ALGEBRA 1 CURRICULUM MAP REVISED: JUNE 2019

9 Weeks	Envision Algebra 1	Topic/Lesson	WV College & Career Readiness Standard(s)
1st NINE WEEKS	**Topic 1: Solving Equations and Inequalities** *(Skip Lesson 1 and Lesson 6)*	**Lesson 2:** M.A1HS.5 M.A1HS.9 M.A1HS.10 **Lesson 3:** M.A1HS.2 M.A1HS.5 M.A1HS.9 M.A1HS.10 **Lesson 4:** M.A1HS.1 M.A1HS.5 M.A1HS.8 **Lesson 5:** M.A1HS.5 M.A1HS.7 M.A1HS.9 M.A1HS.10 **Lesson 7:** M.A1HS.5	**M.A1HS.1** Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays. **M.A1HS.2** Define appropriate quantities for the purpose of descriptive modeling. *Instructional Note: Working with quantities and the relationships between them provides grounding for work with expressions, equations, and functions.* **M.A1HS.5** Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear ~~and quadratic~~ functions~~, and simple rational and exponential functions.~~ *Instructional Note: Limit to linear equations and inequalities.* **M.A1HS.7** 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. (e.g., Represent inequalities describing nutritional and cost constraints on combinations of different foods.) *Instructional Note: Limit to linear equations and inequalities.* **M.A1HS.8** Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. (e.g., Rearrange Ohm's law V = IR to highlight resistance R.) *Instructional Note: Limit to formulas with a linear focus.* **M.A1HS.9** Explain each step in solving a simple equation as following from the equality of numbers 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. *Instructional Note: Students should focus on and **master** linear equations and be able to extend and apply their reasoning to other types of equations in future courses. Students will solve exponential equations with logarithms in Algebra II.* **M.A1HS.10** Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters. *Instructional Note: Extend earlier work with solving linear equations to solving linear inequalities in one variable and to solving literal equations that are linear in the variable being solve for.*

ALGEBRA 1 CURRICULUM MAP REVISED: JUNE 2019

9 Weeks	Envision Algebra 1	Topic/Lesson	WV College & Career Readiness Standard(s)
2nd NINE WEEKS	Topic 2: Linear Equations *(Skip Lesson 4)*	**Lesson 1:** M.A1HS.6 M.A1HS.38	**M.A1HS.5** Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear ~~and quadratic~~ functions~~, and simple rational and exponential functions~~. *Instructional Note: Limit to linear equations and inequalities.*
		Lesson 2: M.A1HS.6 M.A1HS.30 M.A1HS.38	**M. A1HS.6** Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales. *Instructional Note: Limit to linear equations.*
		Lesson 3: M.A1HS.6 M.A1HS.7 M.A1HS.38	**M.A1HS.7** 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. (e.g., Represent inequalities describing nutritional and cost constraints on combinations of different foods.) *Instructional Note: Limit to linear equations and inequalities.*
			M.A1HS.8 Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. (e.g., Rearrange Ohm's law V = IR to highlight resistance R.) *Instructional Note: Limit to formulas with a linear focus.*
		The following standards should be addressed throughout Topic 2: M.A1HS.5 M.A1HS.8 M.A1HS.21 M.A1HS.23 M.A1HS.24 M.A1HS.25 M.A1HS.29 M.A1HS.32	**M.A1HS.21** For a function that models a relationship between two quantities, interpret key features of a graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; ~~relative maximums and minimums; symmetries; end behavior; and periodicity~~. *Instructional Note: Focus on linear functions.*
			M.A1HS.23/53 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. *Instructional Note: Focus on linear functions whose domain is a subset of the integers.*

