

# School District of Loyal

## Algebra 1

### Grade: 9th grade

## Student Learning Targets



### Class: Algebra 1

Students who demonstrate understanding can:

WI State Standards	Standard:	Student Learning Targets:
M.N.RN.A.2	<ul style="list-style-type: none"> <li>Rewrite expressions involving radicals and rational exponents using the properties of exponents.</li> </ul>	<p><b>Students will be able to:</b></p> <ul style="list-style-type: none"> <li>I can simplify expressions involving radicals and rational exponents.</li> <li>I can use properties of exponents to rewrite exponential models.</li> </ul>
M.A.SSE.A.1 M.A.CED.A.4 M.A.CED.A.1	<ul style="list-style-type: none"> <li>Interpret parts of an expression, such as terms, factors, and coefficients.</li> <li>Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations.</li> <li>Create equations and inequalities in one variable and use them to solve problems.</li> </ul>	<p><b>Students will be able to:</b></p> <ul style="list-style-type: none"> <li>I can write an algebraic expression, interpret the parts of the expression, and use the Distributive Property to simplify the expression.</li> <li>I can use the properties of equality and distributive property to solve an equation with variables and both sides.</li> <li>I can solve simple and complex literal equations for a given variable.</li> <li>I can write inequalities to model real life problems, and use properties of inequalities to solve the inequalities.</li> <li>I can write, solve and graph compound inequalities, and use compound inequalities to model real world problems.</li> </ul>
M.A.CED.A.2 M.A.REI.B.3	<ul style="list-style-type: none"> <li>Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.</li> <li>Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.</li> </ul>	<p><b>Students will be able to:</b></p> <ul style="list-style-type: none"> <li>I can describe the graphs of linear functions.</li> <li>I can identify characteristics of functions.</li> <li>I can use linear functions to model real-world scenarios.</li> <li>I can write, graph, and use piecewise functions to solve real-world problems.</li> <li>I can evaluate and graph absolute value functions.</li> </ul>

M.A.REI.D.12	<ul style="list-style-type: none"> <li>Graph the solutions to linear inequality in two variables as half-plane (excluding the boundary in the case of strict inequality) and graph the solution set to a system of linear inequalities in two variables as the intersection of the corresponding half-planes.</li> </ul>	<ul style="list-style-type: none"> <li>I can solve systems by graphing</li> <li>I can solve systems through the elimination method.</li> <li>I can solve systems by adding or subtracting.</li> <li>I can write linear systems to model real-world problems and solve them by multiplying first.</li> <li>I can write and graph linear inequalities in two variables to model and solve real world problems.</li> <li>I can write and graph systems of linear inequalities to model and solve real-world problems.</li> </ul>
M.F.IF.A.1  M.F.IF.A.2  M.F.IF.B.5  M.F.IF.B.6  M.F.IF.C.9	<ul style="list-style-type: none"> <li>Understand that a function from one set, discrete or continuous, (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range.</li> <li>Use function notation, evaluate functions, and interpret statements that use function notation in terms of a context.</li> <li>Relate the domain of a function to its graph and find an appropriate domain (discrete or continuous) in the context of the given problem.</li> <li>Calculate and interpret the average rate of change of a linear or nonlinear function (presented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph.</li> <li>Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions).</li> </ul>	<p><b>Students will be able to:</b></p> <ul style="list-style-type: none"> <li>I can use function notation to determine solutions sets of an equation.</li> <li>I can determine the domain and range of a given linear function.</li> <li>I can connect solutions of equations to points on their graphs.</li> <li>I can numerically describe and interpret the slope of a line.</li> <li>I can identify how functions and relations are related.</li> <li>I can compare functions given in different forms.</li> <li>I can write, graph and analyze exponential growth functions.</li> <li>I can analyze the characteristics of exponential decay functions.</li> <li>I can choose between linear and exponential models for given data sets.</li> </ul>
M.F.BF.A.1  M.F.BF.B.4	<ul style="list-style-type: none"> <li>Write a function that describes a relationship between two quantities.</li> </ul>	<p><b>Students will be able to:</b></p> <ul style="list-style-type: none"> <li>I can write an equation for the inverse of a linear function and inverses of linear functions to solve problems.</li> </ul>

	<ul style="list-style-type: none"> <li>● Identify and create inverse functions, using tables, graphs and symbolic methods to solve for the other variable.</li> </ul>	
<p>M.A.SSE.B.3</p> <p>M.A.APR.B.3</p> <p>M.A.REI.B.4</p>	<ul style="list-style-type: none"> <li>● Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression. <ul style="list-style-type: none"> <li>○ Factor a quadratic expression to reveal the zeros of the function it defines.</li> </ul> </li> <li>● Identify zeros of polynomials when suitable factorizations are available, and use the zeros to construct a rough graph of the function defined by the polynomial.</li> <li>● Solve quadratic equations by inspection, taking square roots, the quadratic formula, factoring and graphing.</li> </ul>	<p><b>Students will be able to:</b></p> <ul style="list-style-type: none"> <li>● I can add, subtract and multiply polynomials.</li> <li>● I can understand the key features of the graph of a quadratic function, and solve quadratic equations approximately by graphing.</li> <li>● I can use the Zero Product Property to solve quadratic equations in standard form when the leading coefficient is 1 or not 1.</li> <li>● I can use special factoring patterns to solve quadratic equations.</li> <li>● I can solve quadratic equations by using square roots and determine whether there are one, two, or no real solutions.</li> <li>● I can solve quadratic equations by completing the square.</li> <li>● I can solve equations using the quadratic formula.</li> </ul>