Algebra I | New Jersey Student Learning Standards for Mathematics Correlation to *Eureka Math*®

About *Eureka Math*

Created by Great Minds®, a mission-driven Public Benefit Corporation, *Eureka Math*® helps teachers deliver unparalleled math instruction that provides students with a deep understanding and fluency in math. Crafted by teachers and math scholars, the curriculum carefully sequences the mathematical progressions to maximize coherence from Prekindergarten through Precalculus—a principle tested and proven to be essential in students' mastery of math.

Teachers and students using *Eureka Math* find the trademark "Aha!" moments in *Eureka Math* to be a source of joy and inspiration, lesson after lesson, year after year.

Aligned

Great Minds offers detailed analyses that demonstrate how each grade of *Eureka Math* aligns with specific state standards. Access these free alignment studies at greatminds.org/state-studies.

Data

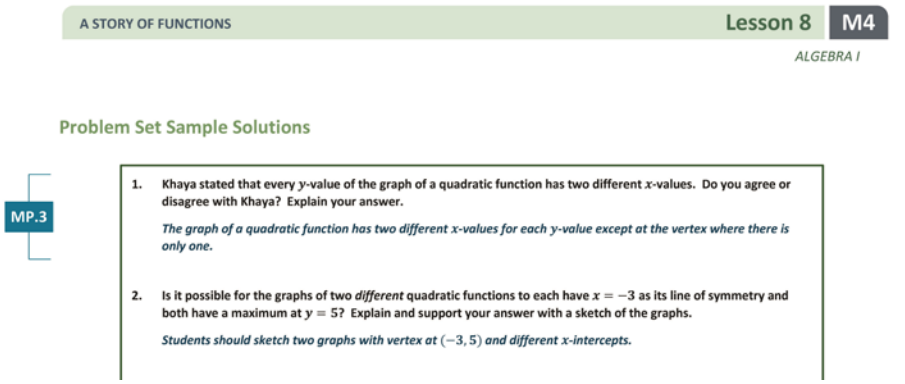
Schools and districts nationwide are experiencing student growth and impressive test scores after using *Eureka Math*. See their stories and data at greatminds.org/data.

Full Suite of Resources

Great Minds offers the *Eureka Math* curriculum as PDF downloads for free, noncommercial use. Access the free PDFs at greatminds.org/math/curriculum.

The teacher–writers who created the curriculum have also developed essential resources, available only from Great Minds, including the following:

- Printed material in English and Spanish
- Digital resources
- Professional development
- Classroom tools and manipulatives
- Teacher support materials
- Parent resources

Standards for Mathematical Practice	Aligned Components of *Eureka Math*
MP.1 Make sense of problems and persevere in solving them.	Lessons in every module engage students in mathematical practices. These are designated in the Module Overview and labeled in lessons. For example: 
MP.2 Reason abstractly and quantitatively.	
MP.3 Construct viable arguments and critique the reasoning of others.	
MP.4 Model with mathematics.	
MP.5 Use appropriate tools strategically.	
MP.6 Attend to precision.	
MP.7 Look for and make use of structure.	
MP.8 Look for and express regularity in repeated reasoning.	

Quantities

N.Q.A Reason quantitatively and use units to solve problems.

New Jersey Student Learning Standards for Mathematics	Aligned Components of *Eureka Math*
N.Q.A.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.	Algebra I M1 Topic A: Introduction to Functions Studied This Year—Graphing Stories Algebra I M1 Lesson 25: Solving Problems in Two Ways—Rates and Algebra Algebra I M1 Lesson 28: Federal Income Tax
N.Q.A.2 Define appropriate quantities for the purpose of descriptive modeling.	Algebra I M1 Topic A: Introduction to Functions Studied This Year—Graphing Stories Algebra I M5 Lesson 1: Analyzing a Graph Algebra I M5 Lesson 4: Modeling a Context from a Graph Algebra I M5 Lesson 7: Modeling a Context from Data Algebra I M5 Lesson 8: Modeling a Context from a Verbal Description Algebra I M5 Lesson 9: Modeling a Context from a Verbal Description
N.Q.A.3 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.	Algebra I M1 Topic A: Introduction to Functions Studied This Year—Graphing Stories Algebra I M5 Lesson 6: Modeling a Context from Data Algebra I M5 Lesson 7: Modeling a Context from Data Algebra I M5 Lesson 9: Modeling a Context from a Verbal Description

Creating Equations

A.CED.A Create equations that describe numbers or relationships.

