Select a Course:	Math Grade 6
Teacher:	CORE Math Grade 6
Course:	Math Grade 6
Year:	2016-17
Months:	- All -

August

6th Grade Math Number Sense

Enduring Understandings	Essential Questions	Standards	Knowledge & Skills	Academic Language
Transfer: Fraction and decimal concepts and procedures to interpret, solve, and create real-world problem scenarios that involve operations with fractions and/or decimals. Multiplication and division are inverse operations for whole numbers, fractions, and decimals. The relationship of the location of the digits and the value of the digits is part of understanding multi-digit operations. Division of fractions by fractions can be represented using multiple formats (manipulatives, diagrams, real-life situations, equations). Operations on decimals and whole numbers are based upon place value relationships.	How is division related to realistic situations and to other operations? What role does place value play in multi-digit operations? How can division be represented and interpreted?	6.NS.A.1 - Apply and extend previous understandings of multiplication and division to divide fractions by fractions ~ 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. 6.NS.B.2 - Compute fluently with multi-digit numbers and find common factors and multiples ~ Fluently divide multi-digit numbers using the standard algorithm. 6.NS.B.3 - Compute fluently with multi-digit numbers and find common factors and multiples ~ Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation. CCSS.Math.Practice.MP1 - Make sense of problems and persevere in solving them. CCSS.Math.Practice.MP2 - Reason abstractly and quantitatively. CCSS.Math.Practice.MP3 - Construct viable arguments and critique the reasoning of others. CCSS.Math.Practice.MP4 - Model with mathematics. CCSS.Math.Practice.MP5 - Use appropriate tools strategically. CCSS.Math.Practice.MP6 - Attend to precision. CCSS.Math.Practice.MP7 - Look for and make use of structure. CCSS.Math.Practice.MP8 - Look for and express regularity in repeated reasoning.	Interpret and compute products and quotients of positive rational numbers. Represent and evaluate word problems involving positive rational numbers. Add, subtract, multiply, and divide decimals. Divide multi-digit numbers. Standard algorithms for addition, subtraction, multiplication, and division of multi-digit decimals Compute quotients of fractions divided by fractions (6.NS.1). Explain the meaning of a quotient determined by division of fractions, using visual fraction models, equations, real-life situations, and language (6.NS.1). Divide multi-digit numbers fluently using the standard algorithm (6.NS.2). Fluently add, subtract, multiply, and divide decimals to	Product Quotient Greatest Common Factor (GCF) Least Common Multiple (LCM) Prime Number Composite Number Dividend Divisor Factor Multiple

				solve problems (6.NS.3).	

September	Enduring Understandings	Essential Questions	Standards	Knowledge & Skills	Academic Language

October — 6th Grade Mathematics Ratio and Proportional Relationships

Enduring Understandings	Essential Questions	Standards	Knowledge & Skills	Academic Language
Understand that real-world mathematical problems involving dependent and independent variables can be solved by applying ratio and rate concepts and procedures. To be able to apply knowledge of percents and measurements to solve real-world problems. Understand that percents are used to calculate tax, tip, commission, and other such examples. A ratio expresses the comparison between two quantities. Special types of ratios and rates, unit rates, measurement conversions, and percents. A rate is a type of ratio that represents a measure, quantity, or frequency. Ratio and rate reasoning can be applied to many different types of mathematical and real-life problems. Proportions can be used to find a percent of a number.	When is it useful to be able to relate one quantity to another? How are ratios and rates similar and different? What is the connection between a ratio and a fraction? How can percents be applied in daily activities?	6.RP.A.1 - Understand ratio concepts and use ratio reasoning to solve problems ~ Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. 6.RP.A.2 - Understand ratio concepts and use ratio reasoning to solve problems ~ 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. 6.RP.A.3 - Understand ratio concepts and use ratio reasoning to solve problems ~ 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. 6.RP.A.3a - Understand ratio concepts and use ratio reasoning to solve problems ~ 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.RP.A.3b - Understand ratio concepts and use ratio reasoning to solve problems ~ Solve unit rate problems including those involving unit pricing and constant speed. 6.RP.A.3c - Understand ratio concepts and use ratio reasoning to solve problems ~ 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.RP.A.3d - Understand ratio concepts and use ratio reasoning to solve problems ~ Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities. CCSS.Math.Practice.MP1 - Make sense of problems and persevere in solving them.	Use ratios, rates, unit rates, and percent skills when working with proportional relationships Convert fractions, decimals, and percents to solve problems Convert units of measure to solve problems A ratio compares two related quantities. Ratios can be represented in a variety of formats including each, to, per, for each, %, etc. A percent is a type of ratio that compares a quantity to 100. A unit rate is the ratio of two measurements in which the second term is 1. When it is appropriate to use ratios/rates to solve mathematical or real-life problems. Mathematical strategies for solving problems involving ratios and rates, including tables, equations, equivalent fractions, graphs, etc. Use ratio language to describe	Ratio Proportion Unit Rate Unit Price Percent Rate Percent Proportion Customary Unit Metric Unit