ALGEBRA 1 CURRICULUM MAP REVISED: JUNE 2019

9 Weeks	Envision Algebra 1	Topic/Lesson	WV College & Career Readiness Standard(s)
2nd NINE WEEKS	**Topic 2: Linear Equations (cont'd)** *(Skip Lesson 4)*	**Lesson 1:** M.A1HS.6 M.A1HS.38	**M.A1HS.24** Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases. a. Graph linear ~~and quadratic~~ functions and show intercepts~~, maxima, and minima~~ b. ~~Graph exponential and logarithmic functions, showing intercepts and end behavior and trigonometric functions, showing period, midline, and amplitude.~~
		Lesson 2: M.A1HS.6 M.A1HS.30 M.A1HS.38	**M.A1HS.25** Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). ~~(e.g., Given a graph of one quadratic function and an algebraic expression for another, say which has the larger maximum.)~~ *Instructional Note: Focus on linear functions. Include comparisons of two functions presented algebraically.*
		Lesson 3: M.A1HS.6 M.A1HS.7 M.A1HS.38	**M.A1HS.29** Distinguish between situations that can be modeled with linear functions ~~and with exponential functions.~~ a. Prove that linear functions grow by equal differences over equal intervals; ~~exponential functions grow by equal factors over equal intervals.~~ b. Recognize situations in which one quantity changes at a constant rate per unit interval relative to another. ~~c. Recognize situations in which a quantity grows or decays y a constant percent rate per unit interval relative to another.~~
		The following standards should be addressed throughout Topic 2: M.A1HS.5 M.A1HS.8 M.A1HS.21 M.A1HS.23 M.A1HS.24 M.A1HS.25 M.A1HS.29 M.A1HS.32	**M.A1HS.30** Construct linear ~~and exponential~~ functions~~, including arithmetic and geometric sequences~~, given a graph, a description of a relationship or two input-output pairs (include reading these from a table). *Instructional note: In constructing linear functions, draw on and consolidate previous work in Grade 8 on finding equations for lines and linear functions.* **M.A1HS.32** Interpret the parameters in a linear ~~or exponential~~ function in terms of a context. **M.A1HS.38** Interpret the slope (rate of change) and the intercept (constant term) of a linear model in the context of the data.

ALGEBRA 1 CURRICULUM MAP REVISED: JUNE 2019

9 Weeks	Envision Algebra 1	Topic/Lesson	WV College & Career Readiness Standard(s)
2nd NINE WEEKS	**Topic 3: Linear Functions** *(Skip Lessons 3, 4, 5, and 6)*	**Lesson 1:** M.A1HS.18 **Lesson 2:** M.A1HS.18 M.A1HS.19 M.A1HS.22 M.A1HS.26 M.A1HS.27 M.A1HS.30	**M.A1HS.18** Recognize 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 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). *Instructional Note: Students should experience a variety of types of situations modeled by functions. Detailed analysis of any particular class of function at this stage is not advised. Students should apply these concepts throughout their future mathematics courses. Draw examples form linear functions having integral domains.* **M.A1HS.19** Use function notation, evaluate functions for inputs in their domains and interpret statements that use function notation in terms of a context. *Instructional Note: Students should experience a variety of types of situations modeled by functions. Detailed analysis of any particular class of function at this stage is not advised. Students should apply these concepts throughout their future mathematics courses. Draw examples from linear functions having integral domains.* **M.A1HS.22** Relate the domain of a function to its graph and where applicable, to the quantitative relationship it describes. (e.g., If the function h(n) gives the number of person-hours it takes to assemble n engines in a factory, then the positive integers would be an appropriate domain for the function.) *Instructional Note: Focus on linear functions.* **M.A1HS.26** Write a function that describes a relationship between two quantities. a~~. Determine an explicit expression, a recursive process, or steps for calculation from a context.~~ b. Combine standard function types using arithmetic operations. ~~(e.g., Build a function that models the temperature of a cooling body by adding a constant function to a decaying exponential, and relate these functions to the model.)~~ *Instructional Note: Limit to linear functions.* **M.A1HS.27** Write arithmetic ~~and geometric~~ sequences ~~both recursively and with an explicit formula, use them to model situations, and translate between the two forms.~~ *Instructional Note: Arithmetic sequences can be utilized when writing linear equations from a table of data points.* **M.A1HS.30** Construct linear and ~~exponential~~ functions~~, including arithmetic and geometric sequences~~, given a graph, a description of a relationship or two input-output pairs (include reading these from a table). *Instructional note: In constructing linear functions, draw on and consolidate previous work in Grade 8 on finding equations for lines and linear functions.*

