

Calendar-Based Curriculum Map: Math

7th 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 each other?• How will students compute fluently and make reasonable estimates?• 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 mathematical models to represent and understand quantitative 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 patterns, relations, and functions?• How will students formulate questions that can be addressed with data and collect, organize, and display relevant data to answer them?• How will students select and use appropriate statistical methods to analyze data?• How will students develop and evaluate inferences and predictions that are based on data?	<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 compute fluently and make reasonable estimates?• How will students understand measurable attributes of objects and the units, systems, and processes of measurement?• How will students apply appropriate techniques, tools, and formulas to determine measurements?

	<ul style="list-style-type: none"> • How will students understand measurable attributes of objects and the units, systems, and processes of measurement? 		
Content	<ul style="list-style-type: none"> • Read, write, and compare numbers • Compose and decompose numbers • Describe effects of operations • Apply properties of operations • Compute problems • Estimate and justify solutions • Create and analyze patterns • Classify objects and representations • Represent mathematical situations • Use mathematical models • Identify equivalent measures 	<ul style="list-style-type: none"> • Represent and use rational numbers • Compose and decompose numbers • Classify objects and representations • Represent and interpret data • Describe and analyze data • Develop and evaluate inferences 	<ul style="list-style-type: none"> • Read, write, and compare numbers • Represent and use rational numbers • Describe effects of operations • Compute problems • Estimate and justify solutions • Determine unit of measurement • Use relationships within a measurement system
Skills	<ul style="list-style-type: none"> • NO1A: Compare and order all positive rational numbers and find their approximate location on a number line 	<ul style="list-style-type: none"> • NO1B: Recognize and generate equivalent forms of fractions, decimals, and percents 	<ul style="list-style-type: none"> • NO1A: Compare and order all positive rational numbers and find their approximate location on a number line

	<ul style="list-style-type: none"> • NO1C: Recognize equivalent representations for the same number and generate them by decomposing and composing numbers, including exponential notation • NO2B: Describe the effects of all operations on rational numbers including integers • NO2C: Apply properties of operations (including order of operations) to positive rational numbers and integers. • NO3C: Apply all operations on rational numbers including integers • NO3D: Estimate and justify the results of all operations on rational numbers • AR1B: Analyze patterns represented graphically and numerically with words and symbolic rules • AR1C: Compare and contrast various forms of representations of patterns 	<ul style="list-style-type: none"> • NO1C: Recognize equivalent representations for the same number and generate them by decomposing and composing numbers, including exponential notation • AR1C: Compare and contrast various forms of representations of patterns • DP1C: Select, create, and use appropriate graphical representation of data including histograms • DP2A: Find, use, and interpret measures of center and spread, including ranges • DP3A: Use observations about differences between samples to make conjectures about the populations from which the samples were taken 	<ul style="list-style-type: none"> • NO1B: Recognize and generate equivalent forms of fractions, decimals, and percents • NO2B: Describe the effects of all operations on rational numbers including integers • NO3C: Apply all operations on rational numbers including integers • NO3D: Estimate and justify the results of all operations on rational numbers • M1A: Identify and justify the unit of measure for volume (customary and metric) • M2E: Convert from one unit to another within a system of measurement (capacity) and convert square or cubic units within the same system of measurement
--	---	---	--

	<ul style="list-style-type: none"> • AR2A: Use symbolic algebra to represent unknown quantities in expressions or equations and solve linear equations with one variable • AR3A: Model and solve problems using multiple representations such as graphs, tables, expressions, and linear equations • M1B: Identify equivalent measures within a system of measurement 		
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 2 Textbook • Base-ten pieces and place value mat • Checkbook registrar • Rulers 	<ul style="list-style-type: none"> • McDougal Littell Course 2 Textbook • Class bar graph • Centers of data notes/worksheet • Centers of data activities: Three Blind Mice Song and Measures of Center Cadence • Student conducted surveys 	<ul style="list-style-type: none"> • McDougal Littell Course 2 Textbook • Fraction pieces • Rulers • Measuring cups • Converting recipes

		<ul style="list-style-type: none">• Converting recipes• Fraction mats• Finding prime numbers activity	
--	--	---	--

Calendar-Based Curriculum Map: Math

7th Grade

	December	January	February
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 compute fluently and make reasonable estimates? • How will students specify locations and describe spatial relationships using coordinate geometry and other representational systems? • How will students understand measurable attributes of objects and the units, system, and processes of measurement 	<ul style="list-style-type: none"> • 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 compute fluently and make reasonable estimates? • How will students analyze change in various contexts?
Content	<ul style="list-style-type: none"> • Read, write, and compare numbers 	<ul style="list-style-type: none"> • Describe the effects of operations 	<ul style="list-style-type: none"> • Estimate and justify solutions

