

8th Grade- Math 4 Quarter Plans

Quarter 1- August, September, Mid-October

Focus Areas: Irrational numbers, integer exponents, scientific notation, and linear equations

8.NS.A.1	I know that numbers that are not rational are called irrational and I understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually, and convert a decimal expansion which repeats eventually into a rational number.	Resources Used: <ul style="list-style-type: none">-SMARTBoard-Chromebooks-MyMath online curriculum-MyMath student workbooks
8.NS.A.2	I can use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions (e.g., π^2).	
8.EE.A.1	I know and apply the properties of integer exponents to generate equivalent numerical expressions.	Summary: In Q1, students will be able to differentiate between rational and irrational numbers, compare irrational numbers and locate them on a number line. Students will utilize exponents, calculate the square and cube root, and calculate operations expressed in scientific notation. Students will also be able to solve linear equations.
8.EE.A.2	I can use square root and cube root symbols to represent solutions to equations of the form $x^2 = p$ and $x^3 = p$, where p is a positive rational number, evaluate square roots of small perfect squares and cube roots of small perfect cube, and know that $\sqrt{2}$ is irrational.	
8.EE.A.3	I can use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other.	
8.EE.A.4	I can perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities (e.g., use millimeters per year for seafloor spreading). Interpret scientific notation that has been generated by technology.	
8.EE.C.7	I can solve linear equations in one variable.	

8th Grade - Math 4 Quarter Plans

Quarter 2- Mid-October, November, December

Focus Areas: Geometry, coordinate planes, angles, proportions, slope

8.G.A.1	I can verify experimentally the properties of rotations, reflections, and translation.	Resources Used: -SMARTBoard -Chromebooks -MyMath online curriculum -MyMath student workbooks
8.G.A.2	I understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that exhibits the congruence between them.	
8.G.A.3	I can describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.	Summary: In Q2, students will dive into learning about rotations, reflections and translations on a coordinate plane. Students will be able to determine if shapes are congruent. Students will be able to determine angles of triangles and graph the slope and slope intercept by interpreting the corresponding equations.
8.G.A.4	I understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations; given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them.	
8.G.A.5	I can use informal arguments to establish facts about the angle sum and exterior angle of triangles, about the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles.	
8.EE.B.5	I can graph proportional relationships, interpreting the unit rate as the slope of the graph and compare two different proportional relationships represented in different ways.	

8.EE.6

I can use similar triangles to explain why the slope m is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation $y = mx$ for a line through the origin and the equation $y = mx + b$ for a line intercepting the vertical axis at b .

8th Grade - Math 4 Quarter Plans

Quarter 3- January, February, Mid-March

Focus Areas: Functions and linear equations

8.F.A.1	I understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output.	Resources Used: <ul style="list-style-type: none">-SMARTBoard-Chromebooks-MyMath online curriculum-MyMath student workbooks
8.F.A.2	I can compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions).	
8.F.A.3	I can interpret the equation $y = mx + b$ as defining a linear function, whose graph is a straight line; give examples of functions that are not linear.	
8.F.B.4	I can construct a function to model a linear relationship between two quantities, determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) values, including reading these from a table or from a graph, and interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.	
8.F.B.5	I can describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear) and sketch a graph that exhibits the qualitative features of a function that has been described verbally.	Summary: In Q3, students will focus on functions. Students will be able to compare two functions even if represented in different ways. Students will be able to construct functions. Students will also be able to solve and analyze linear equations.
8.EE.C.8	I can analyze and solve pairs of simultaneous linear equations.	

8th Grade - Math 4 Quarter Plans

Quarter 4- Mid-March, April, May

Focus Areas: Pythagorean Theorem, volume, scatter plots, data and statistics

8.G.B.6	I can explain a proof of the Pythagorean Theorem and its converse.	Resources Used: -SMARTBoard -Chromebooks -MyMath online curriculum -MyMath student workbooks
8.G.B.7	I can apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions.	
8.G.B.8	I can apply the Pythagorean Theorem to find the distance between two points in a coordinate system.	
8.G.C.9	I can know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems.	Summary: In Q4, students will understand and apply the Pythagorean Theorem in real-world and mathematical problems. Students will also utilize the formulas to calculate the volume of three-dimensional shapes. Students will continue to explore linear equations and data and statistics.
8.SP.A.1	I can construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities and describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association.	
8.SP.A.2	I know that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line.	
8.SP.A.3	I can use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept.	
8.SP.A.4	I understand that patterns of association can also be seen in bivariate categorical data by displaying frequencies and relative frequencies in a two-way table, and I can construct and interpret a two-way table summarizing data on two categorical variables collected from the same	

	subject and use relative frequencies calculated for rows or columns to describe possible association between the two variables.	
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Note: Plans are subject to change due to what the teacher deems as appropriate pacing for the group of students being taught in that current year. Resources are also subject to change due to availability.

***NS=The Number System**

***RP= Ratios & Proportional Relationships**

***EE= Expressions & Equations**

***G= Geometry**

***F= Functions**

***SP= Statistics & Probability**