

# 7<sup>th</sup> Grade Mathematics

Month	Content	Skills	Assessment	Essential Questions
September	Number Sense & Operations	<ul style="list-style-type: none"> <li>Place rational and irrational number (approximations) on a number line and justify the placement of the numbers.</li> <li>Review of operations with decimals</li> </ul>		
	Units of Measurement	<ul style="list-style-type: none"> <li>Convert capacities and volumes within a given system</li> <li>Convert mass within a given system</li> <li>Determine personal references for customary/metric units of mass</li> <li>Justify the reasonableness of the mass of an object</li> </ul>		
	Number Sense & Operations	<ul style="list-style-type: none"> <li>Distinguish between the various subsets of real numbers (counting/natural numbers, whole numbers, integers, rational numbers, and irrational numbers.)</li> <li>Add, subtract, multiply, and divide integers</li> <li>Simplify expressions using order of operations (with and without exponents)</li> </ul>		

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Month	Content	Skills	Assessment	Essential Questions
<b>October</b>	Statistics & Probability	<ul style="list-style-type: none"> <li>• Calculate the range for a given set of data</li> <li>• Select the appropriate measure of central tendency</li> <li>• Read and interpret data represented graphically</li> </ul>	<b>Common Assessment 1</b>	
	Number Sense & Operations	<ul style="list-style-type: none"> <li>• Develop the laws of exponents for multiplication and division</li> <li>• Determine the prime factorization of a given number and write in exponential form</li> <li>• Find the common factors and greatest common factor of two or more numbers</li> <li>• Determine multiples and least common multiple of two or more numbers</li> <li>• Distinguish between the various subsets of real numbers</li> <li>• Recognize the difference between rational and irrational numbers</li> <li>• Place rational and irrational numbers (approximations) on a number line and justify the placement of the numbers</li> <li>• Write numbers in scientific notation (with positive &amp; negative exponents)</li> <li>• Translate numbers from scientific notation</li> <li>• Compare numbers written in scientific notation</li> </ul>	<b>Common Assessment 2</b>	

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November	Number Sense & Operations	<ul style="list-style-type: none"> <li>Justify the reasonableness of answers using estimation</li> </ul>		
	Algebra	<ul style="list-style-type: none"> <li>Solving one-step equations</li> <li>Solving two-step equations</li> <li>Translate two-step verbal expressions into algebraic expressions</li> <li>Solve one-step inequalities</li> </ul>		
	Geometry	<ul style="list-style-type: none"> <li>Graph the solution set of an inequality on a number line</li> </ul>	<b>Common Assessment 3</b>	
December	Algebra	<ul style="list-style-type: none"> <li>Solve proportions</li> <li>Solve similar shapes using proportions</li> <li>Convert mass within a given system</li> </ul>		
	Measurement	<ul style="list-style-type: none"> <li>Review operations of fractions</li> <li>Determine personal references for customary/metric units of mass</li> <li>Justify the reasonableness of the mass of an object</li> </ul>		

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Month	Content	Skills	Assessment	Essential Questions
		<ul style="list-style-type: none"> <li>• Convert capacities and volumes within a given system</li> <li>• Identify customary and metric units of mass</li> <li>• Determine the tool and technique to measure with an appropriate level of precision: mass</li> </ul>	<b>Common Assessment 4</b>	
January	Geometry	<ul style="list-style-type: none"> <li>• Find a missing angle when given angles of a quadrilateral</li> </ul>		
	Statistics	<ul style="list-style-type: none"> <li>• Display data in a circle graph</li> <li>• Read and interpret data represented graphically</li> </ul>		
	Measurement	<ul style="list-style-type: none"> <li>• Draw central angles in a given circle using a protractor (circle graphs)</li> </ul>		
	Geometry	<ul style="list-style-type: none"> <li>• Find the perimeter and area of parallelograms, triangles, trapezoids, and irregular shapes</li> <li>• Calculate radius, diameter, circumference &amp; area of a circle</li> </ul>	<b>Common Assessment 5</b>	

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	Number Sense & Operations	<ul style="list-style-type: none"><li>• Recognize the difference between rational and irrational numbers</li><li>• Place rational and irrational numbers on a number line</li><li>• Square root and perfect squares</li><li>• Identify the two consecutive whole numbers between which the square root of a non-perfect square whole number less than 225 lies</li></ul>		

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Month	Content	Skills	Assessment	Essential Questions
<b>February</b>	Geometry	<ul style="list-style-type: none"> <li>• Identify the right angle, hypotenuse, and legs of a right triangle</li> <li>• Explore right triangles to develop the Pythagorean Theorem</li> <li>• Determine whether a given triangle is a right triangle by applying the Pythagorean Theorem</li> <li>• Use the Pythagorean Theorem to determine the unknown length of a side of a right triangle</li> </ul>		
	Geometry	<ul style="list-style-type: none"> <li>• Identify the two-dimensional shapes that make up the faces and bases of three-dimensional shapes</li> <li>• Determine the surface area of prisms and cylinders</li> <li>• Calculate the volume of prisms and cylinders, using a given formula and calculator</li> </ul>	<b>Common Assessment 6</b>	

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Month	Content	Skills	Assessment	Essential Questions
February	Statistics and Probability	<ul style="list-style-type: none"> <li>• Identify and collect data using a variety of methods</li> <li>• Read and interpret data represented graphically</li> <li>• Convert raw data into double bar graphs and double line graphs</li> <li>• Determine the validity of sampling methods to predict outcomes</li> <li>• Identify and explain misleading statistics and graphs</li> </ul>		
March		<ul style="list-style-type: none"> <li>• Interpret data to provide the basis for predictions and to establish experimental probabilities</li> <li>• Predict the outcome of an experiment</li> <li>• Design and conduct an experiment to test predictions</li> <li>• Determine the number of possible outcomes for a compound event by using the fundamental counting principle and use this to determine the probabilities of events when the outcomes have equal probability</li> </ul>	<b>Common Assessment 7</b>	

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Month	Content	Skills	Assessment	Essential Questions
March	Algebra	<ul style="list-style-type: none"> <li>• Add and subtract monomials with exponents of one</li> <li>• Identify a polynomial as an algebraic expression containing one or more terms</li> </ul>		
		<ul style="list-style-type: none"> <li>• Solve multi-step equations by combining like terms, using the distributive property, or moving variables to one side of the equation</li> <li>• Draw the graphic representation of a pattern from an equation or from a table of data</li> <li>• Create algebraic patterns using charts/tables, graphs, equations, and expressions</li> <li>• Write an equation to represent a function from a table of values</li> </ul>	<b>Common Assessment 8</b>	
April		<ul style="list-style-type: none"> <li>• Review for state test</li> </ul>	<b>NY State Test</b>	

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Month	Content	Skills	Assessment	Essential Questions
May	Algebra	<ul style="list-style-type: none"> <li>• Write an equation to represent a function from a table of values</li> </ul>		
June	Measurement	<ul style="list-style-type: none"> <li>• Calculate unit price using proportions</li> <li>• Compare unit prices</li> <li>• Calculate distance using a map scale</li> <li>• Convert money between different currencies with the use of an exchange rate table</li> <li>• Determine the sum of the interior angles of a polygon</li> </ul>	<b>Common Assessment 9</b>	
		<ul style="list-style-type: none"> <li>• Review for final exam</li> </ul>	<b>Final Exam</b>	