	<ul style="list-style-type: none"> • Describe effects of operations • Apply properties of operations • Compute problems • Use coordinate systems • Tell and use units of time 	<ul style="list-style-type: none"> • Apply properties of operations • Identify and compare functions • Represent mathematical situations • Describe and use mathematical manipulation • Draw and use visual models 	<ul style="list-style-type: none"> • Use proportional reasoning • Analyze change
Skills	<ul style="list-style-type: none"> • NO1A: Compare and order all positive rational numbers and find their approximate location on a number line • NO2B: Describe the effects of all operations on rational numbers including integers • NO2C: Apply properties of operations (including order of operations) to positive rational numbers and integers • NO3C: Apply all operations on rational numbers including integers • GSR2A: Use coordinate geometry to construct and identify geometric shapes in the coordinate plane using their properties 	<ul style="list-style-type: none"> • NO2B: Describe the effects of all operations on rational numbers including integers • NO2C: Apply properties of operations (including order of operations) to positive rational numbers and integers • AR1D: Identify functions as linear or nonlinear from tables, graphs, or equations • AR2A: Use symbolic algebra to represent unknown quantities in expressions or equations and solve linear equations with one variable 	<ul style="list-style-type: none"> • NO3D: Estimate and justify the results of all operations on rational numbers • NO3E: Solving problems involving proportions, such as scaling and finding equivalent ratios • AR4A: Compare situations with constant or varying rates of change

	<ul style="list-style-type: none"> • MIC: Solve problems involving addition and subtraction of time (hours, minutes, and seconds) 	<ul style="list-style-type: none"> • AR2B: Use properties to generate equivalent forms for simple algebraic expressions that include positive rationals and integers • 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 2 Textbook • Number lines • Coordinate grid activities • Coordinate Plane Battleship 	<ul style="list-style-type: none"> • McDougal Littell Course 2 Textbook • Translating operational phrases matching activity • Simplifying expressions: Mix-Pair-Share activity • Hands-on Equations • Graphing calculators • Online function websites • Pattern and function cards 	<ul style="list-style-type: none"> • McDougal Littell Course 2 Textbook • Fraction Action Board Game • Graphing calculators • Modeling proportions activity • Floor plans • Maps

Calendar-Based Curriculum Map: Math

7th Grade

	March	April	May
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 compute fluently and make reasonable estimates? • How will students apply appropriate techniques, tools, and formulas to determine measurements? • How will students formulate questions that can be addressed with data and collect, organize, and display relevant data to answer them? 	<ul style="list-style-type: none"> • How will students understand and apply basic concepts of probability? • How will students compute fluently and make reasonable estimates? • How will students analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships? • How will students apply transformations and use symmetry to analyze mathematics situations? • How will students apply appropriate techniques, tools, and formulas to determine measurements? 	<ul style="list-style-type: none"> • How will students understand meanings of operations and how they relate to one another? • 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? • How will students apply appropriate techniques, tools, and formulas to determine measurements?
Content	<ul style="list-style-type: none"> • Represent and use rational numbers 	<ul style="list-style-type: none"> • Apply basic concepts of probability 	<ul style="list-style-type: none"> • Apply operations on real and complex numbers

	<ul style="list-style-type: none"> • Describe effects of operations • Compute problems • Use angle measurement • Represent and interpret data 	<ul style="list-style-type: none"> • Use proportional reasoning • Apply geometric relationships • Use transformations on functions • Use symmetry • Use angle measurement 	<ul style="list-style-type: none"> • Describe and use geometric relationships • Recognize and draw three-dimensional representations • Apply geometric relationships
Skills	<ul style="list-style-type: none"> • NO1B: Recognize and generate equivalent forms of fractions, decimals, and percents • NO2B: Describe the effects of all operations on rational numbers including integers • NO3C: Apply all operations on rational numbers including integers • M2B: Use tools to measure angles to the nearest degree and classify the angle as acute, obtuse, right, straight, or reflex • DP1C: Select, create, and use appropriate graphical representation of data, including circle graphs and histograms 	<ul style="list-style-type: none"> • DP4A: Use models to compute the probability of an event and make conjectures (based on theoretical probability) about the results of experiments • NO3E: Solve problems involving proportions, such as scaling and finding equivalent ratios • GSR1B: Describe relationships between corresponding sides, corresponding angles, and corresponding perimeters of similar polygons • GSR3B: Describe the relationship between the scale factor and the perimeter of the image using a dilation • GSR3C: Determine all lines of symmetry of polygons 	<ul style="list-style-type: none"> • NO2D: Approximate the value of square roots to nearest whole number • GSR1A: Identify the 2-dimensional cross section of a 3-dimensional shape • GSR4A: Use spatial visualizations to identify various 2-dimensional views of isometric drawings • M2C: Solve problems involving circumference and/or area of a circle and surface area/volume of a rectangular or triangular prism, or cylinder

		<ul style="list-style-type: none"> • M2B: Use tools to measure angles to the nearest degree and classify the angle as acute, obtuse, right, straight, or reflex 	
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 2 Textbook • 10 X 10 percent mats • Protractors • Calculators • Percent of change activity with graph paper • Shopping activity • MAP review and released items 	<ul style="list-style-type: none"> • McDougal Littell Course 2 Textbook • Investigating probability activity • Protractors • Angle sum activity • Tessellations • Investigating symmetry activity 	<ul style="list-style-type: none"> • McDougal Littell Course 2 Textbook • Mathematics in Context Textbook • Modeling the Pythagorean Theorem Activity • Geometric solids • Packages activity