Algebra I Timeline for 9th grade

Macon County 2017-2018

1st 4.5 Weeks

Standard	Learning Target	Resources	T	M
	Quantities and Modeling			
A-REI.A.1	* I can justify each step in solving a simple equation * I can select or interpret the unit form of a quantity in a formula * I can determine the process for solving a multi-step problem using the units involved * I can interpret the meaning of the origin or scale for a graph or data display * I can define appropriate quantities for the purpose of descriptive modeling * I can choose a level of accuracy appropriate to limitations on measurement * I can interpret a complicated linear expression by viewing one or more of its parts as a single entity * I can write a linear equation in one variable * I can solve a problem involving a linear equation in one variable * I can create linear equations to represent relationships between quantities * Represent constraints using linear equations or inequalities * Rearrange a formula to isolate a variable of interest where the formula is linear in that variable	HMH – Module 2 4 Days		
N-Q.A.1				
N-Q.A.2				
N-Q.A.3				
A-SSE.A.1a				
A-SSE.A.1b				
A-CED.A.1				
A-CED.A.3				
A-CED.A.4				
	Understanding Functions			
F-IF.A.1	* I can understand the definition of a function * I can evaluate a function for a given input * I can interpret a statement that uses function notation * I can interpret features of a linear or exponential function that models a relationship between two quantities * I can sketch the graph of a linear or exponential function given a verbal description of the relationship between two quantities * I can sketch the graph of a quadratic function given a verbal description of the relationship * I can write an arithmetic sequence * I can write a geometric sequence * I can determine the equation of a linear function * I can determine the equation of an exponential function * I can determine an explicit expression, recursive process, or steps for calculating the outputs of a function from a context	HMH – Module 3 6 Days		
F-IF.A.2				
F-IF.B.3				
F-LE.A.2				
F-BF.A.1a				
	Linear Functions, Equations, and Inequalities			
F-LE.A.1a	*I can identify situations that can be modeled by a linear function	HMH – Module 5 HMH – Module 6		
F-LE.A.1b				

F-LE.B.4 **F-IF.B.5** **F-IF.C.6a** **F-IF.C.8** **F-BF.B.2** **A-REI.D.5** **A-REI.D.6** **A-REI.D.7** **A-CED.A.2** **A-CED.A.3**	*** I can calculate the rate of change of a linear function or the average rate of change of an exponential function over a specified interval** *** I can interpret the rate of change of a linear function or the average rate of change of an exponential function over a specified interval** *** I can estimate the average rate of change of a linear or exponential function over a specified interval on a graph** *** I can calculate the average rate of change of a quadratic function** *** I can estimate the average rate of change of a quadratic function on a graph**	**HMH – Module 7** **12 Days**		
S-ID.C.5	*** I can interpret zeros, maxima or minima, and axis of symmetry of a quadratic function given a context** *** I can graph a quadratic function showing its intercepts and maximum or minimum** *** I can graph a linear function showing its intercepts** *** I can compare the properties of two linear or two exponential functions** *** I can write a quadratic function when given a graph** *** I can compare a graph of a piecewise-defined, step, or absolute value function with the graph of a linear, quadratic, or exponential function** *** I can compare the properties of two quadratic functions** ***** *I can Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane* ** I can explain why the x-coordinate(s) of the intersection(s) of f(x) and g(x) are the solution(s) of the linear or exponential equation f(x) = g(x)* ** I can approximate the solution(s) of the linear and/or exponential equation f(x) = g(x)* ** I can determine a graph of a piecewise-defined, step, or absolute value function* ** I can graph the solution to a linear inequality in two variables* ** I can graph the solution to a system of linear inequalities in two variables* *** I can *u*nderstand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane** *** I can write a quadratic equation in two or more variables to represent relationships between quantities** *** I can graph a quadratic equation using coordinate axes** *** I can graph a linear or exponential equation using coordinate axes** *** I can represent constraints using linear equations or inequalities** ** I can Identify the effect of replacing f(x) with f(x) + k on a linear or exponential graph* ** I can determine the linear or exponential function resulting from a transformation given the parent function and graphs of the parent*			

	and transformed functions ** I can identify the effect of replacing f(x) with f(x) + k or f(x + k) on a quadratic graph* ** I can identify the effect of replacing f(x) with kf(x) or f(kx) on a quadratic graph* ** I can determine the quadratic function resulting from a transformation given the parent function and graphs of the parent and transformed functions* ** I can interpret the parameters in a linear or exponential function* ** I can interpret the slope and y-intercept of a linear model within context*			

2nd 4.5 Weeks

Standard	Learning Target	Resources	T	M
	Linear Systems			
A-REI.C.4 **A-REI.C.6** **A-REI.D.12** **A-CED.A.3**	*** I can write and solve a system of linear equations in contest (algebraically and graphically) * New SY 17/18*** *** I can solve a system of linear equations** *** I can graph the solution to a linear inequality in two variables variables** *** I can represent constraints using linear equations or inequalities**	**HMH – Module 12** **6 Days**		
	Piecewise-Defined Functions			
A-REI.B.2 **F-IF.C.6b**	***I can solve a linear equation or inequality in one variable** *** I can justify each step in solving a simple equation**	**HMH – Module 13** **2 Days**		
	Geometric Sequences and Exponential Functions			
		HMH – Module 4 **HMH – Module 15** **9 Days**		
F-LE.A.2	*** I can write an arithmetic sequence**			
F-LE.A.3	*** I can write a geometric sequence**			
F-BF.A.1a	*** I can determine the equation of a linear function**			
F-BF.B.3	*** I can determine the equation of an exponential function** *** I can determine an explicit expression, recursive process, or steps for calculating the outputs of a function from a context**			