			CCSS.Math.Practice.MP2 - Reason abstractly and quantitatively. CCSS.Math.Practice.MP3 - Construct viable arguments and critique the reasoning of others. CCSS.Math.Practice.MP4 - Model with mathematics. CCSS.Math.Practice.MP5 - Use appropriate tools strategically. CCSS.Math.Practice.MP6 - Attend to precision. CCSS.Math.Practice.MP7 - Look for and make use of structure. CCSS.Math.Practice.MP8 - Look for and express regularity in repeated reasoning.	a ratio relationship between two quantities (6.RP.1) Represent a ratio relationship between two quantities using manipulatives and/or pictures, symbols and real-life situations (6.RP.1). Represent unit rates using visuals, charts, symbols, real-life situations and rate language (6.RP.2). Use ratio and rate reasoning to solve real-world and mathematical problems (6.RP.3). Make and interpret tables of equivalent ratios (6.RP.3). Plot pairs of values of the quantities being compared on the coordinate plane (6.RP.3). Solve unit rate problems (including unit pricing and constant speed) (6.RP.3). Solve percent problems, including finding a percent of quantity as a rate per 100 and finding the whole, given the part and the percent (6.RP.3).	

November

6th Grade Mathematics Rational Numbers

Enduring Understandings	Essential Questions	Standards	Knowledge & Skills	Academic Language
Quantities having more or less than zero are described using positive and negative numbers. Number lines are visual models used to compare numbers, including decimals and fractions. The rational numbers	How are positive and negative numbers used? How do rational numbers relate to integers? How are rational numbers used for real-world	6.NS.C.5 - Apply and extend previous understandings of numbers to the system of rational numbers ~ 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	Compare rational numbers Use coordinates and absolute value to find distances between points where the first coordinate or the second coordinate are not the same.	Numerator Denominator Reciprocal Integer Rational Number

can extend to the left or to the right on the number line, with negative numbers going to the left of zero, and positive numbers going to the right of zero. Students will understand that positive and negative numbers are represented in the coordinate plane and in everyday situations, such as temperature, elevation, money and many more. The coordinate plane is a tool for modeling real-world and mathematical situations and for solving problems, such as navigating locations and maps.	application?	each situation. 6.NS.C.6 - Apply and extend previous understandings of numbers to the system of rational numbers ~ 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. 6.NS.C.8 - Apply and extend previous understandings of numbers to the system of rational numbers ~ 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.6b - Apply and extend previous understandings of numbers to the system of rational numbers ~ 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 - Apply and extend previous understandings of numbers to the system of rational numbers ~ 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.7a - Apply and extend previous understandings of numbers to the system of rational numbers ~ Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram. 6.NS.C.7b - Apply and extend previous understandings of numbers to the system of rational numbers ~ Write, interpret, and explain statements of order for rational numbers in real-world contexts. 6.NS.C.7c - Apply and extend previous understandings of numbers to the system of rational numbers ~ 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. 6.NS.C.7d - Apply and extend previous understandings of numbers to the system of rational numbers ~ Distinguish comparisons of absolute value from statements about order. 6.NS.C.7 - Apply and extend previous understandings of numbers to the system	Positive and negative numbers represent opposite directions or values How to plot rational numbers on a number line How to compare rational numbers on a number line and record them using inequalities How to plot points involving rational numbers in all four quadrants on the coordinate plane Identify an integer and its opposite and the directions they represent in real-world contexts (6.NS.5). Use integers to represent quantities in real-world situations (above/below sea level) (6.NS.5). Understand the meaning of 0 and where it fits into a situation (6.NS.5). Represent and explain the value of a rational number as a point on a number line (6.NS.6). Recognize that a number line can be both vertical and horizontal (6.NS.6). Identify that the opposite of the opposite of the number is itself (6.NS.6) Incorporate opposites on the number line or plot opposites on the number line or plot opposite points on a coordinate grid where x and y intersect at zero (6.NS.6). Represent signs of numbers in ordered	Absolute Value Coordinate Plane Reflection	

