

**Shrewsbury Borough School Mathematics Curriculum 2013**  
**Grade 6**

Marking Period 1	Marking Period 2	Marking Period 3	Marking Period 4
<p><b>Topic: The Number System: Expressions and Equations</b></p> <p><b>Objectives:</b> Use the algorithm for division and interpret the quotient and remainder in a real-world setting. <i>(CC.6.NS.2)</i></p> <p><b><u>Mathematical Practices:</u></b> MP1: Make sense of problems and persevere in solving them. MP2: Reason abstractly and quantitatively. MP6: Attend to precision.</p> <p><b>Represent numbers by using exponents.</b> <i>(CC.6.EE.1)</i></p> <p><b><u>Mathematical Practices:</u></b> MP1: Make sense of problems and persevere in solving them. MP2: Reason abstractly and quantitatively. MP7: Look for and make use of structure.</p>	<p><b>Topic: The Number System: Statistics and Probability</b></p> <p><b>Objectives:</b> Find the greatest common factor of a set of numbers. <i>(CC.6.NS.4)</i></p> <p><b><u>Mathematical Practices:</u></b> MP1: Make sense of problems and persevere in solving them. MP6: Attend to precision.</p> <p><b>Factor numerical and algebraic expressions and write equivalent numerical and algebraic expressions.</b> <i>(CC.6.EE.4; CC.6.EE.2b; CC.6.EE.3)</i></p> <p><b><u>Mathematical Practices:</u></b> MP 3: Construct viable arguments and critique the reasoning of others. MP4: Model with mathematics. MP7: Look for and make use of structure.</p>	<p><b>Topics: Ratios and Proportional Relationships, The Number System: Expressions and Equations and Geometry</b></p> <p><b>Objectives:</b> Write ratios and rates and find unit rates. <i>(CC.6.RP.2; CC.6.RP.1; CC.6.RP.3b)</i></p> <p><b><u>Mathematical Practices:</u></b> MP1: Make sense of problems and persevere in solving them. MP2: Reason abstractly and quantitatively. MP4: Model with mathematics.</p> <p><b>Use a table to find equivalent ratios and rates.</b> <i>(CC.6.RP.3; CC.6.RP.3a)</i></p> <p><b><u>Mathematical Practices:</u></b> MP1: Make sense of problems and persevere in solving them. MP5: Use appropriate tools strategically. MP6: Attend to precision.</p>	<p><b>Topic: Expressions and Equations</b></p> <p><b>Objectives:</b> Use data in a table to write an equation for a function and use the equations to find the missing value. <i>(CC.6.EE.9)</i></p> <p><b><u>Mathematical Practices:</u></b> MP1: Make sense of problems and persevere in solving them. MP4: Model with mathematics. MP8: Look for and express regularity in repeated reasoning.</p> <p><b>Represent linear functions using ordered pairs and graphs.</b> <i>(CC.6.EE.9)</i></p> <p><b><u>Mathematical Practices:</u></b> MP2: Reason abstractly and quantitatively. MP 3: Construct viable arguments and critique the reasoning of others. MP5: Use appropriate tools strategically.</p>

<p><b>Use the order of operations.</b> (<i>CC.6.EE.2; CC.6.EE.2c</i>)</p> <p><b><u>Mathematical Practices:</u></b> MP 3: Construct viable arguments and critique the reasoning of others. MP4: Model with mathematics. MP7: Look for and make use of structure.</p> <p><b>Use number properties to compute mentally.</b> (<i>CC.6.EE.3; CC.6.NS.4</i>)</p> <p><b><u>Mathematical Practices:</u></b> MP3: Construct viable arguments and critique the reasoning of others. MP6: Attend to precision. MP8: Look for and express regularity in repeated reasoning.</p> <p><b>Identify and evaluate expressions.</b> (<i>CC.6.EE.2; CC.6.EE.2b</i>)</p> <p><b><u>Mathematical Practices:</u></b> MP5: Use appropriate tools strategically. MP7: Look for and make use of structure. MP8: Look for and express regularity in repeated reasoning.</p>	<p><b>Use pictures and number lines to compare and order fractions.</b> (<i>CC.6.NS.7</i>)</p> <p><b><u>Mathematical Practices:</u></b> MP1: Make sense of problems and persevere in solving them. MP6: Attend to precision. MP7: Look for and make use of structure.</p> <p><b>Find the least common multiple of a group of numbers.</b> (<i>CC.6.NS.4</i>)</p> <p><b><u>Mathematical Practices:</u></b> MP6: Attend to precision. MP7: Look for and make use of structure. MP8: Look for and express regularity in repeated reasoning.</p> <p><b>Solve equations by adding and subtracting fractions.</b> (<i>CC.6.EE.7</i>)</p> <p><b><u>Mathematical Practices:</u></b> MP2: Reason abstractly and quantitatively. MP4: Model with mathematics. MP6: Attend to precision.</p>	<p><b>Graph ordered pairs on a coordinate grid.</b> (<i>CC.6.NS.6; CC.6.NS.6c</i>)</p> <p><b><u>Mathematical Practices:</u></b> MP1: Make sense of problems and persevere in solving them. MP4: Model with mathematics. MP7: Look for and make use of structure.</p> <p><b>Graph equivalent ratios and rates.</b> (<i>CC.6.RP.3; CC.6.RP.3a</i>)</p> <p><b><u>Mathematical Practices:</u></b> MP4: Model with mathematics. MP6: Attend to precision.</p> <p><b>Write and solve proportions.</b> (<i>CC.6.RP.1</i>)</p> <p><b><u>Mathematical Practices:</u></b> MP2: Reason abstractly and quantitatively. MP4: Model with mathematics. MP8: Look for and express regularity in repeated reasoning.</p> <p><b>Write percents as decimals and as fractions.</b> (<i>CC.6.RP.3; CC.6.RP.3c</i>)</p> <p><b><u>Mathematical Practices:</u></b> MP 3: Construct viable arguments and critique the</p>	<p><b>Find rates of change and slope.</b> (<i>CC.6.RP.3; CC.6.RP.3a</i>)</p> <p><b><u>Mathematical Practices:</u></b> MP2: Reason abstractly and quantitatively. MP5: Use appropriate tools strategically. MP7: Look for and make use of structure.</p> <p><b>Read and write inequalities and graph them on a number line.</b> (<i>CC.6.EE.8</i>)</p> <p><b><u>Mathematical Practices:</u></b> MP1: Make sense of problems and persevere in solving them. MP4: Model with mathematics. MP6: Attend to precision.</p>
---	---	--	--

