



**General Information**

**Course** 7th Grade Math

**Grade** 7th

**Stakeholders** School staff members, students, families, and community members

**Symbols** ▲ = Preparing | ● = Learning | ★ = Extending

**General Unit Information**

Unit Name	Adding and Subtracting Rational Numbers	Multiplying and Dividing Rational Numbers	Expressions, Equations, and Inequalities	Ratios and Proportions
<b>Pacing</b>	12 Days	17 Days	24 Days	23 Days
<b>Standards</b>	<ul style="list-style-type: none"> <li>● 7.N.1.1 Compare and order rational numbers expressed in various forms using the symbols "&lt;", "&gt;", and "="</li> <li>● 7.N.1.2 Recognize and generate equivalent representations of rational numbers, including equivalent fractions.</li> <li>● 7.N.1.3 Explain the relationship between the absolute value of a rational number and the distance of that number from zero on a number line. Use the symbol for absolute value. Apply the concept of absolute value to model and solve problems.</li> <li>● 7.N.2.5 Model and solve problems using rational numbers involving addition, subtraction, multiplication, division, and positive integer exponents.</li> <li>● 7.N.2.5 Model and solve problems using rational numbers involving addition, subtraction, multiplication, division, and positive integer exponents.</li> </ul>	<ul style="list-style-type: none"> <li>● 7.N.1.1 Compare and order rational numbers expressed in various forms using the symbols "&lt;", "&gt;", and "="</li> <li>● 7.N.1.2 Recognize and generate equivalent representations of rational numbers, including equivalent fractions.</li> <li>● 7.N.2.1 Estimate solutions to multiplication and division of integers in order to assess the reasonableness of results.</li> <li>● 7.N.2.2 Illustrate multiplication and division of integers using a variety of representations</li> <li>● 7.N.2.3 Multiply and divide integers in a variety of situations; use efficient and generalizable procedures, including standard algorithms.</li> </ul>	<ul style="list-style-type: none"> <li>▲● 7.A.3.1 Write and solve problems leading to linear equations with one variable in the form <math>px + q = r</math> and <math>p(x + q) = r</math>, where <math>p</math>, <math>q</math>, and <math>r</math> are rational numbers.</li> <li>● 7.A.3.2 Represent, write, solve, and graph problems leading to linear inequalities with one variable in the form <math>x + p &gt; q</math> and <math>x + p &lt; q</math>, where <math>p</math>, and <math>q</math> are nonnegative rational numbers.</li> <li>● 7.A.4.1 Use properties of operations (associative, commutative, and distributive) to generate equivalent numerical and algebraic expressions containing rational numbers, grouping symbols and whole number exponents.</li> </ul>	<ul style="list-style-type: none"> <li>● 7.N.1.1 Compare and order rational numbers expressed in various forms using the symbols "&lt;", "&gt;", and "="</li> <li>● 7.A.1.1 Identify a relationship between two varying quantities, <math>x</math> and <math>y</math>, as proportional if it can be expressed in the form <math>y/x = k</math> or <math>y = kx</math>; distinguish proportional relationships from non-proportional relationships.</li> <li>● 7.A.1.2 Recognize that the graph of a proportional relationship is a line through the origin and the coordinate <math>(1, r)</math>, where <math>r</math> is the slope and the unit rate (constant of proportionality, <math>k</math>).</li> <li>● 7.A.2.1 Represent proportional relationships with tables, verbal descriptions, symbols, and graphs; translate from one representation to another. Determine and compare the unit rate (constant of proportionality, slope, or rate of change) given any of these representations.</li> <li>● 7.A.2.2 Solve multi-step problems with proportional relationships (e.g., distance-time, percent increase or decrease, discounts, tips, unit pricing, mixtures and concentrations, similar figures, other mathematical situations).</li> </ul>

