3.b.** **Lesson 16**: Use Unit Rates to Solve Problems **Math in Action**: 419-432 **Additional Content:** Lesson 13: Find Equivalent Ratios **6.RP.3.c.** **Lesson 17**: Understand Percents **Lesson 18**: Use Percents to Solve Problems **Additional Content: Math in Action:** 419-432 **6.RP.3.d.** **Lesson 16:** Use Unit Rates to Solve Problems **Math in Action:** 419-432 **Additional Content:** Lesson 21: Write and Solve One-Variable Equations; Lesson 22: Analyze Two- Variable Relationships	**6.RP.3a** **Illustrative Mathematics** Walk-a-thon 1, Gianna's Job **6.RP.3b** **Illustrative Mathematics** Friends meeting on bicycles, Running at a constant speed **6.RP.3c** **Illustrative Mathematics** Overlapping squares, shirt sale **6.RP.3d** **Illustrative Mathematics** Speed conversions, Unit conversions **Mathematics Assessment Project** Sharing costs: Traveling to school, solving real-life problems: Selling

The Number System

Description of the critical area: Students use the meaning of fractions, the meanings of multiplication and division, and the relationship between multiplication and division to understand and explain why the procedures for dividing fractions make sense. Students use these operations to solve problems. Students extend their previous understandings of number and the ordering of numbers to the full system of rational numbers, which includes negative rational numbers and, in particular, negative integers. They reason about the order and absolute value of rational numbers and about the location of points in all four quadrants of the coordinate plane.

Clusters	State of Alaska Standards	Ready Classroom Lessons	Additional Resources
Apply and extend previous understandings of multiplication and division to divide fractions by fractions.	**6.NS.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) ÷ (3/4) and use a visual fraction model to show the quotient; use the relationship between multiplication and division to explain that (2/3) ÷ (3/4) = 8/9 because ¾ of 8/9 is 2/3. (In general: (a/b) ÷ (c/d) = ad/bc) How much chocolate will each person get if 3 people share ½ lb of chocolate equally? How many ¾ cup servings are in 2/3 of a cup of yogurt? How wide is a rectangular strip of land with length ¾ mi and area ½ square mi?*	**Lesson 9:** Understand Division with Fractions **Lesson 10:** Divide Fractions **Math in Action:** 251-264 **Additional Content:** Lesson 11: Solve Volume Problems with Fractions; Lesson 21: Write and Solve One- Variable Equations	**6.NS.1** **Illustrative Mathematics** Baking cookies, Video game credits, Cup of rice Need more models and real-world applications. **Suggested tasks:** How many containers in one cup/cups in one container? **Illustrative Mathematics** 6th Grade Number system task, Video game credits No multiplying of whole numbers in the book. Review multiplication of whole numbers. No explanation of expressing remainder in book. Review how to express a remainder.
Compute fluently with multi-digit numbers and find common factors and multiples.	**6.NS.2** Fluently multiply and divide multi-digit numbers using the standard algorithm. Express the remainder as a whole number, decimal, or simplified fraction; explain or justify your choice based on the context of the problem.	**Lesson 8:** Divide Whole Numbers and Multi- Digit Decimals **Math in Action:** 251-264 **Additional Content:** Lesson 21: Write and Solve One-Variable Equations; Lesson 32: Interpret Mean and Mean Absolute Deviation; Lesson 33: Use Measures of Center and Variability to Summarize Data	**6.NS.2** **Illustrative Mathematics** Interpreting a division computation batting average, how many staples?
	6.NS.3 Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation. Express the remainder as a terminating decimal, or a repeating decimal, or rounded to a designated place value.	**Lesson 7**: Add, Subtract, and Multiply Multi- Digit Decimals **Lesson 8**: Divide Whole Numbers and Multi- Digit Decimals **Math in Action**: 251-264	**6.NS.3** **Illustrative Mathematics** Jayden's snacks, gifts from Grandma, buying gas, reviewing rounding, terminating decimal

