



Develop a Deep and Flexible Conceptual Understanding	Develop Accurate and Appropriate Procedural Fluency	Develop Strategies for Problem Solving	Develop Mathematical Reasoning	Develop a Productive Mathematical Disposition	Develop the Ability to Make Conjectures, Model, and Generalize	Develop the Ability to Communicate
<b>Numbers &amp; Operations (N)</b>						
<b>6.N.1</b> Read, write, and represent rational numbers expressed as integers, fractions, decimals, percents, and ratios; use these representations in real-world and mathematical situations.	<b>6.N.1.1</b> Use manipulatives and models (e.g., number lines) to determine positive and negative numbers and their contexts, identify opposites, and explain the meaning of 0 (zero) in a variety of situations.					
	<b>6.N.1.2</b> Compare and order positive rational numbers, represented in various forms, or integers using the symbols "<", ">", and "=".					
	<b>6.N.1.3</b> Explain that a percent represents parts "out of 100" and ratios "to 100."					
	<b>6.N.1.4</b> Determine equivalencies among fractions, mixed numbers, decimals, and percents.					
<b>6.N.2</b> Read, write, and model whole-number and integer operations to solve problems.	<b>6.N.2.1</b> Estimate solutions for integer addition and subtraction of problems in order to assess the reasonableness of results.					
	<b>6.N.2.2</b> Illustrate addition and subtraction of integers using a variety of representations.					
	<b>6.N.2.3</b> Add and subtract integers in a variety of situations; use efficient and generalizable procedures including but not limited to standard algorithms.					
	<b>6.N.2.4</b> Identify and represent patterns with whole-number exponents and perfect squares. Evaluate powers with whole-number bases and exponents.					
	<b>6.N.2.5</b> Factor whole numbers and express prime and composite numbers as a product of prime factors with exponents.					
	<b>6.N.2.6</b> Determine the greatest common factors and least common multiples. Use common factors and multiples to calculate with fractions, find equivalent fractions, and express the sum of two-digit numbers with a common factor using the distributive property.					
<b>6.N.3</b> Explain and use the concept of ratio and its relationship to other rational numbers and to the multiplication and division of whole numbers. Use ratios to solve problems.	<b>6.N.3.1</b> Identify and use ratios to compare and relate quantities in multiple ways. Recognize that multiplicative comparison and additive comparison are different.					
	<b>6.N.3.2</b> Determine the unit rate for ratios.					
	<b>6.N.3.3</b> Apply the relationship between ratios, equivalent fractions, unit rates, and percents to solve problems in various contexts.					
<b>6.N.4</b> Multiply and divide decimals, fractions, and mixed numbers; solve real-world and mathematical problems with rational numbers.	<b>6.N.4.1</b> Estimate solutions to problems with whole numbers, decimals, fractions, and mixed numbers, and use the estimates to assess the reasonableness of results in the context of the problem.					
	<b>6.N.4.2</b> Illustrate multiplication and division of fractions and decimals to show connections to fractions, whole number multiplication, and inverse relationships.					
	<b>6.N.4.3</b> Multiply and divide fractions and decimals using efficient and generalizable procedures.					
	<b>6.N.4.4</b> Use mathematical modeling to solve and interpret problems including money, measurement, geometry, and data requiring arithmetic with decimals, fractions and mixed numbers.					