<p><b>Translate between words and math.</b> (<i>CC.6.EE.2; CC.6.EE.2a; CC.6.EE.2b</i>)</p> <p><b><u>Mathematical Practices:</u></b> MP2: Reason abstractly and quantitatively. MP3: Construct viable arguments and critique the reasoning of others. MP4: Model with mathematics.</p> <p><b>Write expressions for tables and sequences.</b> (<i>CC.6.EE.2; CC.6.EE.2a</i>)</p> <p><b><u>Mathematical Practices:</u></b> MP2: Reason abstractly and quantitatively. MP3: Construct viable arguments and critique the reasoning of others. MP8: Look for and express regularity in repeated reasoning.</p> <p><b>Determine whether a number is a solution of an equation.</b> (<i>CC.6.EE.5; CC.6.EE.4</i>)</p> <p><b><u>Mathematical Practices:</u></b> MP1: Make sense of problems and persevere in solving them. MP2: Reason abstractly and quantitatively. MP7: Look for and make use of</p>	<p><b>Divide fractions and mixed numbers.</b> (<i>CC.6.NS.1</i>)</p> <p><b><u>Mathematical Practices:</u></b> MP2: Reason abstractly and quantitatively. MP3: Construct viable arguments and critique the reasoning of others. MP5: Use appropriate tools strategically.</p> <p><b>Solve equations by multiplying and dividing fractions.</b> (<i>CC.6.EE.7; CC.6.NS.1</i>)</p> <p><b><u>Mathematical Practices:</u></b> MP2: Reason abstractly and quantitatively. MP3: Construct viable arguments and critique the reasoning of others. MP4: Model with mathematics.</p> <p><b>Find the range, mean, median, and mode of a data set.</b> (<i>CC.6.SP.3; CC.6.SP.2</i>)</p> <p><b><u>Mathematical Practices:</u></b> MP1: Make sense of problems and persevere in solving them. MP5: Use appropriate tools strategically. MP7: Look for and make use of structure.</p>	<p>reasoning of others. MP4: Model with mathematics.</p> <p><b>Write decimals and fractions as percents.</b> (<i>CC.6.RP.3; CC.6.RP.3c</i>)</p> <p><b><u>Mathematical Practices:</u></b> MP1: Make sense of problems and persevere in solving them. MP6: Attend to precision. MP7: Look for and make use of structure.</p> <p><b>Find the percent of a number.</b> (<i>CC.6.RP.3; CC.6.RP.3c</i>)</p> <p><b><u>Mathematical Practices:</u></b> MP2: Reason abstractly and quantitatively. MP4: Model with mathematics. MP6: Attend to precision.</p> <p><b>Solve problems involving percents.</b> (<i>CC.6.RP.3; CC.6.RP.3c</i>)</p> <p><b><u>Mathematical Practices:</u></b> MP4: Model with mathematics. MP5: Use appropriate tools strategically. MP8: Look for and express regularity in repeated reasoning.</p>	
--	---	--	--

<p>structure.</p> <p><b>Solve whole number addition equations.</b> (<i>CC.6.EE.7; CC.6.EE.6</i>)</p> <p><b><u>Mathematical Practices:</u></b> MP3: Construct viable arguments and critique the reasoning of others. MP4: Model with mathematics. MP5: Use appropriate tools strategically.</p> <p><b>Solve whole-number subtraction equations.</b> (<i>CC.6.EE.6</i>)</p> <p><b><u>Mathematical Practices:</u></b> MP1: Make sense of problems and persevere in solving them. MP2: Reason abstractly and quantitatively. MP7: Look for and make use of structure.</p> <p><b>Solve whole-number multiplication equations.</b> (<i>CC.6.EE.7; CC.6.EE.6</i>)</p> <p><b><u>Mathematical Practices:</u></b> MP2: Reason abstractly and quantitatively. MP3: Construct viable arguments and critique the reasoning of others.</p>	<p><b>Learn the effect of additional data outliers.</b> (<i>CC.6.SP.3</i>)</p> <p><b><u>Mathematical Practices:</u></b> MP2: Reason abstractly and quantitatively. MP3: Construct viable arguments and critique the reasoning of others. MP6: Attend to precision.</p> <p><b>Calculate, interpret, and compare measures of variation in a data set.</b> (<i>CC.6.SP.1; CC.6.SP.3; CC.6.SP.4</i>)</p> <p><b><u>Mathematical Practices:</u></b> MP1: Make sense of problems and persevere in solving them. MP2: Reason abstractly and quantitatively. MP6: Attend to precision.</p> <p><b>Record and organize data in line plots, frequency tables and histograms.</b> (<i>CC.6.SP.4; CC.6.SP.2; CC.6.SP.5a</i>)</p> <p><b><u>Mathematical Practices:</u></b> MP3: Construct viable arguments and critique the reasoning of others. MP4: Model with mathematics.</p>	<p><b>Convert customary units of measure.</b> (<i>CC.6.RP.3d</i>)</p> <p><b><u>Mathematical Practices:</u></b> MP1: Make sense of problems and persevere in solving them. MP2: Reason abstractly and quantitatively. MP3: Construct viable arguments and critique the reasoning of others.</p> <p><b>Convert metric units of measure.</b> (<i>CC.6.RP.3d</i>)</p> <p><b><u>Mathematical Practices:</u></b> MP1: Make sense of problems and persevere in solving them. MP6: Attend to precision. MP7: Look for and make use of structure.</p> <p><b>Estimate the area of irregular figures and find the area of rectangles and parallelograms.</b> (<i>CC.6.G.1; CC.6.EE.2c</i>)</p> <p><b><u>Mathematical Practices:</u></b> MP3: Construct viable arguments and critique the reasoning of others. MP4: Model with mathematics. MP6: Attend to precision.</p>	
--	--	---	--