		Additional Content:	
		Lesson 1: Find the Area of a Parallelogram; Lesson 2: Find the Area of Triangles and Other Polygons; Lesson 3: Use Nets to Find Surface Area; Lesson 16: Use Unit Rates to Solve Problems; Lesson 18: Use Percents to Solve Problems; Lesson 21: Write and Solve One-Variable Equations; Lesson 31: Interpret Median and Interquartile Range in Box Plots; Lesson 32: Interpret Mean and Mean Absolute Deviation; Lesson 33: Use Measures of Center and Variability to Summarize Data	
	6.NS 4 Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers 1-100 with a common factor as a multiple of a sum of two whole numbers with no common factor. *For example: Express 36 + 8 as 4 (9+2).*	**Lesson 6:** Find Greatest Common Factor and Least Common Multiple **Lesson 19**: Write and Identify Equivalent Expressions **Math in Action**: 129-142; 525-538	**6.NS.4** **Illustrative Mathematics** Factors and Common Factors, Multiples and Common Multiples, The Florist Shop **Mathematics Assessment Project** Using standard algorithms, Factors and Multiples
Apply and extend previous understandings of numbers to the system of rational numbers.	**6.NS.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.	**Lesson 23:** Understand Positive and Negative Numbers **Math in Action**: 643-656 **Additional Content:** Lesson 24: Order Positive and Negative Numbers; Lesson 25: Understand Absolute Value; Lesson 26: Write and Graph One- Variable Inequalities; Lesson 27: Understand the Four-Quadrant Coordinate Plane	**6.NS.5** **Illustrative Mathematics** It's warmer in Miami, mile high
	6.NS.6 Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates. a. Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize that the opposite of the opposite of a number is the number itself, e.g., -(-3) = 3, and that 0 is its own opposite. b. Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane; recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes.	**6.NS.6** **Lesson 23:** Understand Positive and Negative Numbers **Lesson 27**: Understand the Four-Quadrant Coordinate Plane **6.NS.6a** **Lesson 23:** Understand Positive and Negative Numbers **Additional Content:** Lesson 27: Understand the Four-Quadrant Coordinate Plane **6.NS.6b**	**6.NS.6a** **Illustrative Mathematics** Integers on the Number line 2 **6.NS.6b** **Illustrative Mathematics** Reflecting points over coordinate axes **6.NS.6c** **Illustrative Mathematics**

	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.	**Lesson 27:** Understand the Four-Quadrant Coordinate Plane **Math in Action:** 643-656 **Additional Content:** Lesson 28: Solve Problems in the Coordinate Plane **6.NS.6c** **Lesson 27:** Understand the Four-Quadrant Coordinate Plane **Math in Action:** 643-656 **Additional Content:** Lesson 28: Solve Problems in the Coordinate Plane	Plotting points in the coordinate plane **Inside Mathematics** Percent cards
	6.NS.7 Understand ordering and absolute value of rational numbers. a. Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram. *For example: Interpret -3 >-7 as a statement that -3 is located to the right of -7 on a number line oriented from left to right.* b. Write, interpret, and explain statements of order for rational numbers in real-world contexts. *For example: Write -3°C >-7°C to express the fact that -3°C is warmer that -7°C.* c. Understand the absolute value of a rational number as its distance from 0 on the number line; Interpret absolute value as magnitude for a positive or negative quantity in a real-world situation. *For example: For an account balance of -30 dollars, write [-30] = 30 to describe the size of the debt in dollars.* d. Distinguish comparisons of absolute value from statements about order. *For example: Recognize that an account balance less than -30 dollars represents a debt greater than 30 dollars.*	**6.NS.7** **Lesson 24:** Order Positive and Negative Numbers **Lesson 25:** Understand Absolute Value **6.NS.7a** **Lesson 24:** Order Positive and Negative Numbers **Additional Content:** Lesson 26: Write and Graph One-Variable Inequalities **6.NS.7b** **Lesson 24:** Order Positive and Negative Numbers **Additional Content:** Lesson 26: Write and Graph One-Variable Inequalities **6.NS.7c** **Lesson 25:** Understand Absolute Value **Math in Action**: 643-656 **Additional Content:** Lesson 28: Solve Problems in the Coordinate Plane	**6.NS.7** **Illustrative Mathematics** Jumping flea, Above and below sea level **6.NS.7a** **Illustrative Mathematics** Integers on the Number line 1, Fractions on the Number line **6.NS.7b** **Illustrative Mathematics** Comparing temperatures

		6.NS.7d **Lesson 25:** Understand Absolute Value **Math in Action**: 643-656	
	6.NS.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.8** **Lesson 28:** Solve Problems in the Coordinate Plane **Math in Action:** 643-656	**6.NS.8** **Illustrative Mathematics** Distance between points **Mathematics Assessment Project** Fractions, Decimals and percent's, Adding and subtracting directed numbers, Evaluating statements about number operations

Expressions and Equations

Students understand the use of variables in mathematical expressions. They write expressions and equations that correspond to given situations, evaluate expressions, and use expressions and formulas to solve problems. Students understand that expressions in different forms can be equivalent, and they use the properties of operations to rewrite expressions in equivalent forms. Students know that the solutions of an equation are the values of the variables that make the equation true. Students use properties of operations and the idea of maintaining the equality of both sides of an equation to solve simple one-step equations. Students construct and analyze tables, such as tables of quantities that are in equivalent ratios, and they use equations (such as $3x = y$) to describe relationships between quantities.

