

Grade 7	Month	Mathematical Practices	Units/Domains	Essential Questions	Goals-CCLS	Performance Based Assessment
	September/October	<p>MP 1 Make sense of problems and persevere in solving them.</p> <p>MP 2 Reason abstractly and quantitatively.</p> <p>MP 3 Construct viable arguments and critique the reasoning of others.</p> <p>MP 4 Model with Mathematics.</p> <p>MP 5 Use appropriate tools strategically.</p> <p>MP 6 Attend to precision.</p>	<p>Unit 1: Ratios and Proportional Relationships Chapters 1-2</p> <p>33 Days</p>	<p>How can you use mathematics to describe change and model real-world situations?</p> <p>How can you show that two objects are proportional?</p> <p>How can percent help you understand situations involving money?</p>	<p><b>Analyze proportional relationships and use them to solve real-world and mathematical problems.</b></p> <p><b>CCSS.MATH.CONTENT.7.RP.A.1</b> Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units.</p> <p><b>CCSS.MATH.CONTENT.7.RP.A.2</b> Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin.</p> <p><b>CCSS.MATH.CONTENT.7.RP.A.2.B</b> Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.</p> <p><b>CCSS.MATH.CONTENT.7.RP.A.2.C</b> Represent proportional relationships by equations. For example, if total cost <math>t</math> is proportional to the number <math>n</math> of items purchased at a constant price <math>p</math>, the relationship between the total cost and the number of items can be expressed as <math>t = pn</math>.</p> <p><b>CCSS.MATH.CONTENT.7.RP.A.2.D</b> Explain what a point <math>(x, y)</math> on the graph of a proportional relationship means in terms of the situation, with special attention to the points <math>(0, 0)</math> and <math>(1, r)</math> where <math>r</math> is the unit rate.</p> <p><b>CCSS.MATH.CONTENT.7.SP.A.1</b> Use proportional relationships to solve multistep ratio and percent problems. Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error.</p>	<p>Beginning of the Year Baseline Assessment, Fall MOSL, &amp; 1-Ready Fall Diagnostic</p> <p>Problems of the Week</p> <p>Mid-Chapter Checks</p> <p>Chapter Quizzes</p> <p>Final Unit Assessments</p> <p>Performance Task</p> <p>Math Journals</p>
	October/November/December	<p>MP 1 Make sense of problems and persevere in solving them.</p> <p>MP 2 Reason abstractly and quantitatively.</p> <p>MP 3 Construct viable arguments and critique the reasoning of others.</p> <p>MP 4 Model with Mathematics.</p> <p>MP 5 Use appropriate tools strategically.</p> <p>MP 6 Attend to precision.</p> <p>MP 7 Look for and make use of structure.</p> <p>MP 8 Look for and express regularity in repeated reasoning.</p>	<p>Unit 2: The Number System: Integers &amp; Rational Numbers Chapters 3-4</p> <p>33 Days</p>	<p>How can mathematical ideas be represented?</p> <p>What happens when you add, subtract, multiply, and divide integers?</p> <p>What happens when you add, subtract, multiply, and divide fractions?</p>	<p><b>Apply and extend previous understandings of operations with fractions.</b></p> <p><b>CCSS.MATH.CONTENT.7.NS.A.1</b> Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction of a rational number as a real-world context.</p> <p><b>CCSS.MATH.CONTENT.7.NS.A.1.A</b> Describe situations in which opposite quantities combine to make 0. For example, a hydrogen atom has 0 charge because its two constituents are oppositely charged.</p> <p><b>CCSS.MATH.CONTENT.7.NS.A.1.B</b> Understand <math>p + q</math> as the number located a distance <math> q </math> from <math>p</math>, in the positive or negative direction depending on whether <math>q</math> is positive or negative. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts.</p> <p><b>CCSS.MATH.CONTENT.7.NS.A.1.C</b> Understand subtraction of rational numbers as adding the additive inverse, <math>p - q = p + (-q)</math>. Show that the distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real-world contexts.