			of rational numbers ~ Understand ordering and absolute value of rational numbers. 6.NS.C.6a - Apply and extend previous understandings of numbers to the system of rational numbers ~ 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. CCSS.Math.Practice.MP1 - Make sense of problems and persevere in solving them. CCSS.Math.Practice.MP2 - Reason abstractly and quantitatively. CCSS.Math.Practice.MP3 - Construct viable arguments and critique the reasoning of others. CCSS.Math.Practice.MP4 - Model with mathematics. CCSS.Math.Practice.MP5 - Use appropriate tools strategically. CCSS.Math.Practice.MP6 - Attend to precision. CCSS.Math.Practice.MP7 - Look for and make use of structure. CCSS.Math.Practice.MP8 - Look for and express regularity in repeated reasoning.	pairs as locations in quadrants on the coordinate plane and explain the relationship between the location and the signs (6.NS.6). Represent and explain reflections of ordered pairs on a coordinate plane (6.NS.6). Locate and position integers and other rational numbers on horizontal or vertical number lines (6.NS.6). Locate and position integers and other rational numbers on a coordinate plane (6.NS.6). Identify the absolute value of a number as the distance from zero (6.NS.7). Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram (6.NS.7). Use inequalities to order integers relative to their position on the number line (6.NS.7). Write statements of order for rational numbers in real-world contexts (6.NS.7). Interpret statements of order for rational numbers in real-world contexts (6.NS.7). Explain statements of order for rational number as the distance from zero and recognize the symbol x (6.NS.7). Interpret absolute value as magnitude for a positive or negative quantity in a	

				real-world situation (6.NS.7). Distinguish comparisons of absolute value from statements about order. (Compare rational numbers using absolute real-world situations. For negative numbers, as the absolute values increases, the value of the number decreases.) (6.NS.7). Solve real-world problems by graphing points in all four quadrants of the coordinate plane (6.NS.8). Use coordinates to find distances between points with the same first coordinate or the same second coordinate (6.NS.8). Use absolute value to find distances between points with the same first coordinate or the same second coordinate (6.NS.8). Represent that a number and its opposite are equidistant from zero on a number line (6.NS.6). Represent the absolute value of a rational number as the distance from zero, and recognize the symbol | x | (6.NS.7).	

December

Enduring Understandings	Essential Questions	Standards	Knowledge & Skills	Academic Language

January

6th Grade Mathematics Expressions

Enduring Understandings	Essential Questions	Standards	Knowledge & Skills	Academic Language

