

# NC Math 1 Scope and Sequence 2017-2018

## Semester Block High School

**Refer to Unit Planning Organizers for Instructional Guidance**

**Suggested Pacing:**

Unit	Unit Title	Days
	Week for Inspirational Math	5
1	Introduction to Functions & Equations	10
2A	Linear Functions	12
	<b>Benchmark 1 District Assessment</b>	<b>1</b>
2B	Modeling with Linear Functions	7
3A	Connecting Algebra & Geometry Concepts on the Coordinate Plane	5
3B	Systems of Equations & Inequalities	4/6*
	<b>Quarter 1/2*</b>	<b>44/46*</b>
3B	Systems of Equations & Inequalities	6/4*
4	Exponential Functions	10
	<b>Benchmark 2 District Assessment</b>	<b>1</b>
5	Quadratic Functions	13
6	One-Variable Statistics	6
	<b>Review/Extension/EOC Exam</b>	<b>10</b>
	<b>Quarter 2/4*</b>	<b>46/44*</b>
	<b>TOTAL</b>	<b>90</b>

\*Second Semester

*The suggested pacing above allows a 10-day testing window at the end of Quarter 2.  
The days suggested for each unit include assessment and review days.  
Each unit may need some flexibility based on your school's schedule – this is just a guide.*

Standards for Mathematical Practice	
1. Make sense of problems and persevere in solving them.	5. Use appropriate tools strategically.
2. Reason abstractly and quantitatively.	6. Attend to precision.
3. Construct viable arguments and critique reasoning of others.	7. Look for and make use of structure.
4. Model with mathematics	8. Look for and express regularity in repeated reasoning.

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Quarter 1/Quarter 3*	
Week of Inspirational Math - Incorporate into first 5 days of instruction.	# Days: 5
Unit 1: Introduction to Functions & Equations	# Days: 10
<p><b>Concepts to Integrate: Apply all to real world applications.</b></p> <ul style="list-style-type: none"> <li>• Create equations that describe numbers or relationships.</li> <li>• Understand solving equations as a process of reasoning and explain the reasoning.</li> <li>• Solve equations and inequalities in one variable.</li> <li>• Understand the concept of a function and use function notation.</li> <li>• Interpret functions that arise in applications in terms of the context.</li> </ul>	
<b>SMPs: ALL</b>	
<b>Creating Equations</b> <i>Create equations that describe numbers or relationships.</i>	
NC.M1.A-CED.1	Create equations and inequalities in one variable that represent <b>linear</b> , exponential, and quadratic relationships and use them to solve problems.
NC.M1.A-CED.4	Solve for a quantity of interest in formulas used in science and mathematics using the same reasoning as in solving equations.
<b>Reasoning with Equations and Inequalities</b> <i>Understand solving equations as a process of reasoning and explain the reasoning.</i>	
NC.M1.A-REI.1	Justify a chosen solution method and each step of the solving process for <b>linear</b> and quadratic equations using mathematical reasoning.
<b>Reasoning with Equations and Inequalities</b> <i>Solve equations and inequalities in one variable.</i>	
NC.M1.A-REI.3	Solve linear equations and inequalities in one variable.
<b>Interpreting Functions</b> <i>Understand the concept of a function and use function notation.</i>	
NC.M1.F-IF.1	Build an understanding 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 by recognizing that: <ul style="list-style-type: none"> <li>• if <math>f</math> is a function and <math>x</math> is an element of its domain, then <math>f(x)</math> denotes the output of <math>f</math> corresponding to the input <math>x</math>.</li> <li>• the graph of <math>f</math> is the graph of the equation <math>y = f(x)</math>.</li> </ul>
NC.M1.F-IF.2	Use function notation to evaluate <b>linear</b> , quadratic, and exponential functions for inputs in their domains, and interpret statements that use function notation in terms of a context.

