

School District of Loyal

Math

Grade: 8

Student Learning Targets



Class: Math 8

Students who demonstrate understanding can:

WI State Standard	Standard Description:	Student Learning Targets:
M.8.EE.B.6	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 .	<p>Students will be able to:</p> <ul style="list-style-type: none"> Determine the slope of any line on the coordinate plane Determine the equation for the line on a plane Understand the 4 different types of slope
M.8.EE.C.7	Solve linear equations in one variable. b. Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.	<p>Students will be able to:</p> <ul style="list-style-type: none"> Use the Properties of Equality in order to isolate a variable Use the Distributive Property to simplify expressions and solve equations Combine like terms to simplify an expression and solve equations
M.8.EE.C.8	Analyze and solve pairs of simultaneous linear equations. c. Solve real-world and mathematical problems leading to two linear equations in two variables. For example, given coordinates for two pairs of points, determine whether the line through the first pair of points intersects the line through the second pair.	<p>Students will be able to:</p> <ul style="list-style-type: none"> Graph a system of equations and determine a solution graphically
M.8.F.B.4	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. 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.	<p>Students will be able to:</p> <ul style="list-style-type: none"> Determine the slope from 2 given coordinates Determine slope from an x/y table Find the initial value of the linear function given 2 points or a point and the slope

M.8.G.A.1	<p>Verify experimentally the properties of rotations, reflections, and translations:</p> <p>a. Lines are taken to lines, and line segments to line segments of the same length.</p> <p>b. Angles are taken to angles of the same measure.</p> <p>c. Parallel lines are taken to parallel lines.</p>	<p>Students will be able to:</p> <ul style="list-style-type: none"> ● Apply transformations to their given shape on a coordinate grid ● Determine the missing angles when parallel lines are intersected by a transversal
M.8.G.B.6 M.8.G.B.7 M.8.G.B.8	<p>Justify the relationship between the lengths of the legs and the length of the hypotenuse of a right triangle and the converse of the Pythagorean Theorem.</p> <p>Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions.</p> <p>Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.</p>	<p>Students will be able to:</p> <ul style="list-style-type: none"> ● Use the Pythagorean Theorem to find the missing side of a right triangle ● Use the Pythagorean Theorem to decide if 3 given side lengths form a right triangle ● Use the Pythagorean Theorem to find the length of a diagonal line on a coordinate plane
M.8.NS.A.2 M.8.NS.A.1 M.8.EE.A.2	<p>Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line, and estimate the value of expressions.</p> <p>Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually, and use patterns to rewrite a decimal expansion that repeats into a rational number.</p> <p>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 cubes. Know that $\sqrt{2}$ is irrational.</p>	<ul style="list-style-type: none"> ● Place square root numbers on a number line ● Approximate the value of any non-perfect square to the 10th spot ● Explain the difference between rational and irrational numbers ● Determine if a number is rational and irrational
M.8.EE.A.1 M.8.EE.A.3	<p>Know and apply the properties of integer exponents to generate equivalent numerical expressions.</p> <p>Use numbers expressed in the form of a single digit times an integer power of 10 to</p>	<ul style="list-style-type: none"> ● Apply the properties of exponents to simplify expressions ● Use Scientific Notation to express very large or very small numbers concisely

	estimate very large or very small quantities, and to express how many times as much one is than the other.	
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