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3rd NINE WEEKS	Topic 4: Systems of Linear Equations and Inequalities	**Lesson 1:** M.A1HS.14 **Lesson 2:** M.A1HS.7 M.A1HS.10 M.A1HS.14 **Lesson 3:** M.A1HS.7 M.A1HS.13 **Lesson 4:** M.A1HS.6 M.A1HS.7 M.A1HS.17 **Lesson 5:** M.A1HS.7 M.A1HS.17	**M.A1HS.6** Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales. *Instructional Note: Limit to linear equations.* **M.A1HS.7** 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. (e.g., Represent inequalities describing nutritional and cost constraints on combinations of different foods.) *Instructional Note: Limit to linear equations and inequalities.* **M.A1HS.10** Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters. *Instructional Note: Extend earlier work with solving linear equations to solving linear inequalities in one variable and to solving literal equations that are linear in the variable being solve for.* M.**A1HS.13** 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. **M.A1HS.14** Solve systems of linear equations exactly and approximately (e.g., with graphs), focusing on pairs of linear equations in two variables. *Instructional Note: Build on student experiences graphing and solving systems of linear equations from middle school to focus on justification of the methods used. Include cases where the two equations describe the same line (yielding infinitely many solutions) and cases where two equations describe parallel lines (yielding no solution); connect to standards in Geometry which require students to prove the slope criteria for parallel lines.* **M.A1HS.17** 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.
	Topic 5: Piecewise Functions	*Instructional Note: Topic 5 is to be skipped.*	

ALGEBRA 1 CURRICULUM MAP REVISED: JUNE 2019

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3rd Nine Weeks	**Topic 6: Exponents and Exponential Functions** *(Skip Lessons 2, 3, 4, and 5)*	**Lesson 1:** M.A1HS.11 M.A1HS.12	**M.A1HS.11** 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. (e.g., We define $5^{1/3}$ to be the cube root of 5 because we want $(5^{1/3})^3 = 5^{(1/3)3}$ to hold, so $(5^{1/3})^3$ must equal 5.) *Instructional Note: Address this standard before discussing exponential functions with continuous domains.* **M.A1HS.12** Rewrite expressions involving radicals and rational exponents using the properties of exponents. *Instructional Note: Address this standard before discussing exponential functions with continuous domains.*
4th NINE WEEKS	**Topic 7: Polynomials and Factoring**	**Lesson 1:** M.A1HS.44 **Lesson 2:** M.A1HS.44 **Lesson 3:** M.A1HS.44 **Lesson 4:** M.A1HS.42 M.A1HS.44 **Lesson 5:** M.A1HS.4 M.A1HS.44 **Lesson 6:** M.A1HS.41 **Lesson 7:** M.A1HS.4 M.A1HS.42	**M.A1HS.4/41** Interpret expressions that represent a quantity in terms of its context. a. Interpret parts of an expression, such as terms, factors, and coefficients. ~~b. Interpret complicated expressions by viewing one or more of their parts as a single entity. (e.g., Interpret $P(1+r)^n$ as the product of P and a factor not depending on P.~~ *Instructional Note: Limit to linear expressions.* **M.A1HS.42** Use the structure of an expression to identify ways to rewrite it. For example, see $x^4 - y^4$ as $(x^2)^2 - (y^2)^2$, thus recognizing it as a difference of squares that can be factored as $(x^2 - y^2)(x^2 + y^2)$. *Instructional Note: Focus on teaching GCF and trinomials - factor by grouping, no special rules.* **M.A1HS.44** ~~Recognize 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. *Instructional Note: Focus on polynomial expressions that simplify to forms that are linear or quadratic in a positive integer power of x.*

ALGEBRA 1 CURRICULUM MAP REVISED: JUNE 2019

9 Weeks	Envision Algebra 1	Topic/Lesson	WV College & Career Readiness Standard(s)
4th NINE WEEKS	**Topic 9: Solving Quadratic Equations** *(Skip Lessons 3, 5, and 7)* ****If time permits, do not stress if you cannot get this far!****	**Lesson 1:** M.A1HS.16 M.A1HS.45 M.A1HS.46 M.A1HS.48b **Lesson 2:** M.A1HS.43 M.A1HS.48 M.A1HS.55 **Lesson 4:** M.A1HS.42 M.A1HS.45 M.A1HS.48 **Lesson 6:** M.A1HS.43 M.A1HS.45 M.A1HS.47 M.A1HS.48	**M.A1HS.16** Explain why the x-coordinates of the points where the graphs of the equations y = f(x) and y = g(x) intersect are the solutions of the equation f(x) = g(x); find the solutions approximately (e.g., using technology to graph the functions, make tables of values or find successive approximations). Include cases where f(x) and/or g(x) are linear, polynomial, ~~rational, absolute value, exponential and logarithmic functions.~~ *Instructional Note: Focus on cases where f(x) and g(x) are linear or quadratic.* **M.A1HS.42** Use the structure of an expression to identify ways to rewrite it. For example, see $x^4 - y^4$ as $(x^2)^2 - (y^2)^2$, thus recognizing it as a difference of squares that can be factored as $(x^2 - y^2)(x^2 + y^2)$. *Instructional Note: Focus on quadratic expressions.* **M.A1HS.43** Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression. a. Factor a quadratic expression to reveal the zeros of the function it defines. ~~b. Complete the square in a quadratic expression to reveal the maximum or minimum value of the function it defines.~~ ~~c. Use the properties of exponents to transform expressions for exponential functions. For example the expression 1.15^t can be rewritten as $(1.15^{1/12})^{12t} \approx 1.012^{12t}$ to reveal the approximate equivalent monthly interest rate if the annual rate is 15%.~~ **M.A1HS.45** Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and quadratic functions~~, and simple rational and exponential functions.~~ *Instructional Note: Extend work on linear equations in the relationships between quantities and reasoning with equations unit to quadratic equations.* **M.A1HS.46** Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales. *Instructional Note: Extend work on linear and equations in the relationships between quantities and reasoning with equations unit to quadratic equations.* **M.A1HS.47** Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. (e.g., Rearrange Ohm's law V = IR to highlight resistance R). *Instructional Note: Extend work on linear equations in the relationships between quantities and reasoning with equations unit to quadratic equations. Extend this standard to formulas involving squared variables.*