</p> <p><b>CCSS.MATH.CONTENT.7.NS.A.1.D</b> Add, subtract, multiply, and divide rational numbers.</p> <p><b>CCSS.MATH.CONTENT.7.NS.A.2</b> Apply and extend previous understandings of multiplication and division of fractions to multiply and divide rational numbers.</p> <p><b>CCSS.MATH.CONTENT.7.NS.A.2.A</b> Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly, the distributive property. Involves multiplying by <math>\frac{a}{1}</math>, <math>\frac{1}{b}</math>, and <math>\frac{a}{b}</math>.</p> <p><b>CCSS.MATH.CONTENT.7.NS.A.2.B</b> Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If <math>p, q, r</math>, and <math>s</math> are integers, then <math>(p/q) \div (r/s) = (p \cdot s) / (q \cdot r)</math>. Interpret division of rational numbers by multiplying by the reciprocal. Use properties of operations as strategies to multiply and divide rational numbers.</p> <p><b>CCSS.MATH.CONTENT.7.NS.A.2.D</b> Convert a rational number to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats.</p> <p><b>CCSS.MATH.CONTENT.7.NS.A.3</b> Solve real-world and mathematical problems involving the four operations with rational numbers 1</p>	<p>Pre-Assessment</p> <p>Problems of the Week</p> <p>Mid-Chapter Checks</p> <p>Chapter Quizzes</p> <p>Final Unit Assessments</p> <p>Performance Task</p> <p>Math Journals</p>
	January/February	<p>MP 1 Make sense of problems and persevere in solving them.</p> <p>MP 2 Reason abstractly and quantitatively.</p> <p>MP 3 Construct viable arguments and critique the reasoning of others.</p> <p>MP 4 Model with Mathematics.</p> <p>MP 5 Use appropriate tools strategically.</p> <p>MP 7 Look for and make use of structure.</p>	<p>Unit 3: Expressions, Equations, &amp; Inequalities Chapters 5-6</p> <p>29 Days</p>	<p>How can you communicate mathematical ideas effectively?</p> <p>How can you use numbers and symbols to represent mathematical ideas?</p> <p>What does it mean to say two quantities are equal?</p>	<p><b>Apply and extend previous understandings of operations with fractions.</b></p> <p><b>CCSS.MATH.CONTENT.7.EE.A.2</b> Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.</p> <p><b>Use properties of operations to generate equivalent expressions.</b></p> <p><b>CCSS.MATH.CONTENT.7.EE.A.1</b> Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.</p> <p><b>CCSS.MATH.CONTENT.7.EE.A.2</b> Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related. For example, <math>a + 0.05a</math> is 105% of <math>a</math>, so multiplying by 0.95 is the same as "multiply by 1.05".</p> <p><b>CCSS.MATH.CONTENT.7.EE.B.1</b> Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies.</p> <p><b>CCSS.MATH.CONTENT.7.EE.B.4</b> Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.</p> <p><b>CCSS.MATH.CONTENT.7.EE.B.4.A</b> Solve word problems leading to equations of the form <math>px + q = r</math> and <math>p(x + q) = r</math>, where <math>p, q, r</math> are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. For example, the perimeter of a rectangle is 54 cm, its length is <math>l</math> cm.</p> <p><b>CCSS.MATH.CONTENT.7.EE.B.4.B</b> Solve word problems leading to inequalities of the form <math>px + q &gt; r</math> or <math>px + q &lt; r</math>, where <math>p, q, r</math> are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem.</p>	<p>Middle of the Year Baseline Assessment &amp; 1-Ready Fall Diagnostic</p> <p>Pre-Assessment</p> <p>Problems of the Week</p> <p>Mid-Chapter Checks</p> <p>Chapter Quizzes</p> <p>Final Unit Assessments</p> <p>Performance Task</p> <p>Math Journals</p>
