

SIXTH GRADE MATH

	UNITS OR THEMES	INSTRUCTIONAL STRATEGIES	FORMS OF ASSESSMENT	LEARNING OUTCOMES
Quarter 1	<p>Numeration</p> <ul style="list-style-type: none"> - Place value - Comparing and ordering whole numbers - Place value of exponents - place value of decimals - multiplication and division by 10, 100, 1,000 - comparing and ordering decimals - Make an Organized List - Roman numerals to 1,000 - Algebraic expressions <p>Variables, Expressions and Properties</p> <ul style="list-style-type: none"> - variables in expression - properties of operations - distributive property - mental math - expressions describing patterns - Make a Table <p>Decimals</p> <ul style="list-style-type: none"> - operations with decimals - estimation of sums, differences, products and quotients - division of whole numbers by decimals - evaluating expression - scientific notation - Multi-step problems 	<ul style="list-style-type: none"> - Text/lecture/discussion - Videos – Khan Academy, MathAntics.com - Daily reviews - Games – reinforcing fluency - Differentiation using worksheets and small group instruction - Lessons and activities through resources such as NCTM (National Council of Teachers of Mathematics) - Homework 	<p>Textbook resources:</p> <ul style="list-style-type: none"> - Quick check - Daily spiral reviews - End-of-chapter reviews and assessments <p>Formative quizzes Summative tests Exit slips</p>	<ul style="list-style-type: none"> - read, write, compare and order numbers from ten thousandths to hundred trillions - Express a number using exponents - Multiply and divide by 10, 100, 1,000 - Read and write Roman numerals to 1,000 - Understand equalities - Apply problem solving strategy, Make an Organized List <ul style="list-style-type: none"> - write and evaluate algebraic expressions - use properties of operations in writing expressions - apply order of operations - using order of operations with exponents - use the distributive property to evaluate expressions and in mental math - use expressions to describe patterns - apply problem solving strategy - Make a Table <ul style="list-style-type: none"> - use rounding and front end numbers to estimate sums and differences of decimals - use rounding and compatible numbers to estimate products and quotients - compute sums, differences, products and quotients of decimals - multiply and divide whole numbers by decimals and decimals by decimals - evaluate expressions using order of operations and brackets - write large numbers using exponents (scientific notation) - solve multi-step problems

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Quarter 2	<p>Solving Equations</p> <ul style="list-style-type: none"> - properties of equalities - addition, subtraction, multiplication and division equations - PSS Draw a picture, write an equation 	<ul style="list-style-type: none"> - Text/lecture/discussion - Videos – Khan Academy, MathAntics.com - Daily reviews - Games – reinforcing fluency and increasing recall rate - Differentiation using worksheets and small group instruction - Lessons and activities through resources such as NCTM (National Council of Teachers of Mathematics) - Homework 	<p>Textbook resources:</p> <ul style="list-style-type: none"> - Quick check - Daily spiral reviews - End-of-chapter reviews and assessments <p>Formative quizzes Summative tests Exit slips</p>	<ul style="list-style-type: none"> - Learn the steps to solve equations beginning with the concept that performing the same operation on both sides of an equation with the same amount will keep the equation balanced - Demonstrate knowledge that addition and subtraction have an inverse relationship ; as do multiplication and division - Use this knowledge to solve for a variable ; drawing pictures in place of words assist visual learners <p>-Apply knowledge of factors to simplify fractions in order to solve expressions</p>
	<p>Decimals, Fractions & Mixed Numbers</p> <ul style="list-style-type: none"> - fractions and division - fractions and decimals - improper fractions and mixed numbers - decimal forms of fractions and mixed numbers - algebra connections 	-		<ul style="list-style-type: none"> - Express a fraction as a numerator divided by a denominator - Use the place value of a decimal as the denominator when writing a fraction - Change mixed numbers into improper fractions and vice versa - Use simplification knowledge to express decimals as simplified fractions - Find the mathematical relationship between two variables to write an expression
	<p>Adding & subtracting mixed numbers and fractions</p> <ul style="list-style-type: none"> - add/subtract with like/unlike denominators - least common multiple - estimating sums and differences of mixed numbers - add/subtract mixed numbers - Make a table 			<p>-Solve expressions when denominators are the same ; use least common multiple (LCM) concept to solve when denominators are unlike</p> <p>-Add/subtract fractions using LCM knowledge</p> <p>-Make a table to solve equations</p>
	<p>Measurement</p> <ul style="list-style-type: none"> -converting customary measures -converting metric measures -units of measure and precision 			<ul style="list-style-type: none"> - Convert an unit measure to another both customary and metric - Use measuring tools to make precise measurements

