

## Mathematics: Essential Learning Expectations:

### Third 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	
<b>1.1 Whole Number Relationships:</b>	<b>A. Represent, read, compare and order whole numbers to 10,000</b>	<b>greater than (&gt;), less than (&lt;), standard form</b>	
<b>1.2 Estimation and Operations:</b>	<b>A. Select and apply appropriate methods for estimating sums and differences. B. Compute and solve addition and subtraction problems procedurally and contextually and check reasonableness of answer. C. Use an appropriate method to make change up to \$1.</b>	<b>round, reasonable</b>	
<b>1.3 Whole Number Concepts:</b>	<b>A. Describe and use multiple representations for multiplication. B. Use objects and number lines to show the partitive and measurement methods of division. C. Use manipulatives to solve contextual</b>	<b>grid, array, equal groups, multiplication, multiply, times, factor, product, quotient, divide, division</b>	

	<b>multiplication and division problems.</b>		
<b>1.4 Common Fractions and Decimals</b>	<b>A. Represent fractions using an area model, and/or parts of a set model and locate points on a number line model. B. Compare and order common fractions (i.e., tenths, fourths, thirds and halves) using models and strategies. C. Use models to represent equivalent fractions.</b>	<b>numerator, denominator, equivalent fraction, tenths, thirds, model, set</b>	
<b>1.5 Length, Time, and Temperature:</b>	<b>A. Identify time to the nearest half and quarter hour on an analog clock.</b>	<b>minute, analog clock, digital clock</b>	
<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>			
<b>2.1 Representing Data:</b>	<b>A. Organize and represent data into frequency tables and dot plots (line plots).</b>	<b>frequency table, dot (line) plot, data</b>	
<b>2.2 Evaluating Data:</b>	<b>A. Use mode and the median in an odd numbered data set to solve problems and make decisions pertaining to daily life, science, and culture; including that of Montana American Indians.</b>	<b>mode, median</b>	
<b>2.3 Likelihood of Events:</b>	<b>A. Perform simple probability experiments to describe events from multicultural contexts, including those of Montana American</b>	<b>likely, unlikely, certain, equally likely, impossible</b>	

	Indians, as certain, equally likely, or impossible to occur.		
<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 analyze attributes of two-dimensional shapes, including sides and angles. B. Build, draw, and analyze two-dimensional shapes to solve problems.</b>	<b>angle, right, obtuse, acute, equilateral, quadrilateral, rhombus, parallelogram, pentagon, hexagon, octagon, parallel, intersecting</b>	
<b>3.2 Three-Dimensional Attributes</b>	<b>A. Describe attributes of three-dimensional solids (e.g., number of faces, shapes of faces). B. Identify two-dimensional shapes within three-dimensional solids.</b>		
<b>3.3 Basic Transformations:</b>	<b>A. Determine if two-dimensional figures are congruent using manipulatives or visual methods. B. Explore the effects of a flip and slide on various shapes. C. Identify lines of reflectional symmetry in two-dimensional figures.</b>		
<b>3.4 Linear Measurement:</b>	<b>A. Describe the inverse relationship between the size of a</b>	<b>congruent, lines of reflectional symmetry, flip, slide</b>	

	<p>unit and the number of units needed to measure a given object.</p> <p><b>B. Estimate and measure length of objects using centimeters and inches.</b></p> <p><b>C. Select appropriate measurement tool and compare lengths to solve problems.</b></p>		
<b>3.5 Area and Perimeter:</b>	<p><b>A. Define and determine perimeter of common polygons using concrete tools (e.g., grid paper, objects, or technology) and justify the strategy used.</b></p>	perimeter	
<p><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></p>			
<b>4.1 Patterns and Relations:</b>	<p><b>A. Create and analyze simple numeric and geometric patterns and relationships involving multiplication and division.</b></p> <p><b>C. Compare and contrast similarities and differences between growing patterns.</b></p>	skip counting, increase, decrease, patterns, numeric patterns, geometric patterns, growing patterns, repeating patterns	
<b>4.2 Symbols and Expressions</b>	<p><b>A. Use equivalence to determine a missing value in an open sentence.</b></p>	open sentence, equivalent	

<b>4.3 Properties of Number and Operation:</b>	<b>A. Make a logical argument for one as the identity for multiplication. B. Use models to represent and justify the commutative and associative properties of multiplication.</b>		
<b>4.4 Equivalent Expressions:</b>	<b>A. Express equivalency of measures including time, length, and money.</b>	<b>feet (ft.), yard (yd.), meter (m), yard stick, meter stick</b>	
<b>4.5 Numerical Modeling with Manipulatives:</b>	<b>A. Model a problem or situation with multiple representations using words, pictures, or tables, using daily life, scientific and cultural contexts, including those of Montana American Indians.</b>	<b>input, output</b>	