<p>MP4: Model with mathematics.</p> <p><b>Solve whole-number division equations.</b> (<i>CC.6.EE.6</i>)</p> <p><b><u>Mathematical Practices:</u></b> MP2: Reason abstractly and quantitatively. MP3: Construct viable arguments and critique the reasoning of others. MP8: Look for and express regularity in repeated reasoning.</p> <p><b>Add and subtract decimals.</b> (<i>CC.6.EE.7; CC.6.NS.3</i>)</p> <p><b><u>Mathematical Practices:</u></b> MP1: Make sense of problems and persevere in solving them. MP2: Reason abstractly and quantitatively. MP3: Construct viable arguments and critique the reasoning of others.</p> <p><b>Multiply decimals by whole numbers and by decimals.</b> (<i>CC.6.EE.7; CC.6.NS.3</i>)</p> <p><b><u>Mathematical Practices:</u></b> MP2: Reason abstractly and quantitatively. MP6: Attend to precision. MP7: Look for and make use of</p>	<p>MP5: Use appropriate tools strategically.</p> <p><b>Describe and compare data distributions by their center, spread, and shape, using box-and-whisker plots or dot plots.</b> (<i>CC.6.SP.5; CC.6.SP.5a; CC.6.SP.5b; CC.6.SP.5c; CC.6.SP.5d; CC.6.SP.2; CC.6.SP.3; CC.6.SP.4</i>)</p> <p><b><u>Mathematical Practices:</u></b> MP3: Construct viable arguments and critique the reasoning of others. MP5: Use appropriate tools strategically. MP6: Attend to precision.</p>	<p><b>Find the area of triangles and trapezoids.</b> (<i>CC.6.G.1; CC.6.EE.2.c</i>)</p> <p><b><u>Mathematical Practices:</u></b> MP4: Model with mathematics. MP7: Look for and make use of structure. MP8: Look for and express regularity in repeated reasoning.</p> <p><b>Break a polygon into simpler parts to find its area.</b> (<i>CC.6.G.1; CC.6.EE.2c</i>)</p> <p><b><u>Mathematical Practices:</u></b> MP8: Look for and express regularity in repeated reasoning. MP4: Model with mathematics. MP7: Look for and make use of structure.</p> <p><b>Estimate and find the volumes of rectangular prisms and triangular prisms.</b> (<i>CC.6.G.2; CC.6.EE.2c</i>)</p> <p><b><u>Mathematical Practices:</u></b> MP1: Make sense of problems and persevere in solving them. MP5: Use appropriate tools strategically. MP8: Look for and express regularity in repeated reasoning.</p>	
---	---	---	--

<p>structure.</p> <p><b>Divide decimals by whole numbers.</b> (CC.6.NS.3)</p> <p><b><u>Mathematical Practices:</u></b> MP1: Make sense of problems and persevere in solving them. MP2: Reason abstractly and quantitatively. MP8: Look for and express regularity in repeated reasoning.</p> <p><b>Divide whole numbers and decimals by decimals.</b> (CC.6.NS.3)</p> <p><b><u>Mathematical Practices:</u></b> MP1: Make sense of problems and persevere in solving them. MP2: Reason abstractly and quantitatively. MP5: Use appropriate tools strategically.</p> <p><b>Solve problems by interpreting the quotient.</b> (CC.6.NS.3)</p> <p><b><u>Mathematical Practices:</u></b> MP3: Construct viable arguments and critique the reasoning of others. MP4: Model with mathematics. MP7: Look for and make use of</p>		<p><b>Find the surface areas of prisms, pyramids, and cylinders.</b> (CC.6.G.4; CC.6.EE.2c)</p> <p><b><u>Mathematical Practices:</u></b> MP2: Reason abstractly and quantitatively. MP6: Attend to precision. MP8: Look for and express regularity in repeated reasoning.</p> <p><b>Identify and graph integers and find opposites.</b> (CC.6.NS.5; CC.6.NS.6; CC.6.NS.7)</p> <p><b><u>Mathematical Practices:</u></b> MP3: Construct viable arguments and critique the reasoning of others. MP4: Model with mathematics. MP5: Use appropriate tools strategically.</p> <p><b>Compare and order integers.</b> (CC.6.NS.7; CC.6.NS.7a; CC.6.NS.7b)</p> <p><b><u>Mathematical Practices:</u></b> MP5: Use appropriate tools strategically. MP7: Look for and make use of structure. MP8: Look for and express regularity in repeated reasoning.</p>	
---	--	---	--

structure.

**Solve equations involving decimals.**

*(CC.6.EE.7; CC.6.EE.6)*

**Mathematical Practices:**

MP1: Make sense of problems and persevere in solving them.

MP3: Construct viable arguments and critique the reasoning of others.

MP6: Attend to precision.

**Compare and order negative rational numbers.**

*(CC.6.NS.6a; CC.6.NS.6c)*

**Mathematical Practices:**

MP5: Use appropriate tools strategically.

MP7: Look for and make use of structure.

MP8: Look for and express regularity in repeated reasoning.

**Find absolute value on a number line.**

*(CC.6.NS.6c; CC.6.NS.6d)*

**Mathematical Practices:**

MP5: Use appropriate tools strategically.

MP7: Look for and make use of structure.

MP8: Look for and express regularity in repeated reasoning.

**Locate and graph points on a coordinate plane.**

*(CC.6.NS.6b; CC.6.NS.6c; CC.6.NS.8)*

**Mathematical Practices:**

MP1: Make sense of problems and persevere in solving them.

MP4: Model with mathematics.

MP7: Look for and make use of structure.

		<p><b>Draw polygons in the coordinate plane and find the lengths of their sides.</b> <i>(CC.6.G.3; CC.6.NS.6c; CC.6.NS.8)</i></p> <p><b><u>Mathematical Practices:</u></b> MP4: Model with mathematics. MP6: Attend to precision. MP8: Look for and express regularity in repeated reasoning.</p> <p><b>Use translations, reflections, and rotations to change the positions of figures in the coordinate plane.</b> <i>(CC.6.NS.6b; CC.6.NS.6c; CC.6.NS.8)</i></p> <p><b><u>Mathematical Practices:</u></b> MP3: Construct viable arguments and critique the reasoning of others. MP7: Look for and make use of structure. MP8: Look for and express regularity in repeated reasoning.</p>	
--	--	---	--

