

# Calendar-Based Curriculum Map: Pre-Algebra

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

	<b>August/September</b>	<b>October</b>	<b>November</b>
<b>Essential Question</b>	<ul style="list-style-type: none"> <li>• How will students understand numbers, ways of representing numbers, relationships among numbers and number systems?</li> <li>• How will students understand meanings of operations and how they relate to one another?</li> <li>• How will students represent and analyze mathematical situations and structures using algebraic symbols?</li> <li>• How will students specify locations and describe spatial relationships using coordinate geometry and other representational systems?</li> </ul>	<ul style="list-style-type: none"> <li>• How will students understand numbers, ways of representing numbers, relationships among numbers and number systems?</li> <li>• How will students understand meanings of operations and how they relate to one another?</li> <li>• How will students understand patterns, relations, and functions?</li> <li>• How will students represent and analyze mathematical situations and structures using algebraic symbols?</li> </ul>	<ul style="list-style-type: none"> <li>• How will students understand numbers, ways of representing numbers, relationships among numbers and number systems?</li> <li>• How will students understand meanings of operations and they relate to one another?</li> <li>• How will students represent and analyze mathematical situations and structures using algebraic symbols?</li> </ul>
<b>Content</b>	<ul style="list-style-type: none"> <li>• Read, write, and compare numbers</li> <li>• Represent and use rational numbers</li> <li>• Compose and decompose numbers</li> </ul>	<ul style="list-style-type: none"> <li>• Represent and use rational numbers</li> <li>• Compose and decompose numbers</li> <li>• Apply properties of operations</li> </ul>	<ul style="list-style-type: none"> <li>• Read, write, and compare numbers</li> <li>• Represent and use rational numbers</li> <li>• Compose and decompose numbers</li> </ul>

	<ul style="list-style-type: none"> <li>• Apply properties of operations</li> <li>• Represent mathematical situations</li> <li>• Describe and use mathematical manipulation</li> <li>• Use coordinate systems</li> </ul>	<ul style="list-style-type: none"> <li>• Create and analyze patterns</li> <li>• Classify objects and representations</li> <li>• Represent mathematical situations</li> <li>• Describe and use mathematical manipulation</li> </ul>	<ul style="list-style-type: none"> <li>• Apply properties of operations</li> <li>• Represent mathematical situations</li> <li>• Describe and use mathematical manipulation</li> </ul>
<b>Skills</b>	<ul style="list-style-type: none"> <li>• NO1A: compare and order all rational numbers including percents, and find their approximate location on a number line</li> <li>• NO1B: Use fractions, decimals, and percents to solve problems</li> <li>• NO1C: Recognize equivalent representations for the same number and generate them by decomposing and composing numbers, including scientific notation</li> <li>• NO2C: Apply properties of operations to all rational numbers including order of operations and inverse operations</li> </ul>	<ul style="list-style-type: none"> <li>• NO1B: Use fractions, decimals, and percents to solve problems</li> <li>• NO1C: Recognize equivalent representations for the same number and generate them by decomposing and composing numbers, including scientific notation</li> <li>• NO2C: Apply properties of operations to all rational numbers including order of operations and inverse operations</li> <li>• AR1B: Generalize patterns represented graphically or numerically with words or symbolic rules, using explicit notation</li> <li>• AR1C: Compare and contrast various forms of representations of patterns</li> </ul>	<ul style="list-style-type: none"> <li>• NO1A: compare and order all rational numbers including percents, and find their approximate location on a number line</li> <li>• NO1B: Use fractions, decimals, and percents to solve problems</li> <li>• NO1C: Recognize equivalent representations for the same number and generate them by decomposing and composing numbers, including scientific notation</li> <li>• NO2C: Apply properties of operations to all rational numbers including order of operations and inverse operations</li> </ul>

	<ul style="list-style-type: none"> <li>• AR2A: Use symbolic algebra to represent and solve problems that involve linear relationships</li> <li>• AR2B: Use properties to generate equivalent forms for simple algebraic expressions that include all rationals</li> <li>• GSR2A: Use coordinate geometry to analyze properties of right triangles and quadrilaterals (including the use of the Pythagorean Theorem)</li> </ul>	<ul style="list-style-type: none"> <li>• AR2A: Use symbolic algebra to represent and solve problems that involve linear relationships</li> <li>• AR2B: Use properties to generate equivalent forms for simple algebraic expressions that include all rationals</li> </ul>	<ul style="list-style-type: none"> <li>• AR2A: Use symbolic algebra to represent and solve problems that involve linear relationships</li> <li>• AR2B: Use properties to generate equivalent forms for simple algebraic expressions that include all rationals</li> </ul>
<b>Assessments</b>	<ul style="list-style-type: none"> <li>• Teacher created materials</li> <li>• Publisher provided materials</li> <li>• Observations</li> <li>• Oral assessments</li> </ul>	<ul style="list-style-type: none"> <li>• Teacher created materials</li> <li>• Publisher provided materials</li> <li>• Observations</li> <li>• Oral assessments</li> </ul>	<ul style="list-style-type: none"> <li>• Teacher created materials</li> <li>• Publisher provided materials</li> <li>• Observations</li> <li>• Oral assessments</li> </ul>
<b>Activities/Resources</b>	<ul style="list-style-type: none"> <li>• McDougal Littell Pre-Algebra Textbook</li> <li>• Mnemonics</li> <li>• Number lines</li> <li>• Coordinate plane pictures</li> </ul>	<ul style="list-style-type: none"> <li>• McDougal Littell Pre-Algebra Textbook</li> <li>• Hands-on equations</li> <li>• Mnemonics</li> <li>• Calculators</li> <li>• Prime number charts</li> <li>• Fraction mats</li> <li>• Recipes</li> </ul>	<ul style="list-style-type: none"> <li>• McDougal Littell Pre-Algebra Textbook</li> <li>• Mnemonics</li> <li>• Scientific Notation activity</li> <li>• Divisibility tests foldable notes</li> <li>• Calculators</li> <li>• Number lines</li> <li>• Fraction mats</li> <li>• Recipes</li> </ul>