Clusters	State of Alaska Standards	Ready Classroom Lessons	Additional Resources
Apply and extend previous understandings of arithmetic to algebraic expressions	**6.EE.1.** Write and evaluate numerical expressions involving whole- number exponents. *For example, multiply by powers of 10 and products of numbers using exponents. (73 = 7•7•7)*	**6.EE.1** **Lesson 5:** Write and Evaluate Expressions with Exponents **Additional Content:** Lesson 6: Find Greatest Common Factor and Least Common Multiple; Lesson 7: Add, Subtract, and Multiply Multi-Digit Decimals	**6.EE.1** **Illustrative Mathematics** The Djinni's Offer, G Sierpinski's Carpet
	6.EE.2. Write, read, and evaluate expressions in which letters stand for numbers. a. Write expressions that record operations with numbers and with letters standing for numbers. *For example, express the calculation "Subtract y from 5" as $5 - y$.* b. Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity. *For example, describe the expression 2 (8 + 7) as a product of two factors; view (8 + 7) as both a single entity and a sum of two terms.* c. Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those involving whole-number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations). *For example, use the formulas $V = s^3$ and $A = 6 s^2$ to find the volume and surface area of a cube with sides of length s = 1/2.*	**6.EE.2** **Lesson 4:** Work with Algebraic Expressions **Lesson 5:** Write and Evaluate Expressions with Exponents **6.EE.2a** **Lesson 4:** Work with Algebraic Expressions **Math in Action**: 129-142 **Additional Content:** Lesson 1: Find the Area of a Parallelogram; Lesson 2: Find the Area of Triangles and Other Polygons; Lesson 3: Use Nets to Find Surface Area; Lesson 5: Write and Evaluate Expressions with Exponents **6.EE.2b** **Lesson 4**: Work with Algebraic Expressions **Additional Content:** Lesson 5: Write and Evaluate Expressions with Exponents; Lesson 19: Write and Identify Equivalent Expressions **6.EE.2c** **Lesson 4**: Work with Algebraic Expressions **Lesson 5**: Write and Evaluate Expressions with Exponents	**6.EE.2** **Illustrative Mathematics** Rectangle Perimeter 1 Distance to School

		Math in Action: 129-142 **Additional Content:** Lesson 1: Find the Area of a Parallelogram; Lesson 2: Find the Area of Triangles and Other Polygons; Lesson 3: Use Nets to Find Surface Area; Lesson 7: Add, Subtract, and Multiply Multi-Digit Decimals; Lesson 11: Solve Volume Problems with Fractions; Lesson 20: Understand Solutions of Equations	
	6.EE.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.*	**6.EE.3** **Lesson 19**: Write and Identify Equivalent Expressions **Math in Action**: 525-538 **Additional Content:** Lesson 4: Work with Algebraic Expressions; Lesson 21: Write and Solve One-Variable Equations	**6.EE.3** **Illustrative Mathematics** Anna in D.C.
	6.EE.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.*	**6.EE.4** **Lesson 19:** Write and Identify Equivalent Expressions **Additional Content:** Lesson 4: Work with Algebraic Expressions	**6.EE.4** **Illustrative Mathematics** Equivalent Expressions Rectangle Perimeter 2
Reason about and solve one-variable equations and inequalities.	**6.EE.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. *For example: does 5 make 3x > 7 true?*	**6.EE.5** **Lesson 20:** Understand Solutions of Equations **Lesson 26:** Write and Graph One-Variable Inequalities **Math in Action:** 643-656 **Additional Content:** Lesson 21: Write and Solve One-Variable Equations	**6.EE.5** **Illustrative Mathematics** Log Ride **Inside Mathematics** boxes
	6.EE.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.6** **Lesson 4:** Work with Algebraic Expressions **Additional Content:** Lesson 1: Find the Area of a Parallelogram; Lesson 2: Find the Area of Triangles and Other Polygons; Lesson 19: Write and Identify Equivalent Expressions; Lesson 20: Understand Solutions of Equations; Lesson 21: Write and Solve One-Variable Equations; Lesson 22: Analyze Two- Variable Relationships; Lesson 26: Write and Graph One-Variable Inequalities	**6.EE.6** **Illustrative Mathematics** Pennies to heaven

