Anchor	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.	a. Demonstrate number sense for fractions, mixed numbers, decimals, percents, and integers.	1. Convert between fractions and decimals and differentiate between a terminating and a repeating decimal.		
		2. Compare and/or order whole numbers, mixed numbers, fractions, or decimals through thousandths. (Do not mix fractions and decimals).		
		3. Compare and/or order integers (no more than a set of 5 numbers).		
		4. Understand the absolute value of rational number as its distance from 0 on the number line.		
		5. Write and evaluate numerical expressions involving whole-number exponents with fluency with the powers of 10. ($1000 = 10 \times 10 \times 10 = 10^3$).		
		6. Use commutative, associative, distributive and identity properties to solve problems and to explain algorithms.		
		7. Use order of operations including parentheses to simplify numerical expressions. (no exponents)		
		8. Demonstrate proficiency with the four basic operations on whole numbers, decimals, fractions, or mixed numbers for straight computation and for word problems.		
		9. Compute the sum or difference for two integers.		
		10. Recognize when estimation alone is an appropriate method for solving a problem and determine the degree of precision suited to the problem.		
		11. Use estimation to determine whether computational results are reasonable or to predict the answer to a problem.		
		12. Read, write, and represent fractions, mixed numbers, decimals, and integers using symbols, words, and models (including finding the approximate location on a number line.)		
	b. Apply number theory concepts (i.e. factors, multiples)	1. Find the Greatest Common Factor for two numbers and use the GCF to reduce a fraction to its lowest terms.		
		2. Find the Least Common Multiple for two numbers and use the LCM to find the lowest common denominator for 2 fractions.		
		3. Use the divisibility rules for 2, 3, 5, 9, and 10 to solve problems.		
		4. Determine prime and composite numbers, and prime factorization to find patterns and to solve problems.		

Anchor	Sixth Grade Expectations	Every sixth grader should be able to:	Text pages or supplementary	Date assessed
6A. Numbers and Operations				
2.. Understand meanings of operations, use operations and understand how they relate to each other.	a. Solve problems using ratios, proportions, percents and/or rates.	1. 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)		
		2. Write ratios to compare quantities		
		3. Use ratio and proportion to solve problems including unit rates, unit prices, and determining the "best buy."		
		4. Develop and use models to represent percents between 0-100% (e.g. circle graph, hundreds blocks).		
		5. Represent common percents as fractions and/or decimals. Common percents are 1%, 10%, 25% 50%, 75%, and 100%.		
		6. Determine the percentage and rate for a given quantity.		
		7. Calculate the percentage of a quantity and solve problems involving discounts, sales tax, and tips.		
		8. Estimate answers to problems involving simple percents.		

Anchor	Sixth Grade Expectations	Every sixth grader should be able to:	Text pages or supplementary	Date assessed
6B - Measurement				
1. Demonstrate an understanding of measurable attributes of objects and figures, and the units, systems, and processes of measurement.	a. Demonstrate an understanding of measurable attributes of objects and figures.	1. Compare, convert, and estimate units of measure for length, time, weight (mass), capacity and volume within the same measurement system.		
	b. Add or subtract measurements.	1. Add and subtract measurements with and without regrouping. in. ,ft. ,yd. – fl. oz., cup, pint, quart, gallon oz., lb., ton sec. min., h., day, yr. metric units from milli – to kilo- for mass, volume and length.		
	c. Solve problems using simple conversions.	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.	a. Choose or use appropriate tools and/or units to determine measurements within the same measurement system.	1. Use a ruler to measure length to the nearest 1/16 inch or the nearest millimeter.		
		2. Choose appropriate tools and units to measure length, perimeter, area, volume, angle measure, capacity, weight, time and temperature to an appropriate level or precision.		
	b. Use measurements to solve problems.	1. Measure using metric, customary, and invented measurement systems to solve problems.		
	c. Develop and use formulas to determine measurements.	1. Develop and use formulas and procedures for determining measurements in problem solving.		

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DIOCESE OF HARRISBURG
MATHEMATICS CURRICULUM – GRADE 6

Anchor	Sixth Grade Expectations	Every sixth grader should be able to:	Text pages or supplementary	Date assessed
6C - Geometry				
1. Analyze Characteristics and properties of two-and three-dimensional geometric shapes and demonstrate understanding of geometric relationships	a. Analyze the properties of two-dimensional figures and classify them according to their properties.	1. Identify, describe, and label points, line (perpendicular, parallel, and intersecting) rays, line segments, vertic3es, angles (acute, right, obtuse, straight) and planes using correct symbolic notation.		
		2. Classify triangles by side and by angle measure.		
		3. Identify and./or describe properties of all types of triangles (scalene, isosceles, equilateral, right obtuse, acute).		
		4. Identify and/or describe properties of all types of quadrilaterals (square, rectangle, parallelogram, trapezoid, rhombus).		
		5. Classify quadrilaterals according to their geometric properties.		
2. Locate points and describe relationships using the coordinate plane.	b. Use, describe, and/or develop procedures to determine measures of perimeter, area, volume, and angles.	1. Find the perimeter of any polygon. Find the perimeter or regular polygons when the measure of one side is provided.		
		2. Find the area of a square, rectangle, parallelogram, trapezoid, or triangle, using the provided formula.		
		3. Find the missing angle measure of a triangle.		
		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.		
		5. Measure the degree of an angle up to 180 degrees using a protractor.		
		6. Find the volume of a cube or rectangular prism using the provided formula		
	c. Locate points and describe relationships using the coordinate plane.	1. Understand the signs of numbers in ordered pairs as indicating locations in quadrants or the coordinate plane.		
		2. Explain the relationship of the data on a horizontal axis to the data on the vertical asix on a line graph.		

Anchor	Sixth Grade Expectations	Every sixth grader should be able to:	Text pages or supplementary	Date assessed
6D – ALGEBRAIC CONCEPTS				
1. Demonstrate an understanding of patterns, relations, and functions.	a. Recognize, reproduce, extend, and/or describe patterns and sequences.	1. Use and create tables to extend a pattern and produce a rule.		
		2. 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	b. Describe and represent mathematical relationships using variables, expressions, equations, tables, graphs and rules.	1. Explain the concept of variable, expression, and equation. Estimate answers to problems involving simple percents.		
		2. Solve one-step linear equations using the inverse operation – whole numbers only		
		3. Match an expression or equation involving one variable to a simple word problem.		
		4. Translate a word problem into an open sentence with one unknown and solve it using concrete, informal, and formal methods.		

Anchor	Sixth Grade Expectations	Every sixth grader should be able to:	Text pages or supplementary	Date assessed
6E - Data Analysis and Probability				
1. Formulate an answer questions that can be addressed with data and collect, organize, display, interpret or analyze data.	a. Use data to make predictions or find answers to questions.	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.		
		2. Judge the validity of conclusions based on data analysis.		
2. Select and/or use appropriate statistical methods to analyze data.	b. Describe data sets using mean, median, mode, and/or range.	1. Identify and calculate mean, median, mode, and range for a given set of data.		
		2. Systematically collect, organize, and interpret data to determine the answer to a question.		
		3. Choose an appropriate representation for a specific set of data.		
3. Understand and/or apply basic concepts of probability or outcomes.	c. Determine all possible combinations, outcomes, and/or calculate the probability of a simple event.	1. Determine experimental probability by devising and carrying out probability experiments and simulations.		
		2. Find the probability of a simple event expressed as a fraction in lowest terms.		