Properties of operations are used to determine if expressions are equivalent. There is a designated sequence to perform operations (Order of Operations). Variables can be used as unique unknown values or as quantities that vary. Algebraic expressions may be used to represent and generalize mathematical problems and real-life situations. Students will understand that expressions are used to represent and interpret real-world and mathematical relationships. Students understand that expressions can be written to represent relationships in data gathered from real-world or mathematical situations.	What is equivalence? How are properties of operations used to prove equivalence? How are variables defined and used?	6.EE.A.1 - Apply and extend previous understandings of arithmetic to algebraic expressions ~ Write and evaluate numerical expressions involving whole-number exponents. 6.EE.A.2 - Apply and extend previous understandings of arithmetic to algebraic expressions ~ Write, read, and evaluate expressions in which letters stand for numbers. 6.EE.A.3 - Apply and extend previous understandings of arithmetic to algebraic expressions ~ Apply the properties of operations to generate equivalent expressions. 6.EE.A.4 - Apply and extend previous understandings of arithmetic to algebraic expressions ~ Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them). 6.EE.A.2a - Apply and extend previous understandings of arithmetic to algebraic expressions ~ Write expressions that record operations with numbers and with letters standing for numbers. 6.EE.A.2b - Apply and extend previous understandings of arithmetic to algebraic expressions ~ 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. 6.EE.A.2c - Apply and extend previous understandings of arithmetic to algebraic expressions ~ 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). 6.NS.B.4 - Compute fluently with multi-digit numbers and find common factors and multiples ~ 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. CCSS.Math.Practice.MP6 - Attend to precision. CCSS.Math.Practice.MP7 - Look for and make use of structure. CCSS.Math.Practice.MP8 - Look for and	Use the properties of operations to rewrite equivalent numerical expressions using non-negative rational numbers. Use variables to represent real-world situations and use the properties of operations to generate equivalent expressions for these situations. Use substitution to understand that expressions are equivalent. Solve complex problems involving expressions. Variable are used to represent unknown values Operations must be used in a specific systematic order How to apply the properties of operations to generate equivalent expressions Only like terms can be combined when simplifying expressions How to identify when two expressions are equivalent Exponential notation is a way to express repeated products of the same number Write numerical expressions that have whole exponents (6.EE.1) Evaluate numerical numerical expressions that have whole number exponents and rational bases (6.EE.1)	Communative Property Associative Property Zero Property Distributive Property Additive Identity Multiplicative Identity Expression Evaluate Simplify Exponent Term Like Terms Variable Constant Coefficient

			express regularity in repeated reasoning. CCSS.Math.Practice.MP1 - Make sense of problems and persevere in solving them. CCSS.Math.Practice.MP2 - Reason abstractly and quantitatively. CCSS.Math.Practice.MP3 - Construct viable arguments and critique the reasoning of others. CCSS.Math.Practice.MP4 - Model with mathematics. CCSS.Math.Practice.MP5 - Use appropriate tools strategically.	Write algebraic expressions to represent real-life and mathematical situations (6.EE.2) Identify parts of an expression using appropriate terminology (6.EE.2). Given the value of a variable, students will evaluate the expression (6.EE.2) Use order of operations to evaluate expressions (6.EE.2) Apply properties of operations to write equivalent expressions (6.EE.3) Identify when two expressions are equivalent (6.EE.4) Prove (using various strategies) that two equations are equivalent no matter what number is substituted. (6.EE.4) Identify the factors of any whole number less than or equal to 100 (6.NS.4) Determine the Greatest Common Factor of two or more whole numbers less than or equal to 100. (6.NS.4) Identify the multiples of two whole numbers less than or equal to 12 and determine the Least Common Multiple (6.NS.4) 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. (6.NS.4)	
	6th Grade Mathematics Equations and Inequalities				

February

Enduring Understandings	Essential Questions	Standards	Knowledge & Skills	Academic Language
Solving equations is a reasoning process and follows established procedures based on properties. Substitution is used to determine whether a given number in a set makes an equation or inequality true. Variables may be used to represent a specific number or, in some situations, to represent all numbers in a specified set. When one expression has a different value than a related expression, an inequality provides a way to show that relationship between the expressions: the value of one expression is greater than (or greater than or equal to) the value of the other expression instead of being equal. Inequalities may have infinite solutions and there are methods for determining if an inequality has infinite solutions using graphs and equations. Solutions of inequalities can be represented on a number line. Graphs and equations represent relationships between variables. Students will understand that equations and inequalities can be written, interpreted, and solved to represent real-world and mathematical situations.	How does the structure of equations and/or inequalities help us solve equations and/or inequalities? How does the substitution process help in solving problems? Why are variables used in equations? What might a variable represent in a given situation? How are inequalities represented and solved?	6.EE.B.5 - Reason about and solve one-variable equations and inequalities ~ 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.EE.B.6 - Reason about and solve one-variable equations and inequalities ~ 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.B.7 - Reason about and solve one-variable equations and inequalities ~ 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.8 - Reason about and solve one-variable equations and inequalities ~ 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.C.9 - Represent and analyze quantitative relationships between dependent and independent variables ~ 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. CCSS.Math.Practice.MP1 - Make sense of problems and persevere in solving them. CCSS.Math.Practice.MP2 - Reason abstractly and quantitatively. CCSS.Math.Practice.MP3 - Construct viable arguments and critique the	Use properties of operations to create equivalent numerical expressions Solve multi-step problems using rational numbers with expressions, equations and inequalities Compare word problems and develop solution strategies by comparing the variable and number relationships in the situations. Recognizing that solving an equation or inequality is a process of answering a question: which values from a specified set, if any, make the equation or inequality true? (6.EE.5). Determining whether a given number in a specified set makes an equation or inequality true with substitution (6.EE.5). Writing variable expressions when solving a mathematical problem or real-world problem, recognizing that a variable can represent an unknown number or any number in a specified set (6.EE.6). Solving real-world and mathematical problems by writing and solving equations (6.EE.7). Write an inequality of the form x > c or x < c to represent a constraint or condition in a mathematical problem or a real-world problem (6.EE.8).	Equation Solve Function Independent Variable Dependent Variable Linear Equation Input Output Ordered Pair Inequality