<p><b>Lessons, Activities &amp; Student Products:</b></p> <p><b>Lessons:</b> Students will explain the steps required when dividing multi-digit numbers, including how to represent any amount left over as a fraction in the quotient.</p> <p>Students will learn to represent numbers by using exponents.</p> <p>Students will apply exponents to a problem-solving situation.</p> <p>Students will learn to apply the order of operations.</p> <p>Students will examine how to use the Commutative, Associative and Distributive Properties to find sums and products mentally.</p> <p>Students will evaluate algebraic expressions by substituting given values from the variable.</p> <p>Students will translate between words and math.</p> <p>Students will review techniques for finding possible relationships in a table. Then they will translate the relationship into an algebraic expression.</p>	<p><b>Lessons, Activities &amp; Student Products:</b></p> <p><b>Lessons:</b> Students will use three methods to find the GCF (greatest common factor) of a set of numbers.</p> <p>Students will use the distributive property to factor numerical and algebraic expressions.</p> <p>Students will use models and number lines to compare and order fractions.</p> <p>Students will use three methods to finding the LCM (least common multiple) of a group of numbers.</p> <p>Students will use inverse operations to solve equations by adding and subtracting fractions.</p> <p>Students will use a reciprocal and multiplication to divide by a fraction or mixed number.</p> <p>Students will solve equations by multiplying and dividing fractions, multiplying by a reciprocal to solve.</p>	<p><b>Lessons, Activities &amp; Student Products:</b></p> <p><b>Lessons:</b> Students will apply using a unit rate in a consumer application.</p> <p>Students will demonstrate how a table can be used to show equivalent ratios.</p> <p>Students will use graph paper to create a coordinate grid and graph ordered pairs.</p> <p>Students will use x- and y-coordinates to interpret ordered pairs.</p> <p>Students will demonstrate how to find a missing value in a proportion by using cross products.</p> <p>Students will write percents as decimals and fractions using a 10-by-10 square grid.</p> <p>Students will review each of the two methods presented for changing decimals to percents and fractions to percents.</p> <p>Students will find the percent of a number using two methods.</p>	<p><b>Lessons, Activities &amp; Student Products:</b></p> <p><b>Lessons:</b> Students will use data in a table to write an equation for a function and to find a missing value by solving a real-world problem involving functions.</p> <p>Students will represent linear functions using ordered pairs and graphs by finding and checking the solutions for equations with two variables and then they will graph the function described by the equation.</p> <p>Students will use a table to find the rates of change.</p> <p>Students will be introduced to inequalities involving a variable.</p> <p><b>Activities:</b> Students will create a table of values that can be expressed as functions such as the relationship of plates to silverware at the dinner table. They will write equations for the functions that represent the values in their tables.</p> <p>Students will write an equation</p>
---	--	---	---

<p>Students will determine whether given values for variables are solutions of equations. Then will apply the concept to real-world problems.</p> <p>Students will understand that addition and subtraction are inverse operations and that multiplication and division are inverse operations.</p> <p>Students will perform addition, subtraction, multiplication and division operations using decimals.</p> <p>Students will review the different ways to interpret quotients and the questions that signal each action to take.</p> <p>Students will write and solve decimal equations and place the equations in real-world content.</p> <p><b>Activities:</b></p> <p>Students should recite the necessary steps: divide, multiply, subtract, bring down. Students will use the mnemonic to remember the first letter of each step: Dad, Mom, Sister, and Brother.</p>	<p>Students will discover that range, mean, median, and modes are ways to summarize or describe a data set.</p> <p>Students will discover how adding data to an existing set of data and an outlier can change/affect the mean, median, and mode.</p> <p>Students will transition into the use of the median and mean to find measures of variation.</p> <p>Students will discover how an interval-based frequency table is related to a histogram.</p> <p>Students will explain how a box-and-whisker plot and a dot plot can be helpful in showing the distribution of data within a set.</p> <p><b>Activities:</b></p> <p>Students will work in groups of three to find the GCF. Each member of the group will use a different method for finding the GCF for the same problem.</p> <p>Students will use a ruler to compare fractions.</p>	<p>Students will solve one-step equations containing percents.</p> <p>Students will convert customary units by canceling units and also by using proportions.</p> <p>Students will convert metric units of measure using three methods: multiplying or dividing by powers of ten, canceling units or using proportions and using a table of metric measures to convert from a larger unit to a smaller unit and from a smaller unit to a larger unit.</p> <p>Students will estimate the area of an irregular figure on a grid by counting full, almost-full, and half-full squares.</p> <p>Students will find the area of a triangle and trapezoid through using a formula and through using concrete manipulatives.</p> <p>Students will break a composite figure into rectangles, triangles, and parallelograms to find the area of the figure.</p> <p>Students will estimate and find the volumes of rectangular prisms and triangular prisms by making a model to find the</p>	<p>using two variables. They will randomly switch with their classmates. The students will make a function table for the equations and write the solutions as ordered pairs.</p> <p>Students will be given a piece of uncooked spaghetti and graph paper. Students will graph the ordered pairs (4, 1) and (2, 3). Students will lay the spaghetti over the points to test if the points lie on a straight line. Students will determine that the rate of change is constant.</p> <p>Students will work in groups and use prepared cards of an inequality on one card and its matching graph on another card. Students will continue matching the inequality to its corresponding graphs until all the cards are used up.</p> <p><b>Student Products:</b></p> <p>Students will use the Function Tables they created to produce a graph described by the equations.</p> <p>Students will write in their Math Journal the difference between a constant and a variable rate of change and give an example for</p>
---	---	--	---