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NC.M1.F-IF.3	<b>Recognize that recursively and explicitly defined sequences are functions whose domain is a subset of the integers</b> , the terms of an arithmetic sequence are a subset of the range of a linear function, and the terms of a geometric sequence are a subset of the range of an exponential function.
<b>Interpreting Functions</b> <i>Interpret functions that arise in applications in terms of the context.</i>	
NC.M1.F-IF.4	Interpret key features of graphs, tables, and verbal descriptions in context to describe functions that arise in applications relating two quantities, including: intercepts; intervals where the function is increasing, decreasing, positive, or negative; and maximums and minimums.
NC.M1.F-IF.5	Interpret a function in terms of the context by relating its domain and range to its graph and, where applicable, to the quantitative relationship it describes.
NC.M1.F-IF.6	Calculate and interpret the average rate of change over a specified interval for a function presented numerically, graphically, and/or symbolically.

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Quarter 1/Quarter 3*	
<b>Unit 2A: Linear Functions</b>	<b># Days: 12</b>
<b>Benchmark 1 District Assessment</b>	<b># Days: 1</b>
<p><b>Concepts to Integrate: Apply all to real world applications.</b></p> <ul style="list-style-type: none"> <li>• Interpret the structure of linear expressions.</li> <li>• Create linear equations that describe numbers or relationships.</li> <li>• Represent and solve linear equations and inequalities graphically</li> <li>• Understand the concept of a linear function and use function notation.</li> <li>• Interpret linear functions that arise in applications in terms of the context.</li> <li>• Analyze linear functions using different representations.</li> <li>• Build a linear function that models a relationship between two quantities.</li> <li>• Interpret expressions for linear functions in terms of the situation they model.</li> </ul>	
<b>SMPs: ALL</b>	
<b>Seeing Structure in Expressions</b> <i>Interpret the structure of expressions.</i>	
NC.M1.A-SSE.1	Interpret expressions that represent a quantity in terms of its context.
NC.M1.A-SSE.1a	a. Identify and interpret parts of a <b>linear</b> , exponential, or quadratic expression, including terms, factors, coefficients, and exponents.
NC.M1.A-SSE.1b	b. Interpret a <b>linear</b> , exponential, or quadratic expression made of multiple parts as a combination of entities to give meaning to an expression.
<b>Creating Equations</b> <i>Create equations that describe numbers or relationships.</i>	
NC.M1.A-CED.2	Create and graph equations in two variables to represent <b>linear</b> , exponential, and quadratic relationships between quantities.
<b>Reasoning with Equations and Inequalities</b> <i>Represent and solve equations and inequalities graphically</i>	
NC.M1.A-REI.10	Understand that the graph of a two variable equation represents the set of all solutions to the equation.
NC.M1.A-REI.11	Build an understanding of why the x-coordinates of the points where the graphs of two <b>linear</b> , exponential, and/or quadratic equations $y = (x)$ and $y = (x)$ intersect are the solutions of the equation $(x) = (x)$ and approximate solutions using graphing technology or successive approximations with a table of values.
<b>Interpreting Functions</b> <i>Understand the concept of a function and use function notation.</i>	