			reasoning of others. CCSS.Math.Practice.MP4 - Model with mathematics. CCSS.Math.Practice.MP5 - Use appropriate tools strategically. CCSS.Math.Practice.MP6 - Attend to precision. CCSS.Math.Practice.MP7 - Look for and make use of structure. CCSS.Math.Practice.MP8 - Look for and express regularity in repeated reasoning.	Recognize that inequalities of the form x > c or x < c have infinitely many solutions (6.EE.8). Represent solutions of inequalities on number line diagrams (6.EE.8). Use variables to represent two quantities in a real-world problem that change in relationship to one another (6.EE.9). Write two equations to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable (6.EE.9). Analyze the relationship between the dependent and independent variables using graphs and table, and relate these to the equation (6.EE.9).	

March

6th Grade Mathematics Geometry

Enduring Understandings	Essential Questions	Standards	Knowledge & Skills	Academic Language
Transfer: Students will apply concepts and procedures for interpreting, representing and solving real-world and mathematical problems involving area, surface area and volume. Geometry and spatial sense offer ways to envision, to interpret and to reflect on the world around us. Area, volume and surface area are measurements that relate to each other and apply to objects and events in our real life experiences. Properties of 2-dimensional shapes are	How does what we measure influence how we measure? How can space be defined through numbers and measurement? How does investigating figures help us build our understanding of mathematics? What is the relationship between 2-dimensional shapes, 3-dimensional shapes, and our world?	6.G.A.1 - Solve real-world and mathematical problems involving area, surface area, and volume ~ 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.A.2 - Solve real-world and mathematical problems involving area, surface area, and volume ~ 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 = l w h and V = b h to find volumes of right rectangular prisms with fractional edge lengths in the	Find the area, surface area, and volume of 2 and 3 dimensional shapes. Draw polygons within the coordinate plane. Represent 3-dimensional figures using nets. Calculate the area by decomposing a polygon into composite shapes. Formula for volume of a right rectangular prism.	Area Parallelogram Triangle Trapezoid Composite Figure Surface Area Net Prism Face Lateral Side

	used in solving problems involving 3-dimensional shapes. The value of numbers and application of properties are used to solve problems about our world. Understand that problems in area, surface area and volume can be applied to many different activities and professions, such as architecture, landscaping, construction, and many more.		context of solving real-world and mathematical problems. 6.G.A.3 - Solve real-world and mathematical problems involving area, surface area, and volume ~ 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.A.4 - Solve real-world and mathematical problems involving area, surface area, and volume ~ 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. CCSS.Math.Practice.MP2 - Reason abstractly and quantitatively. CCSS.Math.Practice.MP3 - Construct viable arguments and critique the reasoning of others. CCSS.Math.Practice.MP4 - Model with mathematics. CCSS.Math.Practice.MP5 - Use appropriate tools strategically. CCSS.Math.Practice.MP6 - Attend to precision. CCSS.Math.Practice.MP7 - Look for and make use of structure. CCSS.Math.Practice.MP8 - Look for and express regularity in repeated reasoning. CCSS.Math.Practice.MP1 - Make sense of problems and persevere in solving them.	Procedures for finding surface area of pyramids and prisms. Given irregular figures, students will be able to divide the shape into triangles and rectangles (6.G.1). Given a polygon, students will find the area using the decomposing shapes (6.G.1). Given a polygon students will calculate the area by decomposing into composite figures (triangles and rectangles) (6.G.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 (6.G.2). Calculate the volume of a right rectangular prism (6.G.2). Apply the formula to solve real-world mathematical problems involving volume with fractional edge lengths (6.G.2). Draw polygons in the coordinate plane given the coordinates for the vertices (6.G.3). Use coordinates to find the length of a side joining with the same first coordinate or the same second coordinate (6.G.3). Solve real-world and mathematical problems involving	Vertex Edge Volume