<p>Students will use calculators to evaluate exponents.</p> <p>Students will apply the order of operations to a real-world (consumer) context.</p> <p>Students will roll number cubes and generate numbers to be used in mentally applying the Distributive Property.</p> <p>Students will use index cards to write algebraic expressions for a word expression.</p> <p>Students will use a table to show how the dimensions of a rectangle are used to calculate perimeter and area.</p> <p>Students will simplify algebraic expressions with algebra tiles.</p> <p>Students will use cups and cubes to model inverse operations.</p> <p>Students will look through newspaper ads for items that, when combined, total less than \$50. They will subtract their totals from \$50 to find out how much change they would receive.</p> <p>Students will use decimal grids to model multiplication and</p>	<p>Students will spin spinners to generate sets of three or four 1- and 2- digit numbers. They will then use each of the three given methods to find the LCM for each set of numbers.</p> <p>Students will find recipes at home that involve mixed numbers that can be placed into addition and subtraction equations to share with the class.</p> <p>Students will use grids to model division of fractions.</p> <p>Students will write an equation on a strip of paper. Then, in groups, students will solve and check the solutions to each equation, explaining each step as they work through the problems.</p> <p>Students will gather data about the populations of 10 other cities in the state and find the range, mean, median, and mode for the data. Then they will explain which measure of central tendency best summarizes the data and why.</p> <p>Groups of students will research data sets with outliers. They will find the mean, median, and mode of the data and determine which</p>	<p>dimensions that would yield the volume. Students will then use the formula to determine volume of both prisms.</p> <p>Students will find surface area of prisms, pyramids, and cylinders by using nets and three-dimensional drawings to identify all of the faces of the figures.</p> <p>Students will identify and graph positive and negative integers and find opposites by using integer number lines and graphing positive and negative integers. To identify what opposites mean, students will use contexts other than math.</p> <p>Students will use a number line to compare and order integers.</p> <p>Students will be introduced to rational numbers and will graph them on a number line. They will use the number line to compare and order rational numbers.</p> <p>Students will locate and graph points on a coordinate plane by identifying the four quadrants of the plane and locating where on a coordinate plane a set of ordered pairs should go.</p>	<p>each.</p> <p>Students will work in pairs to consider absolute-value inequalities. Students will find numbers that satisfy the inequality and then sketch a graph of what they think the solution should be.</p>
--	--	--	--

<p>division of decimals.</p> <p>Students will make up and write a numerical division problem that would have a remainder. Then they will write three different word problems to go along with the division problem, each one requiring a different interpretation of the quotient.</p> <p>Students will solve decimal equations using decimal grids.</p> <p><b>Student Products:</b></p> <p>Students will perform the long division steps with two multi-digit numbers they choose. They will create a poster using that mnemonic.</p> <p>Students will write about how they would explain the use of exponents to a student who was absent from class.</p> <p>Put students in groups and each group will write several numerical expressions, with no more than three operations, for which the order of operations must be used. The group gives its actual value and an incorrect</p>	<p>is the best description of the data set.</p> <p>Students will pick topics to survey in the class. Then, using that data, they will create a box-and-whisker chart.</p> <p>Groups of students will present to the class data that they have found interesting through their research on using a frequency table with intervals and a histogram.</p> <p>Students will be given their quiz scores taken this year so far. They will create a box-and-whisker plot of their scores and discuss what the shape of the plot reveals about the student's performance.</p> <p><b>Student Products:</b></p> <p>Students will use copies of squares cut up into smaller pieces to demonstrate their understanding of comparing and ordering fractions.</p> <p>Students will create a spreadsheet to find the LCM of a set of numbers.</p> <p>Students will create word</p>	<p>Students will use the coordinate plane to find the lengths of the sides of rectangles and other polygons.</p> <p>Students will review each type of transformations by using examples of floor tiles, fabric patterns, mosaics, etc., describing how the image moved.</p> <p><b>Activities:</b></p> <p>Students will be provided with quantity pricing (e.g. 3 for \$1.46) for several different items from two different grocery stores and report their findings of unit rates for the items to compare their findings with those of their classmates.</p> <p>Students will use a road map to reinforce the concept of ratio and scale and discuss their experiences with reading a road map.</p> <p>Students will practice the skill learned by setting up their desks in rows and columns representing locations on a coordinate grid system. Students will then sit at their desks with one student at a time calling out ordered pairs for desks in the arrangement. That</p>	
--	---	---	--

<p>value that can be found by not following the order of operations.</p> <p>Students will write in their Math Journal about situations, people, or things that are evaluated.</p> <p>Students will write about how they determine whether an expression is one that will work for a table of data.</p> <p>Students will demonstrate, using a balance scale, an understanding that when a scale is balanced, the sum of the weights of the item on the left equals the sum of the weights of the items on the right.</p> <p>Students will use a colorful file folder to prepare a three-sided review of algebra.</p> <p>Students will use a spreadsheet to align decimals when adding and subtracting.</p> <p>Students will write in their Math Journal the steps to multiplying and dividing decimals.</p>	<p>problems using fraction bars to model the division of fractions.</p> <p>Students will produce a poster finding the mean, median, mode, and range of their group mates' heights in inches.</p> <p>Students will present to the class an advertisement in which they use outliers to skew data in their favor.</p> <p>Students will create a frequency table and histogram to present to the class on data of their choice.</p> <p>Students will write a three paragraph essay, describing several different ways that data can be shaped in a box-and-whisker plot or dot plot and what the shape means.</p>	<p>student in the seat will stand up.</p> <p>Students will explain how they know that a graph of a ratio or equivalent rate will never change, regardless of how long the lines extend. Students will use an example to explain.</p> <p>Students will use counters to model equivalent ratios.</p> <p>Students will use play money to model percents and decimals.</p> <p>Students will invent word problems that use the skill of finding the percent of a number.</p> <p>Students will find sales tax on assorted items.</p> <p>Students will measure several items in the classroom and set up a proportion for each item to determine an equivalent customary measure.</p> <p>Students will use the mnemonic: King Henry Doesn't Usually Drink Chocolate Milk to assist in remembering how to convert between metric units.</p> <p>Students will use graph paper to trace outlines of states on a map</p>	
--	--	---	--

		<p>of Australia. They will estimate the area of the states drawn.</p> <p>Working in pairs, students will draw a parallelogram and mark its base and height. Then students will cut their parallelogram in half to demonstrate that the two halves are congruent. Students will discover the formula for the area of a triangle.</p> <p>Students will be given tangram pieces to trace on graph paper, into a composite figure. Students will trade their figures with a partner to determine the areas of the individual figures and the total area of each composite figure.</p> <p>Students will use centimeter cubes to create rectangular prisms which they will use to determine the volume of prisms.</p> <p>Students will find three rectangular prisms in the classroom. They will measure and calculate the total surface area (in cm) of these rectangular prisms.</p> <p>Students will generate a list of opposite terms that are not math</p>	
--	--	---	--

		<p>related. Then, using this concept, students will name some pairs of opposite integers on an integer number line.</p> <p>Students will write the integers being compared on sticky notes and arrange them on a large number line on the board. They will explain why they placed the numbers in the position they did.</p> <p>Students will draw coordinate grid lines on maps of New Jersey. Students will label the grid lines with the appropriate numbers and give coordinates for various cities and towns on the map.</p> <p>Students will visualize how to move in the coordinate plane by mapping out a coordinate grid on the classroom floor. Students will walk the grid to plot points, a student at every point, and use a string to form a polygon.</p> <p>Students will draw a figure on a coordinate plane and name its vertices. Then they will translate, reflect, and rotate it to show the three transformations.</p>	
--	--	---	--

**Student Products:**

Students will illustrate, in a flyer, different items using quantity pricing to compare the best unit rates for each item.