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NC.M1.F-IF.2	Use function notation to evaluate <b>linear</b> , quadratic, and exponential functions for inputs in their domains, and interpret statements that use function notation in terms of a context.
NC.M1.F-IF.3	Recognize that recursively and explicitly defined sequences are functions whose domain is a subset of the integers, <b>the terms of an arithmetic sequence are a subset of the range of a linear function</b> , and the terms of a geometric sequence are a subset of the range of an exponential function.
<b>Interpreting Functions</b> <i>Interpret functions that arise in applications in terms of the context.</i>	
NC.M1.F-IF.4	Interpret key features of graphs, tables, and verbal descriptions in context to describe functions that arise in applications relating two quantities, including: intercepts; intervals where the function is increasing, decreasing, positive, or negative; and maximums and minimums.
NC.M1.F-IF.5	Interpret a function in terms of the context by relating its domain and range to its graph and, where applicable, to the quantitative relationship it describes.
NC.M1.F-IF.6	Calculate and interpret the average rate of change over a specified interval for a function presented numerically, graphically, and/or symbolically.
<b>Interpreting Functions</b> <i>Analyze functions using different representations.</i>	
NC.M1.F-IF.7	Analyze <b>linear</b> , exponential, and quadratic functions by generating different representations, by hand in simple cases and using technology for more complicated cases, to show key features, including: domain and range; rate of change; intercepts; intervals where the function is increasing, decreasing, positive, or negative; maximums and minimums; and end behavior.
NC.M1.F-IF.9	Compare key features of two functions ( <b>linear</b> , quadratic, or exponential) each with a different representation (symbolically, graphically, numerically in tables, or by verbal descriptions).
<b>Building Functions</b> <i>Build a function that models a relationship between two quantities.</i>	
NC.M1.F.BF.1	Write a function that describes a relationship between two quantities.
NC.M1.F.BF.1a	<ul style="list-style-type: none"> <li>a. Build <b>linear</b> and exponential functions, including <b>arithmetic</b> and geometric sequences, given a graph, a description of a relationship, or two ordered pairs (include reading these from a table).</li> </ul>
NC.M1.F.BF.1b	<ul style="list-style-type: none"> <li>b. Build a function that models a relationship between two quantities by combining <b>linear</b>, exponential, or quadratic functions with addition and subtraction or <b>two linear functions with multiplication</b>.</li> </ul>
NC.M1.F.BF.2	Translate between explicit and recursive forms of <b>arithmetic</b> and geometric sequences and use both to model situations.
<b>Linear, Quadratic, and Exponential Models</b> <i>Interpret expressions for functions in terms of the situation they model.</i>	
NC.M1.F.LE.5	Interpret the parameters $a$ and $b$ in a <b>linear function</b> $f(x) = ax + b$ or an exponential function $g(x) = ab^x$ in terms of a context.

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Quarter 1/Quarter 3*	
<b>Unit 2B: Linear Functions</b>	<b># Days: 7</b>
<b>Concepts to Integrate: Apply all to real world applications.</b> <ul style="list-style-type: none"> <li>• Construct and compare linear models and solve problems.</li> <li>• Summarize and compare linear models and solve problems.</li> </ul>	
<b>SMPs: ALL</b>	
<b>Linear, Quadratic, and Exponential Models</b> <i>Construct and compare linear and exponential models and solve problems.</i>	
NC.M1.F-LE.1	Identify situations that can be modeled with <b>linear</b> and exponential functions, and justify the most appropriate model for a situation based on the rate of change over equal intervals.
<b>Interpreting Categorical and Quantitative Data</b> <i>Summarize, represent, and interpret data on two categorical and quantitative variables.</i>	
NC.M1.S-ID.6	Represent data on two quantitative variables on a scatter plot, and describe how the variables are related.
NC.M1.S-ID.6a	a. Fit a least squares regression line to linear data using technology. Use the fitted function to solve problems.
NC.M1.S-ID.6b	b. Assess the fit of a linear function by analyzing residuals.
NC.M1.S-ID.7	Interpret in context the rate of change and the intercept of a linear model. Use the linear model to interpolate and extrapolate predicted values. Assess the validity of a predicted value.
NC.M1.S-ID.8	Analyze patterns and describe relationships between two variables in context. Using technology, determine the correlation coefficient of bivariate data and interpret it as a measure of the strength and direction of a linear relationship. Use a scatter plot, correlation coefficient, and a residual plot to determine the appropriateness of using a linear function to model a relationship between two variables.
NC.M1.S-ID.9	Distinguish between association and causation.

