



8th Grade Math Scope & Sequence

Grading Period	Unit Title	Learning Targets
Throughout the School Year		<ul style="list-style-type: none"> *Apply mathematics to problems in everyday life *Use a problem-solving model that incorporates analyzing information, formulating a plan, determining a solution, justifying the solution and evaluating the reasonableness of the solution *Select tools to solve problems *Communicate mathematical ideas, reasoning and their implications using multiple representations *Create and use representations to organize, record and communicate mathematical ideas *Analyze mathematical relationships to connect and communicate mathematical ideas *Display, explain and justify mathematical ideas and arguments
First Grading Period	Real Numbers	<ul style="list-style-type: none"> *Using visual representation to describe relationships between sets of real numbers *Approximate the value of an irrational number, and locate on a number line *Convert between standard decimal notation and scientific notation *Order a set of real numbers arising from mathematical and real- world contexts *Write one-variable equations and inequalities and real world problem to correspond with equation
	Equations and Inequalities	
Second Grading Period	Similarity & Dilations	<ul style="list-style-type: none"> *Using ratios and algebraic representation of similar shapes to determine proportionality of dilations on a coordinate plane *compare and contrast similar shape attributes *Graph proportional relationships, interpreting the unit rate as the slope of the line that models the relationship

	Proportionality Relationships	<ul style="list-style-type: none"> *represent linear proportional situations with tables, graphs, and equations in the form of $y = kx$ *Use data from a table or graph to determine the rate of change or slope and y-intercept in mathematical and real-world problems
	Linear Equations and Functions	<ul style="list-style-type: none"> *Write an equation in the form $y = mx + b$ to model a linear relationship between two quantities using verbal, numerical, tabular, and graphical representations *Solve problems involving direct variation □ distinguish between proportional and non-proportional situations using tables, graphs, and equations in the form $y=kx$ or $y=mx+b$, where $b \neq 0$ *Use informal arguments to establish facts about the angle sum and exterior angle of triangles, the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles *Proportional and non-proportional functions that arise from mathematical and real-world problems * Determine the rate of change or slope and y-intercept from table or graph
Third Grading Period	Pythagorean Theorem	<ul style="list-style-type: none"> *Identify and verify the values of x and y that simultaneously satisfy two linear equations in the form $y = mx + b$ from the intersections of the graphed equations *Generalize the properties of orientation and differentiate between congruence of transformations on a coordinate plane □ □ *Solve problems involving the volume of cylinder and describe it's formula
	Geometry	<ul style="list-style-type: none"> *Use previous knowledge of surface area to make connections to the formulas for lateral and total surface area and determine solutions for problems involving rectangular prisms, triangular prisms, and cylinders *model the effect of measurement with dilation
	Transformations	<ul style="list-style-type: none"> *Use models and diagrams to explain the Pythagorean theorem □ determine the distance between two points on a coordinate plane using the Pythagorean theorem *Use the Pythagorean theorem and its converse to solve problems
	Measurement/Data	<ul style="list-style-type: none"> *Construct a scatterplot and describe the observed data to address questions of association such as linear, non-linear, and no association between bivariate data *Determine the mean absolute deviation using a data set of no more than 10 data points *Contrast bivariate sets of data that suggest a linear relationship with bivariate sets of data that do not suggest a linear relationship from a graphical representation *Use a trend line that approximates the linear relationship between bivariate sets of data to make predictions *Solve real-world problems comparing how interest rate (simple and compound) and loan length affect the cost of credit

	Personal Financial Literacy	*Explain how small amounts of money invested regularly grows over time
Fourth Grading Period	Personal Financial Literacy	<ul style="list-style-type: none"> *Simulate generating random samples of same size *Calculate the total cost of repay a loan *Identify and explain the advantages and disadvantages of different payment methods *Analyze situations to determine if they represent financially responsible decisions and identify the benefits of financial responsibility and the costs of financial irresponsibility