	● 7.N.2.4 Raise rational numbers (integers, fractions, and decimals) to positive integer exponents.		● 7.A.2.3 Use proportional reasoning to solve problems involving ratios.
	● 7.N.2.5 Model and solve problems using rational numbers involving addition, subtraction, multiplication, division, and positive integer exponents.		● 7.A.2.4 Use proportional reasoning to assess the reasonableness of solutions
	● 7.A.4.1 Use properties of operations (associative, commutative, and distributive) to generate equivalent numerical and algebraic expressions containing rational numbers, grouping symbols and whole number exponents.		● 7.GM.3.1 Solve problems that require the conversion of weights and capacities within the same measurement systems using appropriate units.
	● 7.A.4.2 Evaluate numerical expressions using calculators and other technologies and justify solutions using order of operations and grouping symbols.		● 7.GM.4.1 Describe the properties of similarity, compare geometric figures for similarity, and determine scale factors resulting from dilations
			● 7.GM.4.2 Apply proportions, ratios, and scale factors to solve problems involving scale drawings and to determine side lengths and areas of similar triangles and rectangles.
			● 7.GM.4.3 Graph and describe translations (with directional and algebraic instructions), reflections across the x- and y-axes, and rotations in 90o increments about the origin of figures on a coordinate plane, and determine the coordinates of the vertices of a figure after a transformation.
<b>Percents</b>	<b>Geometry</b>	<b>Transformations</b>	<b>Probability and Statistics</b>
16 Days	15 Days	21 Days	15 Days
● 7.N.1.2 Recognize and generate equivalent representations of rational numbers, including equivalent fractions.	● 7.GM.1.1 Recognize that the surface area of a rectangular prism can be found by finding the area of each component of the net of that figure. Know that rectangular prisms of different dimensions can have the same surface area.	● 7.A.2.2 Solve multi-step problems with proportional relationships (e.g., distance-time, percent increase or decrease, discounts, tips, unit pricing, mixtures and concentrations, similar figures, other mathematical situations).	● 7.D.1.1 Design simple experiments, collect data, and calculate measures of center (mean, median, and mode) and spread (range and interquartile range). Use these quantities to draw conclusions about the data collected and make predictions.

<p>● 7.A.2.2 Solve multi-step problems with proportional relationships (e.g., distance-time, percent increase or decrease, discounts, tips, unit pricing, mixtures and concentrations, similar figures, other mathematical situations).</p>	<p>● 7.GM.1.2 Using a variety of tools and strategies, develop the concept that surface area of a rectangular prism can be found by wrapping the figure with same-sized square units without gaps or overlap. Use appropriate measurements (e.g., cm<sup>2</sup>).</p>	<p>● 7.GM.4.1 Describe the properties of similarity, compare geometric figures for similarity, and determine scale factors resulting from dilations.</p>	<p>● 7.D.1.2 Use reasoning with proportions to display and interpret data in circle graphs (pie charts) and histograms</p>
<p>● 7.D.1.2 Use reasoning with proportions to display and interpret data in circle graphs (pie charts) and histograms.</p>	<p>● 7.GM.1.3 Using a variety of tools and strategies, develop the concept that the volume of rectangular prisms can be found by counting the total number of same-sized unit cubes that fill a shape without gaps or overlaps. Use appropriate measurements (e.g., cm<sup>3</sup>).</p>	<p>● 7.GM.4.2 Apply proportions, ratios, and scale factors to solve problems involving scale drawings and to determine side lengths and areas of similar triangles and rectangles.</p>	<p>● 7.D.1.3 Use technology to create and analyze box plots.</p>
	<p>● 7.GM.2.1 Develop and use the formula to determine the area of a trapezoid.</p>	<p>● 7.GM.4.3 Graph and describe translations (with directional and algebraic instructions), reflections across the x- and y-axes, and rotations in 90° increments about the origin of figures on a coordinate plane, and determine the coordinates of the vertices of <del>figures after a transformation</del></p>	<p>● 7.D.2.1 Determine the theoretical probability of an event using the ratio between the size of the event and the size of the sample space; represent probabilities as percents, fractions and decimals between 0 and 1.</p>
	<p>● 7.GM.2.2 Find the area and perimeter of composite figures.</p>		<p>● 7.D.2.2 Calculate probability as a fraction of sample space or as a fraction of area. Express probabilities as percents, decimals and fractions</p>
	<p>● 7.GM.3.2 Demonstrate an understanding of the proportional relationship between the diameter and circumference of a circle and that the unit rate (constant of proportionality) is pi and can be approximated by rational numbers such as 22/7 and 3.14</p>		<p>● 7.D.2.3 Use proportional reasoning to draw conclusions about and predict relative frequencies of outcomes based on theoretical probabilities</p>
	<p>● 7.GM.3.3 Calculate the circumference and area of circles to solve problems in various contexts, in terms of pi and using approximations for pi.</p>		