	*** I can recognize that a quantity that increases exponentially eventually exceeds a quantity that increases linearly** *** I can recognize that exponential growth eventually exceeds linear, quadratic, and polynomial growth** ** I can identify the effect of replacing f(x) with f(x) + k on a linear or exponential graph* ** I can determine the linear or exponential function resulting from a transformation given the parent function and graphs of the parent and transformed functions* ** I can-i Identify the effect of replacing f(x) with f(x) + k or f(x + k) on a quadratic graph* ** I can identify the effect of replacing f(x) with kf(x) or f(kx) on a quadratic graph* ** I can determine the quadratic function resulting from a transformation given the parent function and graphs of the parent and transformed functions*			
	<u>Exponential Relationships</u>			
	*** I can write a linear or exponential equation in one variable** *** I can solve a problem involving a linear or exponential equation in one variable** *** I can create linear and exponential equations to represent relationships between quantities** *** I can explain that rational numbers are closed under the four operations** *** I can use the properties of exponents to write an equivalent form of an exponential function** *** I can relate the domain of a linear or exponential function to the function's graph or the quantitative relationship it describes** *** I can relate the domain of a quadratic function to the quantitative relationship the function describes** *** I can relate the domain of a quadratic function to the function's graph** *** I can write a quadratic equation in one variable** *** I can solve a problem involving a quadratic equation in one variable** *** I can identify situations that can be modeled by an exponential function** *** I can determine the exponential function of best fit for data on a scatter plot** *** I can solve a problem using a best fit function in a context of data**	**HMH – Module 14** **HMH – Module 16** **2 Days**		
A-CED.A.1				
F-IF.B.4				
F-LE.A.1c				
S-ID.B.4a				
A-SSE.B.3c				
	<u>Polynomial Operations</u>			
A-SSE.A.1a	***I can interpret a complicated quadratic or exponential expression by viewing one or more of its parts as a single entity** *** I can use the structure of an expression to rewrite a quadratic or exponential expression** *** I can add quadratic polynomials**	**HMH – Module 17** **HMH – Module 18** **6 Days**		
A-SSE.A.2				
A-APR.A.1				

	* I can subtract quadratic polynomials * I can multiply polynomials that result in a quadratic product			

3rd 4.5 Weeks

Standard	Learning Target	Resources	T	M
	Quadratic Functions			
F-BF.B.2	*I can identify the effect of replacing f(x) with f(x) + k on a linear or exponential graph * I can determine the linear or exponential function resulting from a transformation given the parent function and graphs of the parent and transformed functions * I can identify the effect of replacing f(x) with f(x) + k or f(x + k) on a quadratic graph * I can identify the effect of replacing f(x) with kf(x) or f(kx) on a quadratic graph * I can determine the quadratic function resulting from a transformation given the parent function and graphs of the parent and transformed functions * I can interpret features of a linear or exponential function that models a relationship between two quantities * I can sketch the graph of a linear or exponential function given a verbal description of the relationship between two quantities * I can sketch the graph of a quadratic function given a verbal description of the relationship * I can interpret zeros, maxima or minima, and axis of symmetry of a quadratic function given a context * I can identify situations that can be modeled by a linear function * I can factor a quadratic expression to find the zeros of the function it defines * I can understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane * I can write a quadratic equation in two or more variables to represent relationships between quantities * I can graph a quadratic equation using coordinate axes * I can graph a linear or exponential equation using coordinate axes * I can complete the square of a quadratic function to identify properties of the function	HMH – Module 19 HMH – Module 20 HMH – Module 21 HMH – Module 22 HMH – Module 23 HMH – Module 24 15 Days		
F-IF.C.6a				
F-IF.C.6b				
F-IF.C.7a				
F-LE.A.1b				
A-APR.B.2				
A-REI.B.3				
A-REI.B.3a				
A-REI.B.3b				
A-SSE.B.3 a				
A-SSE.B.3 b				
A-CED.A.2				

4th 4.5 weeks

	Statistical Models			
S-ID.A.1	*** I can represent data using a dot plot** *** I can represent data using a histogram** *** I can represent data using a box plot** *** I can determine an appropriate summary statistic when comparing data sets** *** I can interpret relative frequencies in a two-way frequency table in context** *** I can determine the linear function of best fit for data on a scatter plot** *** I can interpret differences in shape, center, and spread in the context of two or more different data sets** *** I can compute the correlation coefficient of a linear fit** *** I can interpret the correlation coefficient of a linear fit** *** I can distinguish between correlation and causation**	**HMH – Module 8** **HMH – Module 9** **HMH – Module 10** **HMH – Module 11** **16 Days** **** Include review of italicized topics**		
S-ID.A.2				
S-ID.A.3				
S-ID.B.4b				
S-ID.C.6				
S-ID.C.7				
	STATE ASSESSMENT Review	**6 Days**		