# Calendar-Based Curriculum Map: Pre-Algebra

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

	<b>December</b>	<b>January</b>	<b>February</b>
<b>Essential Question</b>	<ul style="list-style-type: none"> <li>• How will students understand numbers, ways of representing numbers, relationships among numbers and number systems?</li> <li>• How will students use mathematical models to represent and understand quantitative relationships?</li> <li>• How will students apply transformations and use symmetry to analyze mathematical situations?</li> <li>• How will students use visualization, spatial reasoning, and geometric modeling to solve problems?</li> </ul>	<ul style="list-style-type: none"> <li>• How will students understand numbers, ways of representing numbers, relationships among numbers and number systems?</li> <li>• How will students understand meanings of operations and they relate to one another?</li> </ul>	<ul style="list-style-type: none"> <li>• How will students understand patterns, relations, and functions?</li> <li>• How will students analyze change in various contexts?</li> <li>• How will students develop and evaluate inferences and predictions that are based on data?</li> </ul>
<b>Content</b>	<ul style="list-style-type: none"> <li>• Read, write, and compare numbers</li> <li>• Represent and use rational numbers</li> <li>• Use mathematical models</li> <li>• Use transformations on functions</li> </ul>	<ul style="list-style-type: none"> <li>• Represent and use rational numbers</li> <li>• Compose and decompose numbers</li> <li>• Apply properties of operations</li> </ul>	<ul style="list-style-type: none"> <li>• Identify and compare functions</li> <li>• Analyze change</li> <li>• Develop and evaluate inferences</li> </ul>

	<ul style="list-style-type: none"> <li>• Draw and use visual models</li> </ul>		
<b>Skills</b>	<ul style="list-style-type: none"> <li>• NO1A: compare and order all rational numbers including percents, and find their approximate location on a number line</li> <li>• NO1B: Use fractions, decimals, and percents to solve problems</li> <li>• AR3A: Model and solve problems using representations such as graphs, tables, and linear equations</li> <li>• GSR3B: Describe the relationship between the scale factor and the area of image using dilation (stretching/shrinking)</li> <li>• GSR4B: Draw or use visual models to represent and solve problems</li> </ul>	<ul style="list-style-type: none"> <li>• NO1B: Use fractions, decimals, and percents to solve problems</li> <li>• NO1C: Recognize equivalent representations for the same number and generate them by decomposing and composing numbers, including scientific notation</li> <li>• NO2C: Apply properties of operations to all rational numbers including order of operations and inverse operations</li> </ul>	<ul style="list-style-type: none"> <li>• AR1D: Identify functions as linear or nonlinear from tables, graphs, or equations</li> <li>• AR4A: Analyze the nature of changes (including slope and intercepts) in quantities in linear relationships</li> <li>• DP3A: Make conjectures about possible relationships between 2 characteristics of a sample on the basis of scatter plots of the data and approximate lines of fit</li> </ul>
<b>Assessments</b>	<ul style="list-style-type: none"> <li>• Teacher created materials</li> <li>• Publisher provided materials</li> <li>• Observations</li> <li>• Oral assessments</li> </ul>	<ul style="list-style-type: none"> <li>• Teacher created materials</li> <li>• Publisher provided materials</li> <li>• Observations</li> <li>• Oral assessments</li> </ul>	<ul style="list-style-type: none"> <li>• Teacher created materials</li> <li>• Publisher provided materials</li> <li>• Observations</li> <li>• Oral assessments</li> </ul>
<b>Activities/Resources</b>	<ul style="list-style-type: none"> <li>• McDougal Littell Pre-Algebra Textbook</li> <li>• Mnemonics</li> <li>• Protractors</li> </ul>	<ul style="list-style-type: none"> <li>• McDougal Littell Pre-Algebra Textbook</li> <li>• Mnemonics</li> <li>• Calculators</li> </ul>	<ul style="list-style-type: none"> <li>• McDougal Littell Pre-Algebra Textbook</li> <li>• Mnemonics</li> <li>• Calculators</li> </ul>