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Quarter 1/Quarter 3*	
<b>Unit 3A: Connecting Algebra &amp; Geometry Concepts on the Coordinate Plane</b>	<b># Days: 5</b>
<b>Concepts to Integrate: Apply all to real world applications.</b>	
<ul style="list-style-type: none"> <li>• Use coordinates to prove simple geometric theorems algebraically.</li> </ul>	
<b>SMPs: ALL</b>	
<b>Expressing Geometric Properties with Equations</b> <i>Use coordinates to prove simple geometric theorems algebraically.</i>	
NC.M1.G-GPE.4	Use coordinates to solve geometric problems involving polygons algebraically: <ul style="list-style-type: none"> <li>• Use coordinates to compute perimeters of polygons and areas of triangles and rectangles.</li> <li>• Use coordinates to verify algebraically that a given set of points produces a particular type of triangle or quadrilateral.</li> </ul>
NC.M1.G-GPE.5	Use coordinates to prove the slope criteria for parallel and perpendicular lines and use them to solve problems. <ul style="list-style-type: none"> <li>• Determine if two lines are parallel, perpendicular, or neither.</li> <li>• Find the equation of a line parallel or perpendicular to a given line that passes through a given point.</li> </ul>
NC.M1.G-GPE.6	Use coordinates to find the midpoint or endpoint of a line segment.

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Quarter 1 & 2/Quarter 3 & 4*	
<b>Unit 3B: Systems of Equations &amp; Inequalities</b>	<b># Days: 10</b>
<b>Concepts to Integrate: Apply all to real world applications.</b> <ul style="list-style-type: none"> <li>• Create systems of linear equations that describe numbers or relationships.</li> <li>• Solve systems of linear equations.</li> <li>• Represent and solve systems of linear equations and inequalities graphically.</li> </ul>	
<b>SMPs: ALL</b>	
<b>Creating Equations</b> <i>Create equations that describe numbers or relationships.</i>	
NC.M1.A-CED.2	Create and graph equations in two variables to represent linear, exponential, and quadratic relationships between quantities.
NC.M1.A-CED.3	Create systems of linear equations and inequalities to model situations in context.
<b>Reasoning with Equations and Inequalities</b> <i>Solve systems of equations.</i>	
NC.M1.A-REI.5	Explain why replacing one equation in a system of linear equations by the sum of that equation and a multiple of the other produces a system with the same solutions.
NC.M1.A-REI.6	Use tables, graphs, or algebraic methods (substitution and elimination) to find approximate or exact solutions to systems of linear equations and interpret solutions in terms of a context.
<b>Reasoning with Equations and Inequalities</b> <i>Represent and solve equations and inequalities graphically</i>	
NC.M1.A-REI.10	Understand that the graph of a two variable equation represents the set of all solutions to the equation.
NC.M1.A-REI.12	Represent the solutions of a linear inequality or a system of linear inequalities graphically as a region of the plane.



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Quarter 2/Quarter 4*	
<b>Unit 4: Exponential Functions</b>	<b># Days: 10</b>
<b>Benchmark 2 District Assessment</b>	<b># Days: 1</b>
<p><b>Concepts to Integrate: Apply all to real world applications.</b></p> <ul style="list-style-type: none"> <li>• Extend the properties of exponents to integer exponents.</li> <li>• Create exponential equations that describe numbers or relationships.</li> <li>• Represent and solve a system linear and exponential equations and graphically</li> <li>• Understand the concept of an exponential function and use function notation.</li> <li>• Interpret exponential functions that arise in applications in terms of the context.</li> <li>• Analyze exponential functions using different representations.</li> <li>• Build an exponential function that models a relationship between two quantities.</li> <li>• Construct and compare linear and exponential models and solve problems.</li> <li>• Interpret expressions for exponential functions in terms of the situation they model.</li> <li>• Summarize, represent and interpret data on two categorical and quantitative variables.</li> </ul>	
<b>SMPs: ALL</b>	
<b>The Real Number System</b> <i>Extend the properties of exponents to rational exponents.</i>	
NC.M1.N-RN.2	Rewrite algebraic expressions with integer exponents using the properties of exponents.
<b>Seeing Structure in Expressions</b> <i>Interpret the structure of expressions.</i>	
NC.M1.A-SSE.1	Interpret expressions that represent a quantity in terms of its context.
NC.M1.A-SSE.1a	a. Identify and interpret parts of a linear, <b>exponential</b> , or quadratic expression, including terms, factors, coefficients, and exponents.
NC.M1.A-SSE.1b	b. Interpret a linear, <b>exponential</b> , or quadratic expression made of multiple parts as a combination of entities to give meaning to an expression.
<b>Creating Equations</b> <i>Create equations that describe numbers or relationships.</i>	
NC.M1.A-CED.2	Create and graph equations in two variables to represent linear, <b>exponential</b> , and quadratic relationships between quantities.
<b>Reasoning with Equations and Inequalities</b> <i>Represent and solve equations and inequalities graphically</i>	