Students will design a beaded friendship bracelet. They will write the ratio of one color to the other from the pattern they created. Then they will draw a table with the colors in the first column and the original ratio in the second column. They will use the table to produce four equivalent ratios.

Students will model solving proportions using a lemonade recipe.

Students will make models to show equivalent fractions, decimals and percents by preparing 10-by-10 squares with grid paper and then dividing blank squares of the same size into fourths, fifths, tenths, and twenty-fifths.

Students will create their own "WAR" card game using eight cards having a fraction, eight cards having a decimal and eight having a percent written on them.

		<p>The player with the largest value wins the round.</p> <p>Students will produce statements from newspapers and magazines discussing the percent of a number and discuss what these statements mean.</p> <p>Students will work in pairs to create their own nonstandard unit of measure and label it on an index card. Then each student will teach the nonstandard unit of measure to their partner.</p> <p>Students will write in their Math Journals the steps used to find the area of a rectangle and parallelogram using a formula.</p> <p>Students will write in their Math Journals what they discovered when they cut the parallelogram in half and when they drew a trapezoid and cut it into a rectangle and two triangles.</p> <p>Students will construct rectangular and triangular prisms from nets to be used to measure and record the dimensions of their prisms.</p> <p>Students will write in their Math Journals the steps on how to</p>	
--	--	---	--

		<p>transform figures on a coordinate plane. They are to include background, instructions, and any other helpful tips and insights.</p>	
--	--	--	--

<p><b><u>21<sup>st</sup> Century Skills:</u></b></p> <ul style="list-style-type: none"> <li>✓ Creativity &amp; Innovation</li> <li>✓ Critical Thinking &amp; Problem Solving</li> <li>✓ Communication</li> <li>✓ Collaboration</li> </ul>	<p><b><u>21<sup>st</sup> Century Skills:</u></b></p> <ul style="list-style-type: none"> <li>✓ Creativity &amp; Innovation</li> <li>✓ Critical Thinking &amp; Problem Solving</li> <li>✓ Communication</li> <li>✓ Collaboration</li> </ul>	<p><b><u>21<sup>st</sup> Century Skills:</u></b></p> <ul style="list-style-type: none"> <li>✓ Creativity &amp; Innovation</li> <li>✓ Critical Thinking &amp; Problem Solving</li> <li>✓ Communication</li> <li>✓ Collaboration</li> </ul>	<p><b><u>21<sup>st</sup> Century Skills:</u></b></p> <ul style="list-style-type: none"> <li>✓ Creativity &amp; Innovation</li> <li>✓ Critical Thinking &amp; Problem Solving</li> <li>✓ Communication</li> <li>✓ Collaboration</li> </ul>
<p><b>Essential Questions:</b></p> <p>What are the steps to solve a division problem?</p> <p>How can you write and find values in exponential form?</p> <p>What is the order of operations?</p> <p>How can we use the commutative, associative and distributive properties by doing mental math?</p> <p>How do you identify and evaluate expressions?</p> <p>What are the words used to describe each operation?</p> <p>What are some techniques for finding possible relationships in a table?</p> <p>How can you determine whether a number is a solution of an equation?</p>	<p><b>Essential Questions:</b></p> <p>What are the two methods to finding the greatest common factor of a set of numbers?</p> <p>How can you use the greatest common factor and the Distributive Property to factor numerical expressions?</p> <p>How can you order a set of numbers containing both fractions and decimals?</p> <p>What are equivalent fractions? How can you change from an improper fraction to a mixed number and vice versa?</p> <p>How can you compare unlike fractions?</p> <p>What are the three methods you can use to find the least common multiple of a group of numbers?</p> <p>What are the steps to adding and subtracting fractions with unlike</p>	<p><b>Essential Questions:</b></p> <p>How do you find an equivalent ratio?</p> <p>How can you use a table to find equivalent ratios and rates?</p> <p>How are coordinate grid and ordered pair related?</p> <p>How do you know that the graph of a ratio or equivalent rate will never change, regardless of how long the line extends?</p> <p>How can you demonstrate how to find a missing value in a proportion by using cross products?</p> <p>How can you model percent by using a 10-by-10 grid and showing the percent as an equivalent decimal and fraction?</p> <p>What are two methods for changing decimals to percents and fractions to percents? What</p>	<p><b>Essential Questions:</b></p> <p>How can you use data in a table to write an equation for a function and use the equation to find a missing value?</p> <p>How can you represent linear functions using ordered pairs and graphs?</p> <p>How do you find rates of change and slope?</p> <p>How can you explain how to graph an inequality on a number line?</p> <p>How can you describe the difference in graphing greater than/less than and greater than or equal to/less than or equal to?</p>

<p>What are the steps to finding solutions to whole number addition equations?</p> <p>What are the steps to finding solutions to whole number subtraction equations?</p> <p>What are the steps to solving whole number multiplication equations?</p> <p>What are the steps to solving whole number division equations?</p> <p>What is the importance of aligning the decimals before solving a problem and using an estimate to check for reasonableness?</p> <p>What are the steps to multiplying decimals?</p> <p>What is the difference between dividing a decimal by a whole number and dividing a whole number by a whole number?</p> <p>How do you change the divisor and dividend to solve <math>2.4/0.5</math>?</p> <p>What are some different ways to interpret quotients and the questions that signal each action</p>	<p>denominators?</p> <p>How can you compare solving equations by adding and subtracting fractions with solving equations by adding and subtracting whole numbers?</p> <p>How do you use the reciprocal of fractions to divide fractions?</p> <p>What are the steps used in solving equations when multiplying and dividing fractions?</p> <p>How do you find the mean, median, mode and range of a data set?</p> <p>What is an outlier and how can it affect a set of data?</p> <p>Without calculating the interquartile range and mean absolute value for a data set, how might the statistics change with the change in the data set?</p> <p>What are the procedures for completing a frequency table based on intervals and how does an interval-based frequency table relate to a histogram?</p>	<p>is the advantage of each method?</p> <p>How can you compare the two methods of finding a percent of a number (using a proportion and multiplying by a decimal)?</p> <p>How can you describe how to solve a percent equation: percent <math>\times</math> whole = part, if you know the part and the whole or the percent and the part?</p> <p>What are two ways of converting customary units of measure?</p> <p>What are the steps to follow to convert from a larger unit to a smaller unit and from a smaller unit to a larger unit?</p> <p>How can you estimate the area of irregular figures and find the area of rectangles and parallelograms?</p> <p>How can you find the area of triangles and trapezoids?</p> <p>How can you find the area of an irregular figure?</p> <p>What are the formulas for finding the volume of a rectangular prism and the volume of a triangular prism?</p>	
--	--	--	--