9 Weeks	Envision Algebra 1	Topic/Lesson	WV College & Career Readiness Standard(s)
4th NINE WEEKS	**Topic 9: Solving Quadratic Equations (cont'd)** *(Skip Lessons 3, 5, and 7)* ****If time permits, do not stress if you cannot get this far!****	**Lesson 1:** M.A1HS.16 M.A1HS.45 M.A1HS.46 M.A1HS.48b **Lesson 2:** M.A1HS.43 M.A1HS.48 M.A1HS.55 **Lesson 4:** M.A1HS.42 M.A1HS.45 M.A1HS.48 **Lesson 6:** M.A1HS.43 M.A1HS.45 M.A1HS.47 M.A1HS.48	**M.A1HS.48** Solve quadratic equations in one variable. ~~a. 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.~~ b. Solve quadratic equations by inspection (e.g., for $x^2 = 49$), 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 $a \pm bi$ for real numbers a and b. *Instructional Note: Students should learn of the existence of the complex number system, but will not solve quadratics with complex solutions until Algebra II.* **M.A1HS.49** Solve a simple system consisting of a linear equation and a quadratic equation in two variables algebraically and graphically. For example, find the points of intersection between the line $y = 3x$ and the circle $x^2 + y^2 = 3$. *Instructional Note: Include systems consisting of one linear and one quadratic equation. Include systems that lead to work with fractions. For example, finding the intersections between $x^2 + y^2 = 1$ and $y = (x + 1)/2$ leads to the point (3/5 , 4/5) on the unit circle, corresponding to the Pythagorean triple $3^2 + 4^2 = 5^2$.* **M.A1HS.55** Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function. a. Use the process of factoring ~~and completing the square~~ in a quadratic function to show zeros, extreme values, and symmetry of the graph, and interpret these in terms of a context. ~~b. Use the properties of exponents to interpret expressions for exponential functions. For example, identify percent rate of change in functions such as $y = (1.02)^t$, $y = (0.97)^t$, $y = (1.01)^{12t}$, $y = (1.2)^{t/10}$, and classify them as representing exponential growth or decay.~~ *Instructional Note: Extend work with quadratics to include the relationship between coefficients and roots, and that once roots are known, a quadratic equation can be factored.*
4TH NINE WEEKS	**Topic 11: Statistics** *(Skip Lessons 3, 4, and 5)* ***If time permits, do not stress if you cannot get this far!****	**Lesson 1:** M.A1HS.33 M.A1HS.34 **Lesson 2:** M.A1HS.33 M.A1HS.34 M.A1HS.35	**M.A1HS.33** Represent data with plots on the real number line (dot plots, histograms, and box plots). **M.A1HS.34** Use statistics appropriate to the shape of the data distribution to compare center (median, mean) and spread (interquartile range, standard deviation) of two or more different data sets.