	6.EE.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.7** **Lesson 21:** Write and Solve One-Variable Equations	**6.EE.7** **Illustrative Mathematics** Morning Walk, Fruit Salad
	6.EE.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.8** **Lesson 26:** Write and Graph One-Variable Inequalities	**6.EE.8** **Illustrative Mathematics** Fishing Adventures 1 **Mathematics Assessment Project** Interpreting Equations, Evaluating Statements About Number
Represent and analyze quantitative relationships between dependent and independent variables.	**6.EE.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.EE.9** **Lesson 22:** Analyze Two-Variable Relationships **Math in Action:** 525-538	**6.EE.9** **Illustrative Mathematics** Chocolate Bar Sales **Inside Mathematics** Gym, tuffles

Geometry, Statistics and Probability

Building on and reinforcing their understanding of number, students begin to develop their ability to think statistically. Students recognize that a data distribution may not have a definite center and that different ways to measure center yield different values. The median measures center in the sense that it is roughly the middle value. The mean measures center in the sense that it is the value that each data point would take on if the total of the data values were redistributed equally, and also in the sense that it is a balance point. Students recognize that a measure of variability (interquartile range or mean absolute deviation) can also be useful for summarizing data because two very different sets of data can have the same mean and median yet be distinguished by their variability.

Students learn to describe and summarize numerical data sets, identifying clusters, peaks, gaps, and symmetry, considering the context in which the data were collected. Students in Grade 6 also build on their work with area in elementary school by reasoning about relationships among shapes to determine area, surface area, and volume. They find areas of right triangles, other triangles, and special quadrilaterals by decomposing these shapes, rearranging or removing pieces, and relating the shapes to rectangles. Using these methods, students discuss, develop, and justify formulas for areas of triangles and parallelograms. Students find areas of polygons and surface areas of prisms and pyramids by decomposing them into pieces whose area they can determine. They reason about right rectangular prisms with fractional side lengths to extend formulas for the volume of a right rectangular prism to fractional side lengths. They prepare for work on scale drawings and constructions in Grade 7 by drawing polygons in the coordinate plane.

Clusters	State of Alaska Standards	Ready Classroom Lessons	Additional Resources
Solve real-world and mathematical problems involving area, surface area, and volume.	**6.G.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.G.1** **Lesson 1:** Find the Area of a Parallelogram **Lesson 2:** Find the Area of Triangles and Other Polygons **Math in Action:** 129-142 **Additional Content:** Lesson 7: Add, Subtract, and Multiply Multi-Digit Decimals; Lesson 8: Divide Whole Numbers and Multi-Digit Decimals; Lesson 10: Divide Fractions; Lesson 28: Solve Problems in the Coordinate Plane	**6.G.1** **Illustrative Mathematics** Same Base and Height, Variation 1 Same Base and Height, Variation 2 Finding Areas of Polygons Base and Height Polygons in the Coordinate Plane Sierpinski's Carpet
	6.G.2 Apply the standard formulas to find volumes of prisms. Use attributes and properties (including shapes of bases) of prisms to identify compare or describe three-dimensional figures including prisms and cylinders.	**6.G.2** **Lesson 11:** Solve Volume Problems with Fractions **Math in Action:** 251-264 **Additional Content:** Lesson 21: Write and Solve One-Variable Equations	**6.G.2** **Illustrative Mathematics** Computing Volume Progression 1 Computing Volume Progression 4 Banana Bread Computing Volume Progression 2 Computing Volume Progression 3 **Inside Mathematics** building blocks