New Jersey Student Learning Standards for Mathematics	Aligned Components of *Eureka Math*
A.CED.A.1 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.	Algebra I M1 Lesson 25: Solving Problems in Two Ways—Rates and Algebra Algebra I M1 Lesson 26: Recursive Challenge Problem—The Double and Add 5 Game Algebra I M1 Lesson 27: Recursive Challenge Problem—The Double and Add 5 Game Algebra I M4 Lesson 6: Solving Basic One-Variable Quadratic Equations Algebra I M4 Lesson 7: Creating and Solving Quadratic Equations in One Variable Algebra I M5 Lesson 6: Modeling a Context from Data Algebra I M5 Lesson 9: Modeling a Context from a Verbal Description
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.	Algebra I M1 Lesson 5: Two Graphing Stories Algebra I M1 Lesson 20: Solution Sets to Equations with Two Variables Algebra I M1 Lesson 23: Solution Sets to Simultaneous Equations Algebra I M1 Lesson 24: Applications of Systems of Equations and Inequalities Algebra I M1 Lesson 28: Federal Income Tax Algebra I M4 Lesson 9: Graphing Quadratic Functions from Factored Form, $f(x) = a(x - m)(x - n)$ Algebra I M4 Lesson 12: Completing the Square Algebra I M4 Lesson 16: Graphing Quadratic Equations from the Vertex Form, $y = a(x - h)^2 + k$ Algebra I M4 Lesson 23: Modeling with Quadratic Functions Algebra I M4 Lesson 24: Modeling with Quadratic Functions Algebra I M5 Topic A: Elements of Modeling Algebra I M5 Lesson 4: Modeling a Context from a Graph Algebra I M5 Lesson 5: Modeling from a Sequence Algebra I M5 Lesson 6: Modeling a Context from Data Algebra I M5 Lesson 8: Modeling a Context from a Verbal Description Algebra II M1 Lesson 1: Successive Differences in Polynomials

New Jersey Student Learning Standards for Mathematics	Aligned Components of *Eureka Math*
A.CED.A.3 Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or nonviable options in a modeling context.	Algebra I M1 Lesson 15: Solution Sets of Two or More Equations (or Inequalities) Joined by "And" or "Or" Algebra I M1 Lesson 20: Solution Sets to Equations with Two Variables Algebra I M1 Lesson 24: Applications of Systems of Equations and Inequalities Algebra I M1 Lesson 27: Recursive Challenge Problem—The Double and Add 5 Game Algebra I M3 Lesson 8: Why Stay with Whole Numbers? Algebra I M3 Lesson 24: Piecewise and Step Functions in Context
A.CED.A.4 Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations.	Algebra I M1 Lesson 19: Rearranging Formulas

Reasoning with Equations and Inequalities

A.REI.A Understand solving equations as a process of reasoning and explain the reasoning.

New Jersey Student Learning Standards for Mathematics	Aligned Components of *Eureka Math*
A.REI.A.1 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.	Algebra I M1 Lesson 12: Solving Equations Algebra I M1 Lesson 13: Some Potential Dangers When Solving Equations Algebra I M1 Lesson 17: Equations Involving Factored Expressions

Reasoning with Equations and Inequalities

A.REI.B Solve equations and inequalities in one variable.

New Jersey Student Learning Standards for Mathematics	Aligned Components of *Eureka Math*
A.REI.B.3 Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.	Algebra I M1 Lesson 10: True and False Equations Algebra I M1 Lesson 11: Solution Sets for Equations and Inequalities Algebra I M1 Lesson 12: Solving Equations Algebra I M1 Lesson 13: Some Potential Dangers When Solving Equations Algebra I M1 Lesson 14: Solving Inequalities Algebra I M1 Lesson 15: Solution Sets of Two or More Equations (or Inequalities) Joined by "And" or "Or" Algebra I M1 Lesson 16: Solving and Graphing Inequalities Joined by "And" or "Or" Algebra I M1 Lesson 17: Equations Involving Factored Expressions Algebra I M1 Lesson 19: Rearranging Formulas Algebra I M1 Lesson 25: Solving Problems in Two Ways—Rates and Algebra Algebra I M1 Lesson 27: Recursive Challenge Problem—The Double and Add 5 Game
A.REI.B.4 Solve quadratic equations in one variable.	*This standard is fully addressed by the lessons aligned to its subsections.*
A.REI.B.4.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.	Algebra I M4 Lesson 13: Solving Quadratic Equations by Completing the Square Algebra I M4 Lesson 14: Deriving the Quadratic Formula

New Jersey Student Learning Standards for Mathematics	Aligned Components of *Eureka Math*
A.REI.B.4.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.	Algebra I M4 Lesson 5: The Zero Product Property Algebra I M4 Lesson 6: Solving Basic One-Variable Quadratic Equations Algebra I M4 Lesson 7: Creating and Solving Quadratic Equations in One Variable Algebra I M4 Lesson 13: Solving Quadratic Equations by Completing the Square Algebra I M4 Lesson 15: Using the Quadratic Formula

Reasoning with Equations and Inequalities

A.REI.C Solve systems of equations.