<p>to take?</p> <p>What are the steps to solving equations involving decimals?</p>	<p>How can a box-and-whisker plot and a dot plot be helpful in showing the distribution of data within a set?</p>	<p>How can a net help when finding the surface area of a three-dimensional figure?</p> <p>How do the terms positive, negative, opposites, integer and absolute value relate to each other?</p> <p>How can a number line show integers' relationships?</p> <p>How can you describe the steps to locating and graphing points on a coordinate plane?</p> <p>How can you explain how the coordinate plane can be used to find the lengths and widths of rectangles?</p> <p>What process is used when performing translations, reflections, and rotations, to change the positions of figures in the coordinate plane?</p>	
--	---	--	--

<p><b>Materials:</b></p> <p><b>Holt McDougal Mathematics 6: Lessons 1- Operations and Properties</b></p> <p><b>Lesson 2 – Understanding Variables and Expressions</b></p> <p><b>Lesson 3 – Decimals</b></p> <p><a href="http://www.thinkcentral.com">www.thinkcentral.com</a>  <a href="http://www.classzone.com">www.classzone.com</a>  <a href="http://illustrativemathematics.org">http://illustrativemathematics.org</a>  <a href="http://realworldmath.org">//realworldmath.org</a>  <a href="http://nlvm.usu.edu/">//nlvm.usu.edu/</a></p> <p>SmartBoard  Communicators  Calculators  number cubes  grid paper  scissors  balance scale  Algebra tiles or counters index cards  decimal grids or grid paper  colored pencils  transparency grids  graph paper</p>	<p><b>Materials:</b></p> <p><b>Holt McDougal Mathematics 6: Lessons 4- Number Theory and Fractions</b></p> <p><b>Lesson 5 – Fraction Operations</b></p> <p><b>Lesson 6 – Data Collection and Analysis</b></p> <p><a href="http://www.thinkcentral.com">www.thinkcentral.com</a>  <a href="http://www.classzone.com">www.classzone.com</a>  <a href="http://illustrativemathematics.org">http://illustrativemathematics.org</a>  <a href="http://realworldmath.org">//realworldmath.org</a>  <a href="http://nlvm.usu.edu/">//nlvm.usu.edu/</a></p> <p>SmartBoard  Communicators  Calculators  decimal grids or grid paper  fraction bars  pattern blocks  number cubes  customary rulers  fraction bar transparency  spinners  counters  magazines or newspapers containing data sets with outliers  graph paper</p>	<p><b>Materials:</b></p> <p><b>Holt McDougal Mathematics 6: Lessons 7- Proportional Relationships</b></p> <p><b>Lesson 8 – Measurement and Geometry</b></p> <p><b>Lesson 9– Integers and the Coordinate Plane</b></p> <p><a href="http://www.thinkcentral.com">www.thinkcentral.com</a>  <a href="http://www.classzone.com">www.classzone.com</a>  <a href="http://illustrativemathematics.org">http://illustrativemathematics.org</a>  <a href="http://realworldmath.org">//realworldmath.org</a>  <a href="http://nlvm.usu.edu/">//nlvm.usu.edu/</a></p> <p>SmartBoard  Communicators  Colored pencils  graph paper  road maps  two-color counters  10-by-10 grids  number cubes  calculators  media advertisements involving percents,  map of Australia  Geometry software  centimeter cubes  centimeter graph paper  prism model (boxes)  scissors,</p>	<p><b>Materials:</b></p> <p><b>Holt McDougal Mathematics 6: Lesson 10- Functions</b></p> <p><a href="http://www.thinkcentral.com">www.thinkcentral.com</a>  <a href="http://www.classzone.com">www.classzone.com</a>  <a href="http://illustrativemathematics.org">http://illustrativemathematics.org</a>  <a href="http://realworldmath.org">//realworldmath.org</a>  <a href="http://nlvm.usu.edu/">//nlvm.usu.edu/</a></p> <p>SmartBoard  Communicators  Graph paper  square tiles  uncooked spaghetti</p>
---	--	--	---

		<p>tape  two-colored counters  large sticky notes  state maps  grid paper  pattern blocks</p>	
<p><b>Assessment:</b></p> <p>Pre-course Assessment</p> <p>Multi -Lesson Quizzes</p> <p>Singular Lesson Pop Quizzes</p> <p>Lesson Tests</p> <p>Teacher Observations</p> <p>Student Input using Communicators, Projects, and Quarterly Assessment</p>	<p><b>Assessment:</b></p> <p>Multi -Lesson quizzes</p> <p>Singular Lesson Pop Quizzes</p> <p>Lesson Tests</p> <p>Teacher Observations</p> <p>Student Input using Communicators, Projects, and Quarterly Assessment</p>	<p><b>Assessment:</b></p> <p>Multi -Lesson quizzes</p> <p>Singular Lesson Pop Quizzes</p> <p>Lesson Tests</p> <p>Teacher Observations</p> <p>Student Input using Communicators, Projects, and Quarterly Assessment</p>	<p><b>Assessment:</b></p> <p>Post- Course Assessment</p> <p>Multi-Lesson Quizzes</p> <p>Singular Lesson Pop Quizzes</p> <p>Lesson Tests</p> <p>Teacher Observations</p> <p>Student Input using Communicators, Projects, Quarterly Assessment, and Placement Test</p>