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Quarter 3	<p>Multiplying Fractions and Mixed Numbers</p> <ul style="list-style-type: none"> - multiply fraction and whole number - estimating products - multiplying fractions - multiplying mixed numbers <ul style="list-style-type: none"> - Problem solving multi-step problems <p>Dividing Fractions and Mixed Numbers</p> <ul style="list-style-type: none"> - understanding division of fractions - dividing a whole number by a fraction - dividing fractions - estimating quotients - dividing mixed numbers - Algebra - Solving equations - PSS Look for a pattern <p>Integers</p> <ul style="list-style-type: none"> - understanding integers - comparing and ordering integers - rational numbers on a number line - adding and subtracting integers - multiplying and dividing integers - solving equations with integers - graphing points on a coordinate plane <p>Properties of 2-Dimensional Figures</p> <ul style="list-style-type: none"> - basic geometric ideas - measuring and drawing angles - angle pairs - triangles, quadrilaterals, circles - transformations, congruence, symmetry - Make a Table, Look for a Pattern 	<ul style="list-style-type: none"> - Text/lecture/discussion - Videos – Khan Academy, MathAntics.com - Daily reviews - Games – reinforcing fluency and increasing recall rate - Differentiation using worksheets and small group instruction - Lessons and activities through resources such as NCTM (National Council of Teachers of Mathematics) - Homework <p style="text-align: center;">-</p>	<p>Textbook resources:</p> <ul style="list-style-type: none"> - Quick check - Daily spiral reviews - End-of-chapter reviews and assessments <p>Formative quizzes Summative tests Exit slips</p> <p style="text-align: center;">-</p>	<ul style="list-style-type: none"> - Use knowledge of factors to simplify expressions before multiplying fractions - Apply rounding concepts to estimate products - Use greatest common factors to simplify before multiplication, or after to simplify the product - Identify hidden questions in word problems to complete multi-step problems <p>-Apply knowledge of mathematical terms to understand relationship of size of divisor to size of quotient compared to dividend</p> <p>-Use reciprocals to solve expressions with division of fractions</p> <p>-Round fractions to nearest whole number</p> <p>-Apply Solving Equations concepts to solve equations with fractions</p> <ul style="list-style-type: none"> - Demonstrate that integers have opposites and absolute values - Use number lines to order integers from least to greatest - Convert decimals into fractions in order to compare and order integers - Compute sum and differences when integers have the same sign and when they have different signs - Compute the products and quotients of integers - Apply knowledge of solving equations to solve equations with integers - Graph ordered pairs on a coordinate plane <p>-Draw/identify basic geometric figures with symbols</p> <p>-Use a compass to measure/draw angles</p> <p>-Identify size of angles using given information</p> <p>-Identify triangles and quadrilaterals by their angles and sides</p> <p>-Identify angles in triangles, quadrilaterals, and circles through provided information</p> <p>-Describe circles using terminology</p> <p>-Use concept of congruence to find measures of angles and sides</p> <p>-Make a table using information provided in a pattern</p>

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Quarter 3 (continued)	<p>Perimeter and area</p> <ul style="list-style-type: none"> -perimeter -area of rectangles and irregular figures -circumference -area of circle -use objects <p>Data and graphs</p> <ul style="list-style-type: none"> -reading and making graphs -circle graphs -comparing graphs -mean, median, mode, range 	<ul style="list-style-type: none"> -Text/lecture/discussion - Videos – Khan Academy, MathAntics.com - Daily reviews - Games – reinforcing fluency and increasing recall rate - Differentiation using worksheets and small group instruction - Lessons and activities through resources such as NCTM (National Council of Teachers of Mathematics) - Homework 	<p>Textbook resources:</p> <ul style="list-style-type: none"> - Quick check - Daily spiral reviews - End-of-chapter reviews and assessments <p>Formative quizzes Summative tests Exit slips</p>	<ul style="list-style-type: none"> -calculate perimeter of area of given figures; apply strategies when an irregular figure -calculate circumference and area of circles <ul style="list-style-type: none"> - Interpret graphs -Make graphs in the appropriate format -Identify the mean, median, mode, and range of given data

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Quarter 4	<p>Ratios, Rates and Proportions</p> <ul style="list-style-type: none"> - understanding Ratios - equal ratios and proportions - understanding rates and unit rates - comparing rates - distance, rate and time - draw a picture <p>Solving Proportions</p> <ul style="list-style-type: none"> - using ratio tables - using unit rates - strategies in solving proportions - similar figures - maps and scale drawings <p>Understanding Percent</p> <ul style="list-style-type: none"> - understanding percent - fractions, decimals, percents - percents greater than 100 & less than 1 -estimating percent - finding the percent of a number - tips, taxes, discount and simple interest - reasonableness <p>Equations and Graphs</p> <ul style="list-style-type: none"> - equations with more than one operation - patterns and equations - graphing equations - graphing equations with more than 1 operation <p>Volume and surface area</p> <ul style="list-style-type: none"> -solid figures -surface area -volume of rectangular prisms -volume of triangular prisms 	<ul style="list-style-type: none"> -Text/lecture/discussion - Videos – Khan Academy, MathAntics.com - Daily reviews - Games – reinforcing fluency and increasing recall rate - Differentiation using worksheets and small group instruction - Lessons and activities through resources such as NCTM (National Council of Teachers of Mathematics) - Homework 	<p>Textbook resources:</p> <ul style="list-style-type: none"> - Quick check - Daily spiral reviews - End-of-chapter reviews and assessments <p>Formative quizzes</p> <p>Summative tests</p> <p>Exit slips</p>	<ul style="list-style-type: none"> -Write ratios in three ways -Use GCF concepts to find equal ratios -Convert word problems into fractions, then simplify to unit rate -Use division to compare rates -Use the $d = r \times t$ formula and algebra concepts to solve for an unknown variable -Draw pictures to show a described ratio <ul style="list-style-type: none"> - Compare two variables in a table and translate into proportion format - Divide terms of a ratio to calculate unit rate - Use cross multiplication to solve proportions - Apply proportion solving process to solve for missing information between similar figures and make scale drawings <p>-Demonstrate knowledge of word “percent”</p> <ul style="list-style-type: none"> -Write a percent as a fraction and a decimal; convert one form to any other -Write fractions, decimals, percentages when numbers are greater than 100 and less than 1 -Use proportions to find the percent of a number -Find the appropriate amount to tip or discount using percents -Apply knowledge of percents and problem solving to check that answers are reasonable <ul style="list-style-type: none"> - Balance equations while addressing each operation - Use tables to identify patterns and solve equations - Graph equations on coordinate planes