New Jersey Student Learning Standards for Mathematics	Aligned Components of *Eureka Math*
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.	Algebra I M1 Lesson 23: Solution Sets to Simultaneous Equations
A.REI.C.6 Solve systems of linear equations algebraically (include using the elimination method) and graphically, focusing on pairs of linear equations in two variables.	Algebra I M1 Lesson 22: Solution Sets to Simultaneous Equations Algebra I M1 Lesson 23: Solution Sets to Simultaneous Equations Algebra I M1 Lesson 24: Applications of Systems of Equations and Inequalities Algebra I M4 Lesson 24: Modeling with Quadratic Functions

Reasoning with Equations and Inequalities

A.REI.D Represent and solve equations and inequalities graphically.

New Jersey Student Learning Standards for Mathematics	Aligned Components of *Eureka Math*
A.REI.D.10 Understand 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).	Algebra I M1 Lesson 20: Solution Sets to Equations with Two Variables Algebra II M1 Lesson 36: Overcoming a Third Obstacle to Factoring—What If There Are No Real Number Solutions?
A.REI.D.11 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.	Algebra I M3 Lesson 16: Graphs Can Solve Equations Too
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.	Algebra I M1 Lesson 21: Solution Sets to Inequalities with Two Variables Algebra I M1 Lesson 22: Solution Sets to Simultaneous Equations Algebra I M1 Lesson 24: Applications of Systems of Equations and Inequalities

Seeing Structure in Expressions

A.SSE.A Interpret the structure of expressions.

New Jersey Student Learning Standards for Mathematics	Aligned Components of *Eureka Math*
A.SSE.A.1 Interpret expressions that represent a quantity in terms of its context.	Algebra I M1 Lesson 26: Recursive Challenge Problem—The Double and Add 5 Game Algebra I M1 Lesson 27: Recursive Challenge Problem—The Double and Add 5 Game Algebra I M3 Lesson 4: Why Do Banks Pay YOU to Provide Their Services? Algebra I M3 Lesson 5: The Power of Exponential Growth Algebra I M3 Lesson 6: Exponential Growth—U.S. Population and World Population Algebra I M3 Lesson 7: Exponential Decay Algebra I M4 Lesson 1: Multiplying and Factoring Polynomial Expressions Algebra I M4 Lesson 2: Multiplying and Factoring Polynomial Expressions Algebra I M4 Lesson 3: Advanced Factoring Strategies for Quadratic Expressions Algebra I M4 Lesson 4: Advanced Factoring Strategies for Quadratic Expressions Algebra I M4 Lesson 6: Solving Basic One-Variable Quadratic Equations Algebra I M4 Lesson 12: Completing the Square Algebra I M4 Lesson 17: Graphing Quadratic Functions from the Standard Form, $f(x) = ax^2 + bx + c$
A.SSE.A.1.a Interpret parts of an expression, such as terms, factors, and coefficients.	Algebra I M4 Lesson 1: Multiplying and Factoring Polynomial Expressions Algebra I M4 Lesson 2: Multiplying and Factoring Polynomial Expressions Algebra I M4 Lesson 3: Advanced Factoring Strategies for Quadratic Expressions Algebra I M4 Lesson 4: Advanced Factoring Strategies for Quadratic Expressions

New Jersey Student Learning Standards for Mathematics	Aligned Components of *Eureka Math*
A.SSE.A.1.b Interpret complicated expressions by viewing one or more of their parts as a single entity.	Algebra I M3 Lesson 4: Why Do Banks Pay YOU to Provide Their Services? Algebra I M3 Lesson 5: The Power of Exponential Growth Algebra I M3 Lesson 6: Exponential Growth—U.S. Population and World Population Algebra I M3 Lesson 7: Exponential Decay Algebra I M4 Lesson 6: Solving Basic One-Variable Quadratic Equations Algebra I M4 Lesson 12: Completing the Square Algebra I M4 Lesson 17: Graphing Quadratic Functions from the Standard Form, $f(x) = ax^2 + bx + c$

Seeing Structure in Expressions

A.SSE.B Write expressions in equivalent forms to solve problems.

