

## Mathematics Curriculum Grade 6

Anchor	Number	Sixth Grade Expectations	Every sixth grader should be able to:	Text pages or supplementary	Date assessed
6A. Numbers and Operations					
1. Demonstrate an understanding of numbers, ways of representing numbers, relationships among numbers and number systems.	6A.1.1	Demonstrate number sense for fractions, mixed numbers, decimals, percents, and integers.	6A 1.1.1 Read, write, and represent fractions, mixed numbers, decimals, and integers using symbols, words, and models (including finding the approximate location on a number line.)		
			6A 1.1.2 Develop and use models to represent percents between 0-100% (e.g. circle graph, hundreds blocks).		
			6A 1.1.3 Demonstrate an understanding of ratio and use ratios in different contexts to show relationship for two quantities (e.g. miles per hour, batting averages), utilizing appropriate notation (a/b, a to b, a:b)		
	6A.1.2	Express numbers in equivalent forms.	6A 1.2.1 Represent common percents as fractions and/or decimals. Common percents are 1%, 10%, 25%, 50%, 75%, and 100%.		
			6A 1.2.2 Convert between fractions and decimals and differentiate between a terminating and a repeating decimal.		
			6A 1.2.3 Use exponential form to represent repeated multiplication, developing fluency with the powers of 10. $1000 = 10 \times 10 \times 10 = 10^3$		
	6A.1.3	Compare quantities and or magnitude of numbers.	6A 1.3.1 Compare and /or order integers (no more than a set of 5 numbers).		
			6A 1.3.2 Compare and/or order whole numbers, mixed numbers, fractions, or decimals through thousandths. (Do not mix fractions and decimals).		
	6A.1.4	Apply number theory concepts (i.e., factors, multiples).	6A 1.4.1 Find the Greatest Common Factor for two numbers (as high as 50) and use the GCF to reduce a fraction to its lowest terms.		
			6A 1.4.2 Find the Least Common Multiple for two numbers (as high as 50) and use the LCM to find the lowest common denominator for 2 fractions.		
			6A 1.4.3 Use the divisibility rules for 2, 3, 5, 9, and 10 to solve problems.		
			6A 1.4.4 Determine prime and composite numbers, and prime factorization to find patterns and to solve problems.		

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<b>6A. Numbers and Operations</b>					
2.	6A2.1	Select and use operations to simplify or solve problems.	6A2.1.1 Use commutative, associative, distributive and identity properties to solve problems and to explain algorithms.		
			6A2.1.2 Use order of operations including parentheses to simplify numerical expressions. (no exponents)		
			6A3.1.1 Demonstrate proficiency with basic facts.		
3.	6A3.1	Compute accurately and fluently	6A3.1.2 Demonstrate proficiency with the four basic operations on whole numbers, decimals, fractions, or mixed numbers for straight computation and for word problems.		
			6A3.1.3 Compute the sum or difference for two integers.		
			6A3.1.4 Use ratio and proportion to solve problems including unit rates, unit prices, and determining the “best buy.”		
			6A3.1.5 Calculate the percentage of a quantity and solve problems involving discounts, sales tax, and tips.		
	6A3.2	Apply estimation strategies.	6A3.2.1 Recognize when estimation alone is an appropriate method for solving a problem and determine the degree of precision suited to the problem.		
			6A3.2.2 Use estimation to determine whether computational results are reasonable or to predict the answer to a problem.		
6A3.2.3 Make appropriate estimates relating to size, quantity, temperature, capacity, or the passage of time.					

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Anchor		Number	Sixth Grade Expectations	Every sixth grader should be able to:	Text pages or supplementary materials	Date assessed
6B. Measurement						
1.	Demonstrate an understanding of measurable attributes of objects and figures, and the units, systems, and processes of measurement.	6B1.1	Demonstrate an understanding of measurable attributes of objects and figures.	6B1.1.1 Compare, convert, and estimate units of measure for length, time, weight (mass), capacity and volume within the same measurement system.		
				6B1.1.2 Determine elapsed time to the minute.		
		6B1.2	Solve problems using simple conversions.	6B1.2.1 Solve problems using simple conversions (ounces, pounds; Inches, feet, yards; cups, pints, quarts, gallons.) Convert from one unit to another within the same system.		
2.	Apply appropriate techniques, tools, and formulas to determine measurements.	6B2.1	Choose or use appropriate tools and/or units to determine measurements within the same measurement system.	6B2.1.1 Use a ruler to measure length to the nearest 1/16-inch or the nearest millimeter.		
				6B2.1.2 Choose appropriate tools and units to measure length, perimeter, area, volume, angle measure, capacity, weight, time, and temperature to an appropriate level of precision.		
		6B2.2	Use measurements to solve problems.	6B2.2.1asure using metric, customary, and invented measurement systems to solve problems.		
		6B2.3	Develop and use formulas to determine measurements.	6B2.3.1 Develop and use formulas and procedures for determining measurements in problem solving.		
				6B2.3.2 Find the perimeter of any polygon. Find the perimeter of regular polygons when the measure of one side is provided.		
				6B2.3.3 Find the area of a square, rectangle, or triangle using the provided formula.		
				6B2.3.4 Find the volume of a cube or a rectangular prism using the provided formula.		