	February/March/April	<p>MP 1 Make sense of problems and persevere in solving them.</p> <p>MP 3 Construct viable arguments and critique the reasoning of others.</p> <p>MP 4 Model with Mathematics.</p> <p>MP 5 Use appropriate tools strategically.</p> <p>MP 6 Attend to precision.</p>	<p>Unit 4: Statistics and Probability Chapters 9-10</p> <p>30 Days</p>	<p>Why is learning mathematics important?</p> <p>How can you predict the outcome of future events?</p> <p>How do you know which type of graph to use when displaying data?</p>	<p><b>Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.</b></p> <p><b>CCSS.MATH.CONTENT.7.G.B.6</b> Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.</p> <p><b>Use random sampling to draw inferences about a population.</b></p> <p><b>CCSS.MATH.CONTENT.7.SP.A.1</b> Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences.</p> <p><b>CCSS.MATH.CONTENT.7.SP.A.2</b> Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (of size about 1000) of the cause size to measure the variation in estimates or statistics.</p> <p><b>Draw informal comparative inferences about two populations.</b></p> <p><b>CCSS.MATH.CONTENT.7.SP.B.1</b> Informally assess the degree of visual overlap of two numerical data distributions with similar variables, measuring the difference between the centers by expressing it as a multiple of a measure of variability.</p> <p><b>CCSS.MATH.CONTENT.7.SP.B.4</b> Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations.</p> <p><b>Investigate chance processes and develop, use, and evaluate probability models.</b></p> <p><b>CCSS.MATH.CONTENT.7.SP.C.1</b> Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability near 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event.</p> <p><b>CCSS.MATH.CONTENT.7.SP.C.2</b> Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency once the probability.</p> <p><b>CCSS.MATH.CONTENT.7.SP.C.3</b> Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy.</p> <p><b>CCSS.MATH.CONTENT.7.SP.C.3.A</b> Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events.</p> <p><b>CCSS.MATH.CONTENT.7.SP.C.3.B</b> Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process.</p>	<p>Pre-Assessment</p> <p>Problems of the Week</p> <p>Mid-Chapter Checks</p> <p>Chapter Quizzes</p> <p>Final Unit Assessments</p> <p>Performance Task</p> <p>Math Journals</p>
	April/May/June	<p>MP 1 Make sense of problems and persevere in solving them.</p> <p>MP 2 Reason abstractly and quantitatively.</p> <p>MP 3 Construct viable arguments and critique the reasoning of others.</p> <p>MP 4 Model with Mathematics.</p> <p>MP 5 Use appropriate tools strategically.</p> <p>MP 6 Attend to precision.</p> <p>MP 7 Look for and make use of structure.</p> <p>MP 8 Look for and express regularity in repeated reasoning.</p>	<p>Unit 5: Geometry Chapters 7-8</p> <p>29 Days</p>	<p>How can you use different measurements to solve real-life problems?</p> <p>How does geometry help us describe real-world objects?</p> <p>How do measurements help you describe real-world objects?</p>	<p><b>Draw, construct, and describe geometrical figures and describe the relationships between them.</b></p> <p><b>CCSS.MATH.CONTENT.7.G.A.1</b> Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.</p> <p><b>CCSS.MATH.CONTENT.7.G.A.2</b> Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.</p> <p><b>CCSS.MATH.CONTENT.7.G.A.3</b> Describe the two-dimensional figures that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms and right circular cylinders.</p> <p><b>Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.</b></p> <p><b>CCSS.MATH.CONTENT.7.G.B.4</b> Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.</p> <p><b>CCSS.MATH.CONTENT.7.G.B.5</b> Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle, in a figure.</p> <p><b>CCSS.MATH.CONTENT.7.G.B.6</b> Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, octagons, cubes, and right prisms.</p>	<p>End of the Year Baseline Assessment, Spring MOSL, &amp; 1-Ready Fall Diagnostic</p> <p>Pre-Assessment</p> <p>Problems of the Week</p> <p>Mid-Chapter Checks</p> <p>Chapter Quizzes</p> <p>Final Unit Assessments</p> <p>Performance Task</p> <p>Math Journals</p>

