<p><b>CCSS:</b></p> <p><b>6.NS: The Number System</b> Apply and extend previous understandings of multiplication and division to divide fractions by fractions.</p> <p><b>6.NS.2:</b> Fluently divide multi-digit numbers using the standard algorithm.</p> <p><b>6.NS.3:</b> Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.</p> <p><b>6.NS.4:</b> 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.</p> <p><b>6.EE: Expressions and Equations</b> Apply and extend previous understandings of arithmetic to algebraic expressions.</p>	<p><b>CCSS:</b></p> <p><b>6.NS: The Number System</b> Apply and extend previous understandings of multiplication and division to divide fractions by fractions.</p> <p><b>6.NS.1:</b> 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.</p> <p><b>6.NS.4:</b> 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.</p> <p><b>6.NS.7:</b> Understand ordering and absolute value of rational numbers.</p> <p><b>6.EE: Expressions and Equations</b> Apply and extend previous understandings of arithmetic to</p>	<p><b>CCSS:</b></p> <p><b>6.NS: The Number System</b> Apply and extend previous understandings of numbers to the system of rational numbers.</p> <p><b>6.NS.5:</b> 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.</p> <p><b>6.NS.6:</b> 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.</p> <p><b>6.NS.6a:</b> 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.</p>	<p><b>CCSS:</b></p> <p><b>6.EE: Expressions and Equations.</b></p> <p><b>6.EE.8:</b> Write an inequality of the form <math>x &gt; c</math> or <math>x &lt; c</math> to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities of the form <math>x &gt; c</math> or <math>x &lt; c</math> have infinitely many solutions; represent solutions of such inequalities on number line diagrams.</p> <p><b>Represent and analyze quantitative relationships between dependent and independent variables.</b></p> <p><b>6.EE.9:</b> 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.</p>
---	---	---	---

<p><b>6.EE.1:</b> Write and evaluate numerical expressions involving whole-number exponents.</p> <p><b>6.EE.2:</b> Write, read, and evaluate expressions in which letters stand for numbers.</p> <p><b>6.EE.2a:</b> Write expressions that record operations with numbers and with letters standing for numbers.</p> <p><b>6.EE.2b:</b> Identify parts of an expression using mathematical terms (sums, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity.</p> <p><b>6.EE.2c:</b> 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).</p> <p><b>6.EE.3:</b> Apply the properties of operations to generate equivalent expressions.</p>	<p>algebraic expressions.</p> <p><b>6.EE.2b:</b> Identify parts of an expression using mathematical terms (sums, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity.</p> <p><b>6.EE.3:</b> Apply the properties of operations to generate equivalent expressions.</p> <p><b>6.EE.4:</b> Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them).</p> <p><b>6.EE.7:</b> Solve real-world and mathematical problems by writing and solving equations of the form <math>x + p = q</math> and <math>px = q</math> for cases in which <math>p</math>, <math>q</math>, and <math>x</math> are all nonnegative rational numbers.</p> <p><b>6.SP: Statistics and Probability</b> Develop understanding of statistical variability.</p> <p><b>6.SP.1:</b> Recognize a statistical question as one that anticipates variability in the data related to the question and account for it in</p>	<p><b>6.NS.6b:</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.</p> <p><b>6.NS.6c:</b> 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.</p> <p><b>6.NS.7:</b> Understand ordering and absolute value of rational numbers.</p> <p><b>6.NS.7a:</b> Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram.</p> <p><b>6.NS.7b:</b> Write, interpret, and explain statements of order for rational numbers in real-world contexts.</p> <p><b>6.NS.7c:</b> Understand the absolute value of a rational number as its distance from 0 on the number line, interpret</p>	
--	--	---	--

<p><b>6.EE.4:</b> Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them).</p> <p><b>6.EE.5:</b> 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.</p> <p><b>6.EE.6:</b> 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.</p> <p><b>6.EE.7:</b> Solve real-world and mathematical problems by writing and solving equations of the form <math>x + p = q</math> and <math>px = q</math> for cases in which <math>p</math>, <math>q</math>, and <math>x</math> are all nonnegative rational numbers.</p>	<p>the answers.</p> <p><b>6.SP.2:</b> 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.</p> <p><b>6.SP.3:</b> 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.</p> <p><b>6.SP.4: Summarize and describe distributions.</b> Display numerical data in plots on a number line, including dot plots, histograms and box plots.</p> <p><b>6.SP.5:</b> Summarize numerical data sets in relation to their context.</p> <p><b>6.SP.5a:</b> Reporting the number of operations.</p> <p><b>6.SP.5b:</b> Describing the nature of the attribute under investigation, including how it was measured and its units of measurement.</p>	<p>absolute value as magnitude for a positive or negative quantity in a real-world situation.</p> <p><b>6.NS.7d:</b> Distinguish comparisons of absolute value from statements about order.</p> <p><b>6.NS.8:</b> 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.</p> <p><b>6.EE: Expressions and Equations.</b></p> <p><b>6.EE.2c:</b> 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).</p>	
--	---	---	--

	<p><b>6.SP.5c:</b> 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.</p> <p><b>6.SP.5d:</b> 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.</p>	<p><b>6.RP: Ratios and Proportional Relationships.</b> Understand ratio concepts and use ratio reasoning to solve problems.</p> <p><b>6.RP.1:</b> Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities.</p> <p><b>6.RP.2:</b> Understand the concept of a unit rate <math>a/b</math> associated with a ratio <math>a:b</math> with <math>b \neq 0</math>, and use rate language in the context of a ratio relationship.</p> <p><b>6.RP.3:</b> 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.</p> <p><b>6.RP.3a:</b> 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.</p> <p><b>6.RP.3b:</b> Solve unit rate problems including those</p>	
--	--	---	--

		<p>involving unit pricing and constant speed.</p> <p><b>6.RP.3c:</b> 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.</p> <p><b>6.RP.3d:</b> Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.</p> <p><b>6.G: Geometry: Solve real-world and mathematical problems involving area, surface area, and volume.</b></p> <p><b>6.G.1:</b> 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.</p> <p><b>6.G.2:</b> find the volume of a right rectangular prism with fractional edge lengths by packing it with</p>	
--	--	---	--

		<p>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 <math>V = l w h</math> and <math>V = b h</math> to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.</p> <p><b>6.G.3:</b> 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.</p> <p><b>6.G.4:</b> 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.</p>	
--	--	---	--

## **Mathematical Practices**

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