

Calendar-Based Curriculum Map: Math

8th Grade

	August/September	October	November
Essential Question	<ul style="list-style-type: none">• How will students understand numbers, ways of representing numbers, relationships among numbers and number systems?• How will students understand meanings of operations and how they relate to one another?• How will students represent and analyze mathematical situations and structures using algebraic symbols?• How will students use mathematical models to represent and understand quantitative relationships?• How will students analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships?	<ul style="list-style-type: none">• How will students understand numbers, ways of representing numbers, relationships among numbers and number systems?• How will students understand meanings of operations and how they relate to one another?• How will students understand patterns, relations, and functions?• How will students represent and analyze mathematical situations and structures using algebraic symbols?• How will students use visualization, spatial reasoning, and geometric modeling to solve problems?	<ul style="list-style-type: none">• How will students understand numbers, ways of representing numbers, relationships among numbers and number systems?• How will students understand meanings of operations and how they relate to one another?• How will students select and use appropriate statistical methods to analyze data?

	<ul style="list-style-type: none"> • How will students formulate questions that can be addressed with data and collect, organize, and display relevant data to answer them? 		
Content	<ul style="list-style-type: none"> • Read, write, and compare numbers • Compose and decompose numbers • Apply properties of operations • Represent mathematical situations • Describe and use mathematical manipulation • Use mathematical models • Use coordinate systems • Represent and interpret data 	<ul style="list-style-type: none"> • Read, write, and compare numbers • Represent and use rational numbers • Compose and decompose numbers • Apply properties of operations • Create and analyze patterns • Classify objects and representations • Represent mathematical situations • Describe and use mathematical manipulation • Draw and use visual models 	<ul style="list-style-type: none"> • Read, write, and compare numbers • Represent and use rational numbers • Compose and decompose numbers • Apply properties of operations • Describe and analyze data • Compare data representations
Skills	<ul style="list-style-type: none"> • NO1A: Compare and order all rational numbers including percents, and find their approximate location on a number line 	<ul style="list-style-type: none"> • NO1A: compare and order all rational numbers including percents, and find their approximate location on a number line • NO1B: Use fractions, decimals, and percents to solve problems 	<ul style="list-style-type: none"> • NO1A: compare and order all rational numbers including percents, and find their approximate location on a number line • NO1B: Use fractions, decimals, and percents to solve problems

	<ul style="list-style-type: none"> • NO1C: Recognize equivalent representations for the same number and generate them by decomposing and composing numbers, including scientific notation • NO2C: Apply properties of operations to all rational numbers including order of operations and inverse operations • AR2A: Use symbolic algebra to represent and solve problems that involve linear relationships • AR2B: Use properties to generate equivalent forms for simple algebraic expressions that include all rationals • AR3A: Model and solve problems using multiple representations such as graphs • GSR2A: Use coordinate geometry to analyze properties of right triangles and quadrilaterals (including the use of the Pythagorean Theorem) 	<ul style="list-style-type: none"> • NO1C: Recognize equivalent representations for the same number and generate them by decomposing and composing numbers, including scientific notation • NO2C: Apply properties of operations to all rational numbers including order of operations and inverse operations • AR1B: Generalize patterns represented graphically or numerically with words or symbolic rules, using explicit notation • AR1C: Compare and contrast various forms of representations of patterns • AR2A: Use symbolic algebra to represent and solve problems that involve linear relationships • AR2B: Use properties to generate equivalent forms for simple algebraic expressions that include all rationals 	<ul style="list-style-type: none"> • NO1C: Recognize equivalent representations for the same number and generate them by decomposing and composing numbers, including scientific notation • NO2C: Apply properties of operations to all rational numbers including order of operations and inverse operations • DP2A: Find, use, and interpret measures of center, outliers and spread, including range and interquartile range • DP2B: Compare different representations of the same data and evaluate how well each representation shows important aspects of the data
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	<ul style="list-style-type: none"> • DP1C: Select, create, and use appropriate graphical representation of data (including scatter plots) and box plots (box and whiskers) 	<ul style="list-style-type: none"> • GSR4B: Draw or use visual models to represent and solve problems 	
Assessments	<ul style="list-style-type: none"> • Teacher created materials • Publisher provided materials • Observations • Oral assessments 	<ul style="list-style-type: none"> • Teacher created materials • Publisher provided materials • Observations • Oral assessments 	<ul style="list-style-type: none"> • Teacher created materials • Publisher provided materials • Observations • Oral assessments
Activities/Resources	<ul style="list-style-type: none"> • McDougal Littell Course 3 Textbook • Mnemonics • Catering order for 20 people • Number lines • Coordinate plane pictures 	<ul style="list-style-type: none"> • McDougal Littell Course 3 Textbook • Hands on equations • 3X3 integer square • Area of triangle modeling • Recipes • Planet Pinball • Fraction mats 	<ul style="list-style-type: none"> • McDougal Littell Course 3 Textbook • Fraction mats • Scientific notation foldable notes • Fraction models • Recipes • Mean, Median, and Mode project • Centers of data notes/worksheet • Centers of data activities: Three Blind Mice Song and Measures of Center Cadence