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NC.M1.A-REI.11	Build an understanding of why the $x$ -coordinates of the points where the graphs of two <b>linear</b> , <b>exponential</b> , and/or quadratic equations $y = (x)$ and $y = (x)$ intersect are the solutions of the equation $(x) = (x)$ and approximate solutions using graphing technology or successive approximations with a table of values.
<b>Interpreting Functions</b> <i>Understand the concept of a function and use function notation.</i>	
NC.M1.F-IF.2	Use function notation to evaluate linear, quadratic, and <b>exponential</b> functions for inputs in their domains, and interpret statements that use function notation in terms of a context.
NC.MI.F-IF.3	Recognize that recursively and explicitly defined sequences are functions whose domain is a subset of the integers, the terms of an arithmetic sequence are a subset of the range of a linear function, and <b>the terms of a geometric sequence are a subset of the range of an exponential function.</b>
<b>Interpreting Functions</b> <i>Interpret functions that arise in applications in terms of the context.</i>	
NC.M1.F-IF.4	Interpret key features of graphs, tables, and verbal descriptions in context to describe functions that arise in applications relating two quantities, including: intercepts; intervals where the function is increasing, decreasing, positive, or negative; and maximums and minimums.
NC.M1.F-IF.5	Interpret a function in terms of the context by relating its domain and range to its graph and, where applicable, to the quantitative relationship it describes.
NC.M1.F-IF.6	Calculate and interpret the average rate of change over a specified interval for a function presented numerically, graphically, and/or symbolically.
<b>Interpreting Functions</b> <i>Analyze functions using different representations.</i>	
NC.M1.F-IF.7	Analyze linear, <b>exponential</b> , and quadratic functions by generating different representations, by hand in simple cases and using technology for more complicated cases, to show key features, including: domain and range; rate of change; intercepts; intervals where the function is increasing, decreasing, positive, or negative; maximums and minimums; and end behavior.
NC.M1.F-IF.8	Use equivalent expressions to reveal and explain different properties of a function.
NC.M1.F-IF.8b	b. Interpret and explain growth and decay rates for an exponential function.
NC.M1.F-IF.9	Compare key features of two functions ( <b>linear</b> , quadratic, or <b>exponential</b> ) each with a different representation (symbolically, graphically, numerically in tables, or by verbal descriptions).
<b>Building Functions</b> <i>Build a function that models a relationship between two quantities.</i>	
NC.M1.F-BF.1	Write a function that describes a relationship between two quantities.
NC.M1.F-BF.1a	a. Build linear and <b>exponential</b> functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two ordered pairs (include reading these from a table).

