Algebra 1 - Steve Grosskreutz

Golden Standard	Maroon Standards	What does it look like	How it is assessed
MP.1 Make sense of problems and persevere in solving them.		Students continue to seek strategies to solve problems, make use of available resources	
MP.2 Reason abstractly and quantitatively.		Students are able to generalize from concrete examples to general rules using variables	
MP.3 Construct viable arguments and critique the reasoning of others.		In work groups students share ideas and strategies and arrive at a viable strategy.	
MP.4 Model with mathematics.		Students are able to represent real world functions algebraically and graphically	
MP.5 Use appropriate tools strategically.		Students are able to use calculators, graphs, straight edge, software apps and other media to solve problems.	
MP.6 Attend to precision.		Students verify their solutions by comparison. Students use straight edge or appropriate software when graphing. Students choose an appropriate scale for graphing. Students document each step in the solution on paper	
MP.7 Look for and make use of structure.		Students are able to recognize patterns in tables, graphs and expressions and use them to describe a situation.	
MP.8 Look for and express regularity in repeated reasoning.		Students can recognize patterns and use them to make predictions and to describe the effect of parameters on a parent function.	
Unit 1 A-REI.A.1 Explain each step in solving a simple equation as following from the equality of numbers		Students can clearly document their work step by step	Daily work shows detailed steps in solutions

asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method.			
N-Q.A.2 Define appropriate quantities for the purpose of descriptive modeling.		Students can convert units using dimensional analysis and represent data tabular, graphically and algebraically	
N-Q.A.3 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. ★		Students can determine the appropriate level of accuracy using significant digits.	
A-SSE.A.1a[1] Interpret parts of an expression, such as terms, factors, and coefficients. ★		Students are able to understand vocabulary in order to construct an equation. Students can understand the effects of changing parameters of slope and y-intercept have on the graph of an equation/function	
A-CED.A.1 Create equations and inequalities in one variable and use them to solve problems.		Students are able to translate a verbal sentence into an algebraic equation and solve it	
A-CED.A.3 Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or non-viable options in a modeling context. ★		Students are able to translate a verbal sentence into an algebraic inequality and determine the range of solutions. Students can write an algebraic expression and graph	
A-CED.A.4 Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations.		Students can use algebraic methods to solve for a given variable in a linear equation.	
Unit 2 F-IF.B.4 For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. S		Students can demonstrate changes in a graph as values of parameters are changed.	
F-IF.A.1 Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the		Students can determine if a relation is a function and determine the values of the domain and range. Students can	

range. If f is a function and x is an element of its domain, then f(x) denotes the output of f corresponding to the input x. The graph of f is the graph of the equation y = f(x). S		distinguish between a discrete function and a continuous function.	
F-IF.A.2 Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.		Students can represent models using function notation. Students can construct an equation from an arithmetic sequence.	
F-IF.A.3 Recognize that sequences are functions, sometimes defined recursively, whose domain is a subset of the integers. S		Students can write an explicit and recursive rule to describe a sequence.	
F-BF.A.1a Determine an explicit expression, a recursive process, or steps for calculation from a context. ★		Students can write an explicit and recursive rule to describe a sequence.	
Unit 3 F-LE.A.1c[1] Recognize situations in which a quantity grows or decays by a constant percent rate per unit interval relative to another. ★		Students can recognize and exponential growth or decay graph	
F-IF.C.7a Graph linear and quadratic functions and show intercepts, maxima, and minima. ★		Students can identify these areas on a graph.	
F-IF.B.6 Calculate and interpret the average rate of change of a function (presented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph. ★			
A-CED.A.2 Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales. ★ S			
F-BF.B.3 Identify the effect on the graph of replacing f(x) by f(x) + k, kf(x), f(kx), and f(x + k) for specific values of k (both positive and negative); find the value of k given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. S		Students can draw a graph of the form $ax2 + bx + c$	
F-IF.C.9 Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). S			

Unit 5 A-REI.C.6 Solve systems of linear equations exactly and approximately (e.g., with graphs), focusing on pairs of linear equations in two variables.		Students can find solutions to 2 linear equations using graphs or algebraically.	
A-REI.C.5 Prove that, given a system of two equations in two variables, replacing one equation by the sum of that equation and a multiple of the other produces a system with the same solutions.		Students can solve a system of equations by substitution method	
A-REI.D.12 Graph the solutions to a linear inequality in two variables as a half-plane (excluding the boundary in the case of a strict inequality), and graph the solution set to a system of linear inequalities in two variables as the intersection of the corresponding half-planes. courses.		Students can graph a system of linear inequalities.	
F-IF.C.7b Graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions		Students can graph and interpret a piecewise function.	
A-REI.B.3 Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.		Students can solve a system of linear inequalities. And equations algebraically.	
Unit 6 N-RN.A.1[1] Explain how the definition of the meaning of rational exponents follows from extending the properties of integer exponents to those values, allowing for a notation for radicals in terms of rational exponents.			
N-RN.A.2[1] Rewrite expressions involving radicals and rational exponents using the properties of exponents. SE: 637–646, 647–660 Use properties of rational and irrational numbers			
Unit 7 A-SSE.A.1a[1] Interpret parts of an expression, such as terms, factors, and coefficients.			
A-APR.A.1 Understand that polynomials form a system analogous to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication; add, subtract, and multiply polynomials.			
Unit 8 A-SSE.A.1a[1] Interpret parts of an expression,			

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A-APR.A.1 Understand that polynomials form a system analogous to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication; add, subtract, and multiply polynomials.			
F-IF.C.7a Graph linear and quadratic functions and show intercepts, maxima, and minima.			
A-APR.B.3 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.			
A-REI.B.4b Solve quadratic equations by inspection (e.g., for x2 = 49), taking square roots, completing the square, the quadratic formula, and factoring, as appropriate to the initial form of the equation. Recognize when the quadratic formula gives complex solutions and write them as a ± bi for real numbers a and b.			
Unit 9 A-SSE.B.3 Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.			
A-SSE.B.3a Factor a quadratic expression to reveal the zeros of the function it defines.			
A-SSE.B.3b Complete the square in a quadratic expression to reveal the maximum or minimum value of the function it defines.			
A-REI.B.4a Use the method of completing the square to transform any quadratic equation in x into an equation of the form (x – p) 2 = q that has the same solutions. Derive the quadratic formula from this form.			
A-REI.C.7[1] Solve a simple system consisting of a linear equation and a quadratic equation in two variables algebraically and graphically.			
F-LE.A.1b[1] Recognize situations in which one quantity changes at a constant rate per unit interval relative to			

another			