	<ul style="list-style-type: none"><li>• Calculators</li><li>• Maps</li><li>• Floor Plans</li><li>• Rulers</li><li>• Probability activities</li></ul>	<ul style="list-style-type: none"><li>• Shopping activity</li><li>• Base-ten mats</li><li>• Interest activities</li></ul>	<ul style="list-style-type: none"><li>• Pattern and function connection</li><li>• Investigating slope activity</li><li>• Function websites</li></ul>
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# Calendar-Based Curriculum Map: Pre-Algebra

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

	<b>March</b>	<b>April</b>	<b>May</b>
<b>Essential Question</b>	<ul style="list-style-type: none"><li>• How will students understand numbers, ways of representing numbers, relationships among numbers and number systems?</li><li>• How will students understand meanings of operations and how they relate to one another?</li><li>• How will students analyze change in various contexts?</li><li>• How will students analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships?</li><li>• How will students specify locations and describe spatial relationships using coordinate geometry and other representational systems?</li></ul>	<ul style="list-style-type: none"><li>• How will students formulate questions that can be addressed with data and collect, organize, and display relevant data to answer them?</li><li>• How will students select and use appropriate statistical methods to analyze data?</li></ul>	<ul style="list-style-type: none"><li>• How will students apply transformations and use symmetry to analyze mathematical situations?</li></ul>

	<ul style="list-style-type: none"> <li>• How will students apply appropriate techniques, tools, and formulas to determine measurements?</li> </ul>		
<b>Content</b>	<ul style="list-style-type: none"> <li>• Read, write, and compare numbers</li> <li>• Apply properties of operations</li> <li>• Analyze change</li> <li>• Describe and use geometric relationships</li> <li>• Use coordinate systems</li> <li>• Use angle measurement</li> </ul>	<ul style="list-style-type: none"> <li>• Represent and interpret data</li> <li>• Describe and analyze data</li> <li>• Compare data representations</li> </ul>	<ul style="list-style-type: none"> <li>• Use transformations on objects</li> <li>• Use transformations on functions</li> <li>• Use symmetry</li> </ul>
<b>Skills</b>	<ul style="list-style-type: none"> <li>• NO1A: compare and order all rational numbers including percents, and find their approximate location on a number line</li> <li>• NO2C: Apply properties of operations to all rational numbers including order of operations and inverse operations</li> <li>• AR4A: Analyze the nature of changes (including slope and intercepts) in quantities in linear relationships</li> </ul>	<ul style="list-style-type: none"> <li>• DP1C: Select, create, and use appropriate graphical representation of data (including scatter plots) and box plots (box and whiskers)</li> <li>• DP2A: Find, use, and interpret measures of center, outliers and spread, including range and interquartile range</li> <li>• DP2B: Compare different representations of the same data and evaluate how well each representation shows important aspects of the data</li> </ul>	<ul style="list-style-type: none"> <li>• GSR3A: Reposition shapes under formal transformations such as reflection, rotation, and translation</li> <li>• GSR3B: Describe the relationship between the scale factor and the area of the image using a dilation (stretching/shrinking)</li> <li>• GSR3C: Identify the number of rotational symmetries of regular polygons</li> </ul>

	<ul style="list-style-type: none"> <li>• GSR1A: Describe, classify, and generalize relationships between and among types of a) 2-dimensional objects and b) 3-dimensional objects using their defining properties including Pythagorean Theorem</li> <li>• GSR2A: Use coordinate geometry to analyze properties of right triangles and quadrilaterals (including the use of the Pythagorean Theorem)</li> <li>• M2B: Solve problems of angle measure, including those involving triangles and parallel lines cut by a transversal</li> </ul>		
<b>Assessments</b>	<ul style="list-style-type: none"> <li>• Teacher created materials</li> <li>• Publisher provided materials</li> <li>• Observations</li> <li>• Oral assessments</li> </ul>	<ul style="list-style-type: none"> <li>• Teacher created materials</li> <li>• Publisher provided materials</li> <li>• Observations</li> <li>• Oral assessments</li> </ul>	<ul style="list-style-type: none"> <li>• Teacher created materials</li> <li>• Publisher provided materials</li> <li>• Observations</li> <li>• Oral assessments</li> </ul>
<b>Activities/Resources</b>	<ul style="list-style-type: none"> <li>• McDougal Littell Pre-Algebra Textbook</li> <li>• Calculators</li> <li>• Protractors</li> <li>• MAP review and released items</li> </ul>	<ul style="list-style-type: none"> <li>• McDougal Littell Pre-Algebra Textbook</li> <li>• Calculators</li> <li>• Mean, Median, and Mode project</li> <li>• Centers of data notes/worksheet</li> </ul>	<ul style="list-style-type: none"> <li>• McDougal Littell Pre-Algebra Textbook</li> <li>• Calculators</li> <li>• Protractors</li> <li>• Triangle deconstruction activity</li> <li>• Tessellations</li> </ul>

		<ul style="list-style-type: none"><li>Centers of data activities: Three Blind Mice Song and Measures of Center Cadence</li></ul>	
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