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NC.M1.F.BF.1b	b. Build a function that models a relationship between two quantities by combining <b>linear, exponential</b> , or quadratic functions <b>with addition and subtraction</b> or two linear functions with multiplication.
NC.M1.F.BF.2	Translate between explicit and recursive forms of arithmetic and <b>geometric sequences</b> and use both to model situations.
<b>Linear, Quadratic, and Exponential Models</b> <i>Construct and compare linear and exponential models and solve problems.</i>	
NC.M1.F.LE.1	Identify situations that can be modeled with linear and exponential functions, and justify the most appropriate model for a situation based on the rate of change over equal intervals.
NC.M1.F.LE.3	Compare the end behavior of <b>linear, exponential</b> , and quadratic functions using graphs and tables to show that a quantity increasing exponentially eventually exceeds a quantity increasing linearly or quadratically.
<b>Linear, Quadratic, and Exponential Models</b> <i>Interpret expressions for functions in terms of the situation they model.</i>	
NC.M1.F.LE.5	Interpret the parameters $a$ and $b$ in a linear function $f(x) = ax + b$ or an <b>exponential function</b> $g(x) = ab^x$ in terms of a context.
<b>Interpreting Categorical and Quantitative Data</b> <i>Summarize, represent, and interpret data on two categorical and quantitative variables.</i>	
NC.M1.S-ID.6	Represent data on two quantitative variables on a scatter plot, and describe how the variables are related.
NC.M1.S-ID.6c	c. Fit a function to exponential data using technology. Use the fitted function to solve problems.

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Quarter 2/Quarter 4*	
<b>Unit 5: Quadratic Functions</b>	<b># Days: 13</b>
<p><b>Concepts to Integrate: Apply all to real world applications.</b></p> <ul style="list-style-type: none"> <li>• Interpret the structure of quadratic expressions.</li> <li>• Write quadratic expressions in equivalent forms to solve problems.</li> <li>• Perform the arithmetic operations on polynomials.</li> <li>• Understand the relationship between zeros and factors of quadratics.</li> <li>• Create quadratic equations that describe numbers or relationships.</li> <li>• Understand solving quadratic equations as a process of reasoning and explain the reasoning.</li> <li>• Solve quadratic equations in one variable.</li> <li>• Represent and solve quadratic equations graphically.</li> <li>• Understand the concept of a quadratic function and use function notation.</li> <li>• Interpret quadratic functions that arise in applications in terms of the context.</li> <li>• Analyze quadratic functions using different representations.</li> <li>• Construct and compare linear, exponential and quadratic models and solve problems.</li> </ul>	
<b>SMPs: ALL</b>	
<b>Seeing Structure in Expressions</b> <i>Interpret the structure of expressions.</i>	
NC.M1.A-SSE.1	Interpret expressions that represent a quantity in terms of its context.
NC.M1.A-SSE.1a	a. Identify and interpret parts of a linear, exponential, or <b>quadratic</b> expression, including terms, factors, coefficients, and exponents.
NC.M1.A-SSE.1b	b. Interpret a linear, exponential, or <b>quadratic</b> expression made of multiple parts as a combination of entities to give meaning to an expression.
<b>Seeing Structure in Expressions</b> <i>Write expressions in equivalent forms to solve problems.</i>	
NC.M1.A-SSE.3	Write an equivalent form of a quadratic expression, $ax^2 + bx + c$ , where $a$ is an integer, by factoring to reveal the solutions of the equation or the zeros of the function the expression defines.
<b>Arithmetic with Polynomial Expressions</b> <i>Perform arithmetic operations on polynomials.</i>	
NC.M1.A-APR.1	Build an understanding that operations with polynomials are comparable to operations with integers by adding and subtracting quadratic expressions and by adding, subtracting, and multiplying linear expressions.
<b>Arithmetic with Polynomial Expressions</b>	