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<b>6A. Geometry</b>					
1.		6C.1.1	Analyze the properties of two- dimensional figures and classify them according to their properties.	6C1.1.1 Identify, describe, and label points, lines, rays, line segments, vertices, angles (acute, right, obtuse, straight) and planes using correct symbolic notation.	
				6C1.1.2 Classify triangles by sides; by angle measure.	
				6C1.1.3 Classify quadrilaterals according to their geometric properties.	
				6C1.1.4 Determine the total number of degrees in a circle, triangle, and quadrilateral; Determine the size of an unknown angle in a triangle or quadrilateral when the other angles are given.	
				6C1.1.5 Identify and describe similar and congruent polygons and identify their corresponding parts.	
				6C1.1.6 Identify, describe, and create formulas for the relationships for the parts of a circle – radius, diameter, and circumference.	
				6C1.1.7 Identify, describe and label perpendicular, parallel and intersecting lines.	
2.		6C.2.1	Identify and/or apply concepts of transformations or symmetry.	6C.2.1.1 Perform transformations (flips, slides, turns) on geometric figures to demonstrate concepts of similarity, congruence, and symmetry.	
3.		6C.3.1	Identify points or match points to an ordered pair.	6C.3.1.1 Locate points or match points to an ordered pair of positive numbers on Quadrant I of the coordinate plane.	

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6D. Algebraic Concepts						
1.	Demonstrate an understanding of patterns, relations, and functions.	6D.1.1	Create, analyze or extend patterns.	6D.1.1.1 Recognize, extend, analyze, and create a wide variety of patterns for whole numbers and geometric shapes.		
				6D.1.1.2 Use and create tables to extend a pattern and produce a rule.		
				6D.1.1.3 Identify the rule for a pattern or illustrate a pattern based on a given rule displayed on an input/output table, chart, or graph.		
2.	Represent and /or analyze mathematical situations using numbers, symbols, words, tables, and/or graphs.	6D.2.1	Describe and represent mathematical relationships using variables, expressions, equations, tables, graphs, and rules.	6D.2.1.1 Explain the concept of variable, expression, and equation.		
				6D.2.1.2 Solve one-step linear equations using the inverse operation – whole numbers only.		
				6D.2.1.3 Match an expression or equation involving one variable to a simple word problem.		
				6D.2.1.4 Translate a word problem into an open sentence with one unknown and solve it using concrete, informal, and formal methods.		
3.	Analyze change in various contexts.	6C.3.1	Interpret relationships between variables in a graph.	6D.3.1.1 Match a graphic representation of a situation to a written description.		
				6D.3.1.2 Explain the relationship of the data on a horizontal axis to the data on the vertical axis on a line graph.		

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6E. Data Analysis and Probability						
1.	Formulate or answer questions that can be addressed with data and collect, organize, display, interpret or analyze data.	6E.1.1	Use data to make predictions or find answers to questions.	6E.1.1.1 Analyze data and/or answer questions based on data represented by frequency tables, histograms, bar or double bar graphs, line or double line graphs, circle graphs, or line plots.		
				6E.1.1.2 Judge the validity of conclusions based on data analysis.		
2.	Select and/or use appropriate statistical methods to analyze data.	6E.2.1	Describe data sets using mean, median, mode, and/or range.	6E.2.1.1 Identify and calculate mean, median, mode, and range for a given set of data.		
				6E.2.1.2 Systematically collect, organize, and interpret data to determine the answer to a question.		
				6E.2.1.3 Choose an appropriate representation for a specific set of data.		
3.	Understand and/or apply basic concepts of probability or outcomes.	6E.3.1	Determine all possible combinations, outcomes, and/or calculate the probability of a simple event.	6E.3.1.1 Show all possible combinations involving no more than 20 total possible outcomes by applying the counting principle, or constructing a tree diagram or probability table.		
				6E.3.1.2 Determine experimental probability by devising and carrying out probability experiments and simulations.		
				6E.3.1.3 Find the probability of a simple event expressed as a fraction in lowest terms.		