

Diocese of Bridgeport
Curriculum Map

Course: Mathematics

Grade Level: 8

	Content	Skills	Suggested Assessments	Connecticut Content Standards
	The Number System	<ul style="list-style-type: none"> • Know the properties of numbers. • Understand integers and interpret them on the number line. • Evaluate expressions using integers. • Graph ordered pairs of numbers. • Understand operations with exponents. • Use negative integers with exponents. • Be able to graph decimals on the number line. • Perform all operations with decimals including rounding. 	<ul style="list-style-type: none"> • Use number line to understand rational numbers. • Graph ordered pairs of numbers in all four quadrants. • Evaluate expressions with exponents and integers. 	<ul style="list-style-type: none"> • Between any two rational numbers, another rational number can always be found. • Number lines and grids can be used to compare and order integers, powers and roots. • Multiplication, division and power properties of exponents can simplify calculations with expressions and scientific notation.
	Algebraic Expressions	<ul style="list-style-type: none"> • Understand the use of variables. • Understand and use operations with variables. • Simplify and evaluate expressions with variables. • Translate word phrases into algebraic language. • Use variables in equations. • Solve simple equations and inequalities. • Use formulas. 	<ul style="list-style-type: none"> • Translate and simplify an equation into algebraic language. • Solve simple equations and inequalities. • Utilize formulas in solving equations. 	<ul style="list-style-type: none"> • Between any two rational numbers, another rational number can always be found. • Number lines and grids can be used to compare and order integers, powers and roots. • Indirect measures of volume for some solids can be found through the use of formulas. • Algebraic methods (tables, graphs and equations) can be used to solve real-world problems.

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	Rational Numbers	<ul style="list-style-type: none"> • Understand equivalent fractions. • Find the least common denominator. • Perform operations with positive and negative fractions and mixed numbers. • Identify rational and irrational numbers. • Convert between fraction and decimal – including repeating decimals. 	<ul style="list-style-type: none"> • Perform operations with rational numbers. • Convert fractions into terminating and non-terminating decimals. • Convert decimals into fractions. • Solve one-step equations using rational numbers. 	<ul style="list-style-type: none"> • Between any two rational numbers, another rational number can always be found. • The equivalence of fractions, decimals, ratios and percents can be used to solve problems.
	Ratio, Proportion, and Percent	<ul style="list-style-type: none"> • Simplify rates and ratios. • Be able to solve proportions. • Solve proportion problems. • Convert and understand the relationship between percentage, fraction, and decimal. • Perform computations using percent. • Calculate percent increase and decrease. • Solve problem with percent. • Evaluate discounts, markups, commission, profits, and simple interest. • Solving equations with percentage. 	<ul style="list-style-type: none"> • Use real world problems to apply ratio, proportion and percent. • Perform computations using percent, ratio, and proportion. 	<ul style="list-style-type: none"> • Between any two rational numbers, another rational number can always be found. • The equivalence of fractions, decimals, ratios and percents can be used to solve problems. • Exponential growth and decay models are based on repeatedly multiplying by the same factor. • Algebraic methods (tables, graphs and equations) can be used to solve real-world problems.

	Content	Skills	Suggested Assessments	Connecticut Content Standards
	Equation and Inequalities	<ul style="list-style-type: none"> • Solve linear equations by inverse operation. • Solving a linear equation with two steps. • Solve a linear equation with multiple steps. • Solving equation with variables on both sides. • Solve inequalities by inverse operations. • Graph solution to inequalities on the number line. • Use equations to solve word problem. 	<ul style="list-style-type: none"> • Solve simple and multi-step equations and inequalities. • Solve and graph simple and multi-step equations and inequalities using inverse operations. • Solve real world problems by using equations and inequalities. 	<ul style="list-style-type: none"> • Algebraic methods (tables, graphs, data) can be used to solve real-world problems. • A relation is a mapping from one set of values to another, and a function is a relation in which there is only one value of the dependent variable that corresponds to each value of the independent variable. • Given one representation or function, other representations can be derived.
	The Coordinate Plane	<ul style="list-style-type: none"> • Understand the use and parts of the Cartesian coordinate system. • Use a table to find the solution of an equation in two variables. • Graph linear equations by solutions. • Identify a relation and a function. • Compute slope and y-intercepts. • Graph a linear equation using slopes and intercepts. • Solve a system of linear equations by graphing. 	<ul style="list-style-type: none"> • Graph ordered pairs of numbers in all four quadrants. • Graph solutions of linear equations by using slope and intercept, a table of values, x and y intercept. 	<ul style="list-style-type: none"> • Algebraic methods (tables, graphs, data) can be used to solve real-world problems. • A relation is a mapping from one set of values to another, and a function is a relation in which there is only one value of the dependent variable that corresponds to each value of the independent variable. • Given one representation or function, other representations can be derived. • A common solution to two linear equations is shown graphically by the intersection of their lines.

	Content	Skills	Suggested Assessments	Connecticut Content Standards
	<p>Geometry</p>	<ul style="list-style-type: none"> • Understand parallel lines and angle relationships. • Identify geometric figures. • Find the area of plane geometric figure such as rectangle, triangle, and circles. • Use the Pythagorean Theorem to find the sides of a right triangle. • Find the volumes of solid figures. • Compute the surface area of solid figures. 	<ul style="list-style-type: none"> • Find area of plane geometric figures. • Find volume of solid figures • Use the Pythagorean Theorem to find the sides of a right triangle. • Compute the surface area of solid figures. • Identify geometric figures. • Demonstrate an understanding of parallel lines and angle relationships. 	<ul style="list-style-type: none"> • Relationships exist among sides, angles, perimeters, areas, surface areas and volumes of congruent and similar polygons and solids. • Indirect measures of volume for some solids can be found through the use of formulas. Direct measure of the volume of irregular solid objects can be accomplished through the use of displacement. • The Pythagorean Theorem can be used to find an unknown length. • Geometric constructions can model relationships.
	<p>Probability and Statistics</p>	<ul style="list-style-type: none"> • Find the probability of an event using different methods. • Understand the concept of mean, median, and mode. • Compute mean, median, and mode. • Construct bar and line graphs. • Interpret graphs. 	<ul style="list-style-type: none"> • Use measures of central tendency in real world applications. 	<ul style="list-style-type: none"> • Graphic models such as a line or a curve can be used as predictive tools even though they may not exactly fit real data situations. • Data sets can be compared using box-and-whisker plots which show range, median and quartile information. • The choice of the sample and its size can affect statistical claims. • Tree diagrams and networks illustrate that counting principles are multiplicative.