New Jersey Student Learning Standards for Mathematics	Aligned Components of *Eureka Math*
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.	*This standard is fully addressed by the lessons aligned to its subsections.*
A.SSE.B.3.a Factor a quadratic expression to reveal the zeros of the function it defines.	Algebra I M4 Lesson 9: Graphing Quadratic Functions from Factored Form, $f(x) = a(x - m)(x - n)$ Algebra I M4 Lesson 15: Using the Quadratic Formula Algebra II M1 Lesson 14: Graphing Factored Polynomials

New Jersey Student Learning Standards for Mathematics	Aligned Components of *Eureka Math*
A.SSE.B.3.b Complete the square in a quadratic expression to reveal the maximum or minimum value of the function it defines.	Algebra I M4 Lesson 11: Completing the Square Algebra I M4 Lesson 12: Completing the Square Algebra I M4 Lesson 17: Graphing Quadratic Functions from the Standard Form, $f(x) = ax^2 + bx + c$
A.SSE.B.3.c Use the properties of exponents to transform expressions for exponential functions.	Algebra I M3 Lesson 23: Newton's Law of Cooling

Building Functions

F.BF.A Build a function that models a relationship between two quantities.

New Jersey Student Learning Standards for Mathematics	Aligned Components of *Eureka Math*
F.BF.A.1 Write a function that describes a relationship between two quantities.	*This standard is fully addressed by the lessons aligned to its subsection.*
F.BF.A.1.a Determine an explicit expression, a recursive process, or steps for calculation from a context.	Algebra I M3 Topic A: Linear and Exponential Sequences Algebra I M3 Topic D: Using Functions and Graphs to Solve Problems Algebra I M5 Topic A: Elements of Modeling Algebra I M5 Lesson 5: Modeling from a Sequence Algebra I M5 Lesson 6: Modeling a Context from Data Algebra I M5 Lesson 7: Modeling a Context from Data Algebra I M5 Lesson 8: Modeling a Context from a Verbal Description Algebra I M5 Lesson 9: Modeling a Context from a Verbal Description

Building Functions

F.BF.B Build new functions from existing functions.

New Jersey Student Learning Standards for Mathematics	Aligned Components of *Eureka Math*
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.	Algebra I M3 Lesson 17: Four Interesting Transformations of Functions Algebra I M3 Lesson 18: Four Interesting Transformations of Functions Algebra I M3 Lesson 19: Four Interesting Transformations of Functions Algebra I M3 Lesson 20: Four Interesting Transformations of Functions Algebra I M4 Lesson 19: Translating Graphs of Functions Algebra I M4 Lesson 20: Stretching and Shrinking Graphs of Functions Algebra I M4 Lesson 21: Transformations of the Quadratic Parent Function, $f(x) = x^2$

Interpreting Functions

F.IF.A Understand the concept of a function and use function notation.

New Jersey Student Learning Standards for Mathematics	Aligned Components of *Eureka Math*
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 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 $y = f(x)$.	Algebra I M3 Lesson 1: Integer Sequences—Should You Believe in Patterns? Algebra I M3 Lesson 9: Representing, Naming, and Evaluating Functions Algebra I M3 Lesson 10: Representing, Naming, and Evaluating Functions Algebra I M3 Lesson 11: The Graph of a Function Algebra I M3 Lesson 12: The Graph of the Equation $y = f(x)$

New Jersey Student Learning Standards for Mathematics	Aligned Components of *Eureka Math*
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.	Algebra I M3 Topic A: Linear and Exponential Sequences Algebra I M3 Lesson 8: Why Stay with Whole Numbers? Algebra I M3 Lesson 9: Representing, Naming, and Evaluating Functions Algebra I M3 Lesson 10: Representing, Naming, and Evaluating Functions Algebra I M3 Lesson 11: The Graph of a Function
F.IF.A.3 Recognize that sequences are functions, sometimes defined recursively, whose domain is a subset of the integers.	Algebra I M3 Lesson 2: Recursive Formulas for Sequences Algebra I M3 Lesson 3: Arithmetic and Geometric Sequences Algebra I M3 Lesson 4: Why Do Banks Pay YOU to Provide Their Services?