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4th NINE WEEKS	**Topic 11: Statistics** *(Skip Lessons 3, 4, and 5)* ***If time permits, do not stress if you cannot get this far!****	**Lesson 1:** M.A1HS.33 M.A1HS.34 **Lesson 2:** M.A1HS.33 M.A1HS.34 M.A1HS.35	**M.A1HS.35** Interpret differences in shape, center, and spread in context of the data sets, accounting for possible effects of extreme data points (outliers). *Instructional Note: In grades 6-8, students describe center and spread in a data distribution. Here they choose a summary statistic appropriate to the characteristics of the data distribution, such as the shape of the distribution or the existence of extreme data points.* **M.A1HS.36** Summarize categorical data for two categories in two-way frequency tables. Interpret relative frequencies in the context of the data (including joint, marginal, and conditional relative frequencies). Recognize possible associations and trends in the data.
	Topic 8: Quadratic Functions	***Instructional Note: Topic 8 is only to be taught if all other previously listed topics were taught to mastery!*** **M.A1HS.15** Recognize that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line). *Instructional Note: Focus on quadratic equations and be able to adapt and apply that learning to other types of equations in future courses.* **M.A1HS.51** 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. Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; ~~and periodicity~~. *Instructional Note: Focus on quadratic functions, compare with linear functions studied in the unit on linear relationships.* **M.A1HS.52** Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. For example, if the function h(n) gives the number of person-hours it takes to assemble n engines in a factory, then the positive integers would be an appropriate domain for the function. *Instructional Note: Focus on quadratic functions; compare with linear functions studied in the unit on linear relationships.* **M.A1HS.56** Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). For example, given a graph of one quadratic function and an algebraic expression for another, say which has the larger maximum. *Instructional Note: Highlight issues of domain, range, and usefulness when examining piecewise-defined functions. Extend work with quadratics to include the relationship between coefficients and roots, and that once roots are known, a quadratic equation can be factored.*

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	Topic 10: Working with Functions		***Instructional Note: Topic 10 is only to be taught if all other previously listed topics were taught to mastery!*** **M.A1HS.28/58** Identify the effect on the graph of replacing f(x) by f(x) + k, k f(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 graphs using technology. ~~Include recognizing even and odd functions from their graphs and algebraic expressions for them.~~ *Instructional Note: Focus on quadratic functions, and consider including absolute value functions.* **M.A1HS.54** Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases. a. Graph linear and quadratic functions and show intercepts, maxima, and minima. b. Graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions. *Instructional Note: Compare and contrast absolute value, step and piecewise-defined functions with linear and quadratic functions. Highlight issues of domain, range, and usefulness when examining piecewise-defined functions. Extend work with quadratics to include the relationship between coefficients and roots, and that once roots are known, a quadratic equation can be factored.* **M.A1HS.59** Find inverse functions. Solve an equation of the form f(x) = c for a simple function f that has an inverse and write an expression for the inverse. For example, $f(x) = 2x^3$ or $f(x) = (x + 1)/(x – 1)$ for $x \neq 1$. Instructional Note: Focus on linear functions but consider simple situations where the domain of the function must be restricted in order for the inverse to exist, such as $f(x) = x^2$, $x > 0$.

Standards to Be Utilized throughout the School Year:

M.A1HS.3 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.

M.A1HS.20 Recognize that sequences are functions, sometimes defined recursively, whose domain is a subset of integers. (e.g., the Fibonacci sequence is defined recursively by $f(0) = f(1) = 1$, $f(n + 1) = f(n) + f(n - 1)$ for $n \geq 1$.

M.A1HS.37 Represent data on two quantitative variables on a scatter plot, and describe how the variables are related.
a. Fit a function to the data; use functions fitted to data to solve problems in the context of the data. Use given functions or choose a function suggested by the context. Emphasize linear ~~and exponential~~ models.
b. Informally assess the fit of a function by plotting and analyzing residuals.
c. Fit a linear function for scatter plots that suggest a linear association.
Instructional Note: This standard should be utilized in Chapter 2, when discussing positive and negative slopes.

M.A1HS.31/60 Observe using graphs and tables that a quantity increasing exponentially eventually exceeds a quantity increasing linearly, quadratically, or (more generally) as a polynomial function. *Instructional Note: Standard should be utilized via pictures of graphs for which domain/range, increasing/decreasing, and finding values through function notation (i.e. f(2) = ?) are discussed.*

M.A1HS.39 Compute (using technology) and interpret the correlation coefficient of a linear fit. *Instructional Note: Standard should be utilized throughout the school year as vocabulary.*

M.A1HS.40 Distinguish between correlation and causation. *Instructional Note: Standard should be utilized throughout the school year as vocabulary.*

M.A1HS.50 Explain why the sum or product of two rational numbers is rational; that the sum of a rational number and an irrational number is irrational; and that the product of a nonzero rational number and an irrational number is irrational. *Instructional Note: Standard should be utilized throughout the school year as vocabulary.*