

## Mathematics: Essential Learning Expectations:

### Fifth Grade:

**Content Standard 1: Number Sense and Operation – A student, applying reasoning and problem solving, will use number sense and operations to represent numbers in multiple ways, understand relationships among numbers and number systems, make reasonable estimates, and compute fluently within a variety of relevant cultural contexts, including those of Montana American Indians.**

Content Standard	Essential Learning Expectations	Vocabulary	
1.1 Whole Number Relationships:	A. Compare and order fractions using area, set, and linear models. B. Compare and order decimals using area and linear models.	unit fraction, equivalent	
1.2 Estimation and Operations:	A. Use multiple strategies to estimate operations on whole numbers. B. Explain whether or not a solution is reasonable based on the context.	remainder	
1.3 Whole Number Concepts:	A. Determine and explain common factors and common multiples.	common factors, common multiples	
1.4 Common Fractions and Decimals	A. Use models, place value, properties, and the relationship of division to multiplication to represent multi-digit division. B. Divide multi-digit whole numbers, by 1	improper fraction, mixed number, decimal, decimal point, hundredths, thousandths	

	<p>digit and 2 digit divisors fluently including invented strategies or standard algorithms.</p> <p>C. Use models, place value or properties to represent addition and subtraction of fractions and decimals.</p> <p>D. Add and subtract fractions fluently with like and unlike denominators including contextual situations.</p> <p>E. Add and subtract decimals fluently to the thousandths including contextual situations.</p>	<p>dividend, divisor, divisible, common denominator, simplify, lowest terms</p>	
1.5 Length, Time, and Temperature:	<p>A. Estimate, measure and label length, capacity, and mass in relevant scientific and cultural situations, including those of Montana American Indians.</p>	<p>cup, pint, quart, half-gallon, gallon, mass, meter, centimeter, millimeter, liter, milliliter, gram, kilogram, foot, yard, measure</p>	
<p><b>Content Standard 2: Data Analysis Mathematics – A student, applying reasoning and problem solving, will use data representation and analysis, simulations, probability, statistics, and statistical methods to evaluate information and make informed decisions within a variety of relevant cultural contexts, including those of Montana American Indians.</b></p>			
2.1 Representing Data:	<p>A. Collect, organize, and represent data using a double bar graph.</p> <p>B. Organize and represent data using a line graph and ordered pairs in the first quadrant on a coordinate grid with the appropriate scale.</p>	<p>double bar graph, coordinate grid, ordered pairs, x-axis, y-axis, origin, scatter plot, scale, interval</p>	

<b>2.2 Evaluating Data:</b>	<b>A. Analyze double bar graphs and line graphs to solve problems within daily life, scientific, and cultural contexts including thome of Montana American Indians.</b>	<b>range, survey, experiment</b>	
<b>2.3 Likelihood of Events:</b>	<b>A. Determine the experimental and theoretical probabilty of a simple situation. (e. g., probability of rolling a three on one roll of a six-sided die.)</b>	<b>theoretical probability, experimental probability, event, outcome</b>	
<b>Content Standard 3: Geometric Reasoning – A student, applying reasoning and problem solving, will understand geometric properties, spatial relationships, and transformation of shapes, and will use spatial reasoning and geometric models to analyze mathematical situations within a variety of relevant and cultural contexts, including those of Montana American Indians.</b>			
<b>3.1 Two-Dimensional Attributes</b>	<b>A. Describe, compare, and classify two-dimensional shapes, including regular and irregular polygons. B. Describe polyhedrons by the number of edges, faces, and/or vertices as well as the types of faces. C. Unfold a rectangular prism to a net and compose a net into a rectangular prism.</b>	<b>height, base, circle, circumference, diameter, radius, heptagon, nonagon, decagon, dodecagon, net, scalene, isosceles, equilateral, vertices, vertex, edges, face, prism pyramid, polyhedron</b>	
<b>3.2 Three-Dimensional Attributes</b>	<b>A. Model and determine if a two-dimensional figure has rotational symmetry.</b>	<b>rotational symmetry</b>	

<p><b>3.3 Basic Transformations:</b></p>	<p><b>ELE for this Benchmark addressed in Grade 7</b></p>		
<p><b>3.4 Linear Measurement:</b></p>	<p><b>A. Describe angle as a measure of rotation.</b>  <b>B. Estimate, measure, identify, and draw angles using the appropriate tools.</b>  <b>C. Use models to find the surface area of rectangular prisms and label with appropriate units.</b>  <b>D. Make a logical argument for volume being the number of unit cubes required to fill a solid without gaps or overlaps.</b>  <b>E. Select appropriate units, strategies and tools for solving problems that involve estimating or measuring volume of rectangular prisms.</b></p>	<p><b>surface area, volume, cubic units (cm<sup>3</sup>, in.<sup>3</sup>), degree, protractor, right, acute, obtuse, straight angle</b></p>	
<p><b>3.5 Area and Perimeter:</b></p>	<p><b>A. Develop and justify a formula for the area of a parallelogram and triangle.</b>  <b>B. Determine and justify the areas of complex shapes made from rectangles, parallelograms, and triangles.</b>  <b>C. Use models to determine and</b></p>	<p><b>justify, formula</b></p>	

	justify a formula for the volume of a rectangular prism. D. Determine and justify the formula for the perimeter of a rectangle.		
<b>Content Standard 4:Algebraic and Functional Reasoning – A student, applying reasoning and problem solving, will use algebraic concepts and procedures to understand processes involving number, operation, and variables and will use procedures and function concepts to model the quantitative and functional relationships that describe change within a variety of relevant cultural contexts, including those of Montana American Indians.</b>			
<b>4.1 Patterns and Relations:</b>	<b>A. Use patterns, models, and relationships to write simple equations and expressions.</b>	<b>rule</b>	
<b>4.2 Symbols and Expressions</b>	<b>ELE for this Benchmark addressed in Grade 6</b>		
<b>4.3 Properties of Number and Operation</b>	<b>A. Model, estimate, and solve one-step equations and verify the solution.</b>		
<b>4.4 Equivalent Expressions:</b>	<b>ELE for this Benchmark addressed in Grade 6</b>		
<b>4.5 Numerical Modeling with Manipulatives:</b>	<b>ELE for this Benchmark addressed in Grade 7</b>		