	6.G.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.G.3** **Lesson 28**: Solve Problems in the Coordinate Plane **Math in Action:** 643-656 **Additional Content:** Lesson 27: Understand the Four-Quadrant Coordinate Plane	**6.G.3** **Illustrative Mathematics** Polygons in the Coordinate Plane
	6.G.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.G.4**	**6.G.4** **Illustrative Mathematics** Nets for Pyramids and Prisms
	6.G.5 Identify, compare, or describe attributes and properties of circles (radius and diameter)	**6.G.5**	**Mathematics Assessment Project** Optimizing: Security Cameras Laws of Arithmetic, Optimizing: Packing It In, Using Coordinates to Interpret and Represent Data, Designing: Candy Cartons
Develop understanding of statistical variability.	**6.SP.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.SP.1** **Lesson 29:** Understand Statistical Questions and Data Distributions **Math in Action:** 753-766	**Illustrative Mathematics** Buttons: Statistical Questions Identifying Statistical Questions
	6.SP.2 Understand that a set of data has a distribution that can be described by its center (mean, median, or mode), spread (range), and overall shape and can be used to answer a statistical question.	**6.SP.2** **Lesson 29:** Understand Statistical Questions and Data Distributions **Lesson 30:** Use Dot Plots and Histograms to Describe Data Distributions **Math in Action:** 753-766 **Additional Content:** Lesson 31: Interpret Median and Interquartile Range in Box Plots; Lesson 33: Use Measures of Center and Variability to Summarize Data	**Illustrative Mathematics** Puppy Weights Electoral College
	6.SP.3 Recognize that a measure of center (mean, median, or mode) for a numerical data set summarize all of its values with a single number, while a measure of a variation (range) describes how its values vary with a single number.	**6.SP.3** **Lesson 31:** Interpret Median and Interquartile Range in Box Plots **Lesson 32:** Interpret Mean and Mean Absolute Deviation	**Mathematics Assessment Project** Mean, Median, Mode, and Range

		Math in Action: 753-766 Additional Content: Lesson 33: Use Measures of Center and Variability to Summarize Data	
Summarize and describe distributions.	**6.SP.4** Display numerical data in plots on a number line, including dot or line plots, histograms and box (box-and-whisker plots)	**6.SP.4** **Lesson 30**: Use Dot Plots and Histograms to Describe Data Distributions **Lesson 31**: Interpret Median and Interquartile Range in Box Plots Math in Action: 753-766 Additional Content: Lesson 29: Understand Statistical Questions and Data Distributions; Lesson 32: Interpret Mean and Mean Absolute Deviation; Lesson 33: Use Measures of Center and Variability to Summarize Data	**Illustrative Mathematics** Puppy Weights, Puzzle Times
	6.SP.5 Summarize numerical data sets in relation to their context, such as by: a. Reporting the number of observations. b. Describing the nature of the attribute under investigation, including how it was measured and its units of measurement. c. Giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered. d. Relating the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered.	**6.SP.5** **Lesson 29:** Understand Statistical Questions and Data Distributions **Lesson 30:** Use Dot Plots and Histograms to Describe Data Distributions **Lesson 31:** Interpret Median and Interquartile Range in Box Plots **Lesson 32:** Interpret Mean and Mean Absolute Deviation **Lesson 33:** Use Measures of Center and Variability to Summarize Data **6.SP.5a** **Lesson 29:** Understand Statistical Questions and Data Distributions Additional Content: Lesson 30: Use Dot Plots and Histograms to Describe Data Distributions **6.SP.5b** **Lesson 30**: Use Dot Plots and Histograms to Describe Data Distributions Math in Action: 753-766 Additional Content:	**Illustrative Mathematics** Puppy Weights, Puzzle Times **6.SP.5c** **Illustrative Mathematics** Puzzle Times **6.SP.5d** **Illustrative Mathematics** Electoral College **Inside Mathematics** Baseball players

		Lesson 29: Understand Statistical Questions and Data Distributions	
		6.SP.5c **Lesson 31**: Interpret Median and Interquartile Range in Box Plots **Lesson 32:** Interpret Mean and Mean Absolute Deviation **Math in Action**: 753-766 <u>Additional Content:</u> Lesson 33: Use Measures of Center and Variability to Summarize Data **6.SP.5d** **Lesson 33:** Use Measures of Center and Variability to Summarize Data **Math in Action:** 753-766	
	6.SP.6 Analyze whether a game is mathematically fair or unfair by explaining the probability of all possible outcomes.	**6.SP.6** *See Grade 7 :* **Lesson 30**: Understand Probability **Lesson 31:** Solve Problems Involving Experimental Probability	
	6.SP.7 Solve or identify solutions to problems involving possible combinations (e.g., if ice cream sundaes come in 3 flavors with 2 possible topping, how many different sundaes can be made using only one flavor of ice cream with one topping?)	*See Grade 7:* **Lesson 30**: Understand Probability **Lesson 32:** Solve Problems Involving Probability Models **Lesson 33:** Solve Problems Involving Compound Events	**Mathematics Assessment Project** Representing Data Using Grouped, Frequency Graphs and Box Plots