Calendar-Based Curriculum Map: Math

8th Grade

	December	January	February
Essential Question	<ul style="list-style-type: none"> • How will students understand meanings of operations and how they relate to one another? • How will students represent and analyze mathematical situations and structures using algebraic symbols? 	<ul style="list-style-type: none"> • How will students understand numbers, ways of representing numbers, relationships among numbers and number systems? • How will students understand meanings of operations and how they relate to one another? 	<ul style="list-style-type: none"> • How will students apply transformations and use symmetry to analyze mathematical situations? • How will students apply appropriate techniques, tools, and formulas to determine measurements?
Content	<ul style="list-style-type: none"> • Apply properties of operations • Represent mathematical situations • Describe and use mathematical manipulation 	<ul style="list-style-type: none"> • Read, write, and compare numbers • Represent and use rational numbers • Compose and decompose numbers • Apply properties of operations 	<ul style="list-style-type: none"> • Use transformations on objects • Use transformations on functions • Use symmetry • Use angle measurement
Skills	<ul style="list-style-type: none"> • NO2C: Apply properties of operations to all rational numbers including order of operations and inverse operations 	<ul style="list-style-type: none"> • NO1A: compare and order all rational numbers including percents, and find their approximate location on a number line • NO1B: Use fractions, decimals, and percents to solve problems 	<ul style="list-style-type: none"> • GSR3A: Reposition shapes under formal transformations such as reflection, rotation, and translation

	<ul style="list-style-type: none"> • AR2A: Use symbolic algebra to represent and solve problems that involve linear relationships • AR2B: Use properties to generate equivalent forms for simple algebraic expressions that include all rationals 	<ul style="list-style-type: none"> • NO1C: Recognize equivalent representations for the same number and generate them by decomposing and composing numbers, including scientific notation • NO2C: Apply properties of operations to all rational numbers including order of operations and inverse operations 	<ul style="list-style-type: none"> • GSR3B: Describe the relationship between the scale factor and the area of the image using a dilation (stretching/shrinking) • GSR3C: Identify the number of rotational symmetries of regular polygons • M2B: Solve problems of angle measure, including those involving triangles and parallel lines cut by a transversal
Assessments	<ul style="list-style-type: none"> • Teacher created materials • Publisher provided materials • Observations • Oral assessments 	<ul style="list-style-type: none"> • Teacher created materials • Publisher provided materials • Observations • Oral assessments 	<ul style="list-style-type: none"> • Teacher created materials • Publisher provided materials • Observations • Oral assessments
Activities/Resources	<ul style="list-style-type: none"> • McDougal Littell Course 3 Textbook • Treasure Hunt Board Game • Hands on Equations • Calculators • Diameter and Circumference Investigation 	<ul style="list-style-type: none"> • McDougal Littell Course 3 Textbook • Side lengths and perimeters activity • Scale drawings • Restaurant bills • Shopping activity 	<ul style="list-style-type: none"> • McDougal Littell Course 3 Textbook • Coordinate Plane Battleship • Protractors • Triangle deconstruction activity • Tessellations • Snowflake symmetry

Calendar-Based Curriculum Map: Math

8th Grade

	March	April	May
Essential Question	<ul style="list-style-type: none"> • How will students analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships? • How will students specify locations and describe spatial relationships using coordinate geometry and other representational systems? • How will students apply appropriate techniques, tools, and formulas to determine measurements? 	<ul style="list-style-type: none"> • How will students analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships? • How will students use visualization, spatial reasoning, and geometric modeling to solve problems? 	<ul style="list-style-type: none"> • How will students understand patterns, relations, and functions? • How will students analyze change in various contexts? • How will students formulate questions than can be addressed with data and collect, organize, and display relevant data to answer them? • How will students develop and evaluate inferences and predictions that are based on data?
Content	<ul style="list-style-type: none"> • Describe and use geometric relationships • Use coordinate systems • Use angle measurement • Analyze precision 	<ul style="list-style-type: none"> • Describe and use geometric relationships • Recognize and draw three-dimensional representations 	<ul style="list-style-type: none"> • Identify and compare functions • Analyze change • Represent and interpret data • Develop and evaluate inferences

<p>Skills</p>	<ul style="list-style-type: none"> • 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 • GSR2A: Use coordinate geometry to analyze properties of right triangles and quadrilaterals (including the use of the Pythagorean Theorem) • M2B: Solve problems of angle measure, including those involving triangles and parallel lines cut by a transversal • M2D: Analyze precision and accuracy in measurement situations and determine number of significant digits 	<ul style="list-style-type: none"> • 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 • GSR4A: Create isometric drawings from a given mat plan 	<ul style="list-style-type: none"> • AR1D: Identify functions as linear or nonlinear from tables, graphs, or equations • AR4A: Analyze the nature of changes (including slope and intercepts) in quantities in linear relationships • DP1C: Select, create, and use appropriate graphical representation of data (including scatter plots) and box plots (box and whiskers) • 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
<p>Assessments</p>	<ul style="list-style-type: none"> • Teacher created materials • Publisher provided materials • Observations • Oral assessments 	<ul style="list-style-type: none"> • Teacher created materials • Publisher provided materials • Observations • Oral assessments 	<ul style="list-style-type: none"> • Teacher created materials • Publisher provided materials • Observations • Oral assessments

<p>Activities/Resources</p>	<ul style="list-style-type: none"> • McDougal Littell Course 3 Textbook • Side length and square activity • Calculators • Modeling the Pythagorean Theorem Activity • Sohcahtoa mnemonic • MAP review and released items 	<ul style="list-style-type: none"> • McDougal Littell Course 3 Textbook • Mathematics in Context Textbook • Measure Match • Geometric solids • Packages activity • Sketching solids activity • Exploring volume activity 	<ul style="list-style-type: none"> • McDougal Littell Course 3 Textbook • Graphing calculators • Pattern and function connection
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