



<b>Course Title:</b> <b>Sixth Grade Math</b>		
<b>Description:</b> Sixth Grade math focuses on four critical areas: <ul style="list-style-type: none"><li>• Use concepts of ratios and rate to solve problems</li><li>• Understand division of fractions</li><li>• Use expressions and equations</li><li>• Understand statistical reasoning</li></ul>		
<i><b>Number and Quantity</b></i>		
<b><u>Reporting Topic</u></b>	<b><u>Grade Level Standards</u></b>	<b><u>Competency Statement</u></b>
<b><u>Multiplying and Dividing Fractions</u></b>	<ul style="list-style-type: none"><li>• 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.A.1)</li></ul>	Students will interpret and calculate division with fraction problems including word problems.
<b><u>Ratios and Unit Rates</u></b>	<ul style="list-style-type: none"><li>• Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. (6.RP.A.1)</li><li>• 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. (6.RP.A.2)</li><li>• 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.3)</li></ul>	Students will understand ratios and unit rates in order to solve real world problems.
<b><u>Rational and Irrational Numbers</u></b>	<ul style="list-style-type: none"><li>• Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation. (6.NS.C.5)</li><li>• Understand a rational number as a point on the number line.</li></ul>	Students will use positive and negative numbers to represent quantities in real world contexts, explaining the meaning of 0 in each situation



	<p>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.6)</p> <ul style="list-style-type: none"> <li>Understand ordering and absolute value of rational numbers(6.NS.7)</li> </ul>	
<i><b>Operations and Algebra</b></i>		
<b><u>Reporting Topic</u></b>	<b><u>Grade Level Standards</u></b>	<b><u>Competency Statement</u></b>
<b><u>Addition and Subtraction</u></b>	<ul style="list-style-type: none"> <li>Fluently add, subtract, multiply, and divide multi digit decimals using the standard algorithm for each operation. (6.NS.B.3)</li> </ul>	Students will add and subtract multi-digit decimals
<b><u>Multiplication and Division</u></b>	<ul style="list-style-type: none"> <li>Fluently divide multi digit numbers using the standard algorithm. (6.NS.B.2)</li> <li>Fluently add, subtract, multiply, and divide multi digit decimals using the standard algorithm for each operation. (6.NS.B.3)</li> <li>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. (6.NS.B.4)</li> </ul>	Students will multiply and divide multi-digit decimals, as well as, find greatest common factor and least common multiple of two whole numbers
<b><u>Expressions and Equations</u></b>	<ul style="list-style-type: none"> <li>Write and evaluate numerical expressions involving whole-number exponents. (6.EE.A.1)</li> <li>Write, read, and evaluate expressions in which letters stand for numbers (6.EE.A.2)</li> <li>Apply the properties of operations to generate equivalent expressions. (6.EE.A.3)</li> <li>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.4)</li> </ul>	Students will solve equations with or without a variable, as well as, determine when expressions are equivalent.
	<ul style="list-style-type: none"> <li>Understand solving an equation or inequality as a process of answering a question; which values from a specified set, if any,</li> </ul>	Students will use variables to represent two quantities in order to



<p><b><u>Equations and Inequalities</u></b></p>	<p>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.5)</p> <ul style="list-style-type: none"> <li>• 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.6)</li> <li>• 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 (6.EE.B.7)</li> <li>• 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. (6.EE.B.8)</li> <li>• 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. (6.EE.C.9)</li> </ul>	<p>solve and graph equations and inequalities.</p>
<p style="text-align: center;"><b><i>Geometry</i></b></p>		
<p><b><u>Reporting Topic</u></b></p>	<p><b><u>Grade Level Standards</u></b></p>	<p><b><u>Competency Statement</u></b></p>
<p><b><u>Coordinate System</u></b></p>	<ul style="list-style-type: none"> <li>• 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.6)</li> <li>• 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.8)</li> </ul>	<p>Students will use the coordinate system to draw polygons, and solve real world problems involving distances.</p>



	<ul style="list-style-type: none"> <li>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.3)</li> </ul>	
<b><u>Area</u></b>	<ul style="list-style-type: none"> <li>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.1)</li> </ul>	Students will find the area of polygons in real world problems.
<b><u>Surface Area</u></b>	<ul style="list-style-type: none"> <li>Represent three-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems. (6.G.A.4)</li> </ul>	Students will find the surface area of 3-D figures using nets of rectangles and triangles.
<b><u>Volume</u></b>	<ul style="list-style-type: none"> <li>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 <math>V = lwh</math> and <math>V = bh</math> to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems. (6.G.A.2)</li> </ul>	Students will find the volume of a right rectangular prisms in the context of real world problems.
<b><i>Measurement, Data, Statistics, and Probability</i></b>		
<b><u>Reporting Topics</u></b>	<b><u>Grade Level Standards</u></b>	<b><u>Competency Statement</u></b>
<b><u>Data Distributions</u></b>	<ul style="list-style-type: none"> <li>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.1)</li> <li>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.2)</li> <li>Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a</li> </ul>	Students will summarize, display, and describe distributions of number sets.



	<p>measure of variation describes how its values vary with a single number. (6.SP.A.3)</p> <ul style="list-style-type: none"><li>• Display numerical data in plots on a number line, including dot plots, histograms, and box plots. (6.SP.B.4)</li><li>• Summarize numerical data sets in relation to their context. (6.SP.5)</li></ul>	
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