				polygons in the coordinate plane (6.G.3). Represent 3D figures using nets of triangles and rectangles (6.G.4). Solve real-world problems involving surface areas using nets (6.G.4).	

April

6th Grade Mathematics Statistics

Enduring Understandings	Essential Questions	Standards	Knowledge & Skills	Academic Language
Statistical questions and the answers account for variability in the data. The distribution of a data set is described by its center, spread, and overall shape. Measures of center for a numerical set of data are summaries of the values using a single number. Measures of variability describe the variation of the values in the data set using a single number. Students will understand that measures of center and variation are used when analyzing and presenting data collected using a statistical question.	How do we analyze and interpret data sets? When is one data display better than another? How do mathematicians choose to display data in strategic ways? When is one statistical measure better than another? What makes a good statistical question? What is the value of using different data representations?	6.SP.A.1 - Develop understanding of statistical variability ~ Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers. 6.SP.A.2 - Develop understanding of statistical variability ~ 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.3 - Develop understanding of statistical variability ~ 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.4 - Summarize and describe distributions ~ Display numerical data in plots on a number line, including dot plots, histograms, and box plots. 6.SP.B.5 - Summarize and describe distributions ~ Summarize numerical data sets in relation to their context, such as by: 6.SP.B.5a - Summarize and describe distributions ~ Reporting the number of observations. 6.SP.B.5b - Summarize and describe distributions ~ Describing the nature of the attribute under investigation, including how it was measured and its units of measurement. 6.SP.B.5c - Summarize and describe distributions ~ 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	Represent a set of data collected to answer a statistical question and describe it by its center, spread, and overall shape. Represent and explain the difference between measures of center and measures of variability. Display numerical data in a variety of visual representations, including box plots and histograms. Relate the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered. Median and mean are measures of center. Interquartile range and mean absolute deviation are measures of variability. The distribution is the arrangement of the values in a data set. Identify statistical questions (6.SP.1). Determine if questions anticipate	Average First Quartile Interquartile Range Third Quartile Mean Median Mode Measures of Center Measures of Variation Range Mean Absolute Deviation Outliers Statistical Question Box Plots Line Plots Histogram Frequency Frequency Table

			which the data were gathered. 6.SP.B.5d - Summarize and describe distributions ~ Relating the choice of measures of center and variability to the shape of the data di CCSS.Math.Practice.MP7 - Look for and make use of structure. CCSS.Math.Practice.MP8 - Look for and express regularity in repeated reasoning. CCSS.Math.Practice.MP1 - Make sense of problems and persevere in solving them. CCSS.Math.Practice.MP2 - Reason abstractly and quantitatively. CCSS.Math.Practice.MP3 - Construct viable arguments and critique the reasoning of others. CCSS.Math.Practice.MP4 - Model with mathematics. CCSS.Math.Practice.MP5 - Use appropriate tools strategically. CCSS.Math.Practice.MP6 - Attend to precision.	variability in the data related to the question and account for it in the answers (6.SP.1). Represent a set of data collected to answer a statistical question and describe it by its center, spread, and overall shape (6.SP.2). Represent and explain the difference between measures of center and measure of variability (6.SP.3). Display numerical data in plots on a number line (6.SP.4). Display numerical data in dot plots (6.SP.4). Display numerical data in histograms (6.SP.4). Use language to summarize numerical data sets in relation to their context (6.SP.5). Report the number of observations (6.SP.5). Describe the nature of the attribute under investigation (6.SP.5). Give quantitative measures of center and variability 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.5). Relate 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). Display numerical data in box plots	