Interpreting Functions

F.IF.B Interpret functions that arise in applications in terms of the context.

New Jersey Student Learning Standards for Mathematics	Aligned Components of *Eureka Math*
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.	Algebra I M3 Lesson 13: Interpreting the Graph of a Function Algebra I M3 Lesson 14: Linear and Exponential Models—Comparing Growth Rates Algebra I M3 Lesson 23: Newton's Law of Cooling Algebra I M4 Lesson 8: Exploring the Symmetry in Graphs of Quadratic Functions Algebra I M4 Lesson 9: Graphing Quadratic Functions from Factored Form, $f(x) = a(x - m)(x - n)$ Algebra I M4 Lesson 10: Interpreting Quadratic Functions from Graphs and Tables Algebra I M4 Lesson 17: Graphing Quadratic Functions from the Standard Form, $f(x) = ax^2 + bx + c$ Algebra I M4 Lesson 22: Comparing Quadratic, Square Root, and Cube Root Functions Represented in Different Ways

New Jersey Student Learning Standards for Mathematics	Aligned Components of *Eureka Math*
F.IF.B.4 ***continued***	Algebra I M5 Lesson 2: Analyzing a Data Set Algebra I M5 Lesson 4: Modeling a Context from a Graph Algebra I M5 Lesson 6: Modeling a Context from Data Algebra I M5 Lesson 7: Modeling a Context from Data
F.IF.B.5 Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes.	Algebra I M3 Lesson 8: Why Stay with Whole Numbers? Algebra I M3 Lesson 9: Representing, Naming, and Evaluating Functions Algebra I M3 Lesson 10: Representing, Naming, and Evaluating Functions Algebra I M3 Lesson 11: The Graph of a Function Algebra I M3 Lesson 12: The Graph of the Equation $y = f(x)$ Algebra I M4 Lesson 9: Graphing Quadratic Functions from Factored Form, $f(x) = a(x - m)(x - n)$ Algebra I M5 Lesson 1: Analyzing a Graph Algebra I M5 Lesson 4: Modeling a Context from 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.	Algebra I M3 Lesson 6: Exponential Growth—U.S. Population and World Population Algebra I M3 Lesson 21: Comparing Linear and Exponential Models Again Algebra I M3 Lesson 22: Modeling an Invasive Species Population Algebra I M4 Lesson 8: Exploring the Symmetry in Graphs of Quadratic Functions Algebra I M4 Lesson 10: Interpreting Quadratic Functions from Graphs and Tables Algebra I M4 Lesson 17: Graphing Quadratic Functions from the Standard Form, $f(x) = ax^2 + bx + c$ Algebra I M4 Lesson 22: Comparing Quadratic, Square Root, and Cube Root Functions Represented in Different Ways Algebra I M5 Lesson 4: Modeling a Context from a Graph

Interpreting Functions

F.IF.C Analyze functions using different representations.

New Jersey Student Learning Standards for Mathematics	Aligned Components of *Eureka Math*
F.IF.C.7 Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases.	Algebra I M3 Lesson 11: The Graph of a Function Algebra I M3 Lesson 12: The Graph of the Equation $y = f(x)$ Algebra I M3 Topic C: Transformations of Functions Algebra I M4 Lesson 8: Exploring the Symmetry in Graphs of Quadratic Functions Algebra I M4 Lesson 9: Graphing Quadratic Functions from Factored Form, $f(x) = a(x - m)(x - n)$ Algebra I M4 Lesson 16: Graphing Quadratic Equations from the Vertex Form, $y = a(x - h)^2 + k$ Algebra I M4 Lesson 17: Graphing Quadratic Functions from the Standard Form, $f(x) = ax^2 + bx + c$ Algebra I M4 Lesson 18: Graphing Cubic, Square Root, and Cube Root Functions Algebra I M4 Lesson 19: Translating Graphs of Functions Algebra I M4 Lesson 20: Stretching and Shrinking Graphs of Functions Algebra I M4 Lesson 21: Transformations of the Quadratic Parent Function, $f(x) = x^2$ Algebra I M4 Lesson 23: Modeling with Quadratic Functions
F.IF.C.7.a Graph linear and quadratic functions and show intercepts, maxima, and minima.	Algebra I M3 Lesson 11: The Graph of a Function Algebra I M3 Lesson 12: The Graph of the Equation $y = f(x)$ Algebra I M3 Lesson 16: Graphs Can Solve Equations Too Algebra I M3 Lesson 19: Four Interesting Transformations of Functions Algebra I M4 