**Algebraic Reasoning & Algebra (A)**

<p><b>6.A.1</b> Recognize and represent relationships between varying quantities; translate from one representation to another; use patterns, tables, graphs, and rules to model and solve mathematical problems.</p>	<p><b>6.A.1.1</b> Plot integer- and rational-valued (limited to halves and fourths) ordered-pairs as coordinates in all four quadrants and recognize the reflective relationships among coordinates that differ only by their signs.</p>
	<p><b>6.A.1.2</b> Represent relationships between two varying positive quantities involving no more than two operations with rules, graphs, and tables; translate between any two of these representations.</p>
	<p><b>6.A.1.3</b> Use and evaluate variables in expressions, equations, and inequalities that arise from various contexts, including determining when or if, for a given value of the variable, an equation or inequality involving a variable is true or false.</p>
<p><b>6.A.2</b> Use properties of arithmetic to generate equivalent numerical expressions and evaluate expressions involving positive rational numbers.</p>	<p><b>6.A.2.1</b> Generate equivalent expressions and evaluate expressions involving positive rational numbers by applying the commutative, associative, and distributive properties and order of operations to model and solve mathematical problems.</p>
<p><b>6.A.3</b> Use equations and inequalities to model and solve mathematical problems and use the idea of maintaining equality to solve equations. Interpret solutions in the original context.</p>	<p><b>6.A.3.1</b> Model mathematical situations using expressions, equations and inequalities involving variables and rational numbers.</p>
	<p><b>6.A.3.2</b> Use number sense and properties of operations and equality to model and solve mathematical problems involving equations in the form <math>x + p = q</math> and <math>px = q</math>, where <math>p</math> and <math>q</math> are nonnegative rational numbers. Graph the solution on a number line, interpret the solution in the original context, and assess the reasonableness of the solution.</p>

**Geometry & Measurement (GM)**

<p><b>6.GM.1</b> Use translations, reflections, and rotations to establish congruence and understand symmetry (not on a coordinate plane).</p>	<p><b>6.GM.1.1</b> Predict, describe, and apply translations (slides), reflections (flips), and rotations (turns) to a two-dimensional figure.</p>
	<p><b>6.GM.1.2</b> Recognize that translations, reflections, and rotations preserve congruence and use them to show that two figures are congruent.</p>
	<p><b>6.GM.1.3</b> Identify and describe the line(s) of symmetry in two-dimensional shapes.</p>
<p><b>6.GM.2</b> Use mathematical modeling to calculate the area of squares, parallelograms, and triangles to solve problems.</p>	<p><b>6.GM.2.1</b> Develop and use formulas for the area of squares and parallelograms using a variety of methods including but not limited to the standard algorithms and finding unknown measures.</p>
	<p><b>6.GM.2.2</b> Develop and use formulas to determine the area of triangles and find unknown measures.</p>
	<p><b>6.GM.2.3</b> Find the area of right triangles, other triangles, special quadrilaterals, and polygons that can be decomposed into triangles and other shapes.</p>
<p><b>6.GM.3</b> Understand and use relationships between angles in geometric figures.</p>	<p><b>6.GM.3.1</b> Solve problems using the relationships between the angles (vertical, complementary, and supplementary) formed by intersecting lines.</p>
	<p><b>6.GM.3.2</b> Develop and use the fact that the sum of the interior angles of a triangle is <math>180^\circ</math> to determine missing angle measures in a triangle.</p>
<p><b>6.GM.4</b> Choose appropriate units of measurement and use ratios to convert within measurement systems to model and solve real-world and mathematical problems.</p>	<p><b>6.GM.4.1</b> Estimate weights and capacities using benchmarks in customary and metric measurement systems with appropriate units.</p>
	<p><b>6.GM.4.2</b> Solve problems that require the conversion of lengths within the same measurement systems using appropriate units.</p>



Data & Probability (D)	
<b>6.D.1</b> Interpret and analyze data.	<b>6.D.1.1</b> Interpret the mean, median, and mode for a set of data.
	<b>6.D.1.2</b> Explain and justify which measure of center (mean, median, or mode) would provide the most descriptive information for a given set of data.
<b>6.D.2</b> Use probability to model and solve mathematical problems; represent probabilities using fractions and decimals.	<b>6.D.2.1</b> Represent possible outcomes using a probability continuum from impossible to certain.
	<b>6.D.2.2</b> Determine the sample space for a given experiment and determine which members of the sample space are related to certain events. Sample space may be determined by the use of tree diagrams, tables or pictorial representations.
	<b>6.D.2.3</b> Demonstrate simple experiments in which the probabilities are known and compare the resulting relative frequencies with the known probabilities, recognizing that there may be differences between the two results.