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<b><i>Understand the relationship between zeros and factors of polynomials.</i></b>	
NC.M1.A-APR.3	Understand the relationships among the factors of a quadratic expression, the solutions of a quadratic equation, and the zeros of a quadratic function.
<b>Creating Equations</b> <b><i>Create equations that describe numbers or relationships.</i></b>	
NC.M1.A-CED.2	Create and graph equations in two variables to represent linear, exponential, and quadratic relationships between quantities.
<b>Reasoning with Equations and Inequalities</b> <b><i>Understand solving equations as a process of reasoning and explain the reasoning.</i></b>	
NC.M1.A-REI.1	Justify a chosen solution method and each step of the solving process for linear and <b>quadratic</b> equations using mathematical reasoning.
<b>Reasoning with Equations and Inequalities</b> <b><i>Solve equations and inequalities in one variable.</i></b>	
NC.M1.A-REI.4	Solve for the real solutions of quadratic equations in one variable by taking square roots and factoring.
<b>Reasoning with Equations and Inequalities</b> <b><i>Represent and solve equations and inequalities graphically</i></b>	
NC.M1.A-REI.11	Build an understanding of why the $x$ -coordinates of the points where the graphs of two linear, exponential, and/or quadratic equations $y = (x)$ and $y = (x)$ intersect are the solutions of the equation $(x) = (x)$ and approximate solutions using graphing technology or successive approximations with a table of values.
<b>Interpreting Functions</b> <b><i>Understand the concept of a function and use function notation.</i></b>	
NC.M1.F-IF.2	Use function notation to evaluate linear, <b>quadratic</b> , and exponential functions for inputs in their domains, and interpret statements that use function notation in terms of a context.
<b>Interpreting Functions</b> <b><i>Interpret functions that arise in applications in terms of the context.</i></b>	
NC.M1.F-IF.4	Interpret key features of graphs, tables, and verbal descriptions in context to describe functions that arise in applications relating two quantities, including: intercepts; intervals where the function is increasing, decreasing, positive, or negative; and maximums and minimums.
NC.M1.F-IF.5	Interpret a function in terms of the context by relating its domain and range to its graph and, where applicable, to the quantitative relationship it describes.
NC.M1.F-IF.6	Calculate and interpret the average rate of change over a specified interval for a function presented numerically, graphically, and/or symbolically.
<b>Interpreting Functions</b> <b><i>Analyze functions using different representations.</i></b>	

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NC.M1.F-IF.7	Analyze linear, exponential, and quadratic functions by generating different representations, by hand in simple cases and using technology for more complicated cases, to show key features, including: domain and range; rate of change; intercepts; intervals where the function is increasing, decreasing, positive, or negative; maximums and minimums; and end behavior.
NC.M1.F-IF.8	Use equivalent expressions to reveal and explain different properties of a function.
NC.M1.F-IF.8a	a. Rewrite a quadratic function to reveal and explain different key features of the function
NC.M1.F-IF.9	Compare key features of two functions (linear, quadratic, or exponential) each with a different representation (symbolically, graphically, numerically in tables, or by verbal descriptions).
<b>Building Functions</b> <i>Build a function that models a relationship between two quantities.</i>	
NC.M1.F.BF.1	Write a function that describes a relationship between two quantities.
NC.M1.F.BF.1b	b. Build a function that models a relationship between two quantities by combining linear, exponential, or quadratic functions with addition and subtraction or two linear functions with multiplication.
<b>Linear, Quadratic, and Exponential Models</b> <i>Construct and compare linear and exponential models and solve problems.</i>	
NC.M1.F-LE.3	Compare the end behavior of linear, exponential, and quadratic functions using graphs and tables to show that a quantity increasing exponentially eventually exceeds a quantity increasing linearly or quadratically.

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Quarter 2/Quarter 4*	
<b>Unit 6: One-Variable Statistics</b>	<b># Days: 7</b>
<b>Review/Extension/EOC Exam</b>	<b># Days: 10</b>
<b>Concepts to Integrate: Apply all to real world applications.</b> <ul style="list-style-type: none"> <li>• Summarize, represent, and interpret data on a single count or measurement variable.</li> </ul>	
<b>SMPs: ALL</b>	
<b>Interpreting Categorical and Quantitative Data</b> <i>Summarize, represent, and interpret data on a single count or measurement variable.</i>	
NC.M1.S-ID.1	Use technology to represent data with plots on the real number line (histograms and box plots).
NC.M1.S-ID.2	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. Interpret differences in shape, center, and spread in the context of the data sets.
NC.M1.S-ID.3	Examine the effects of extreme data points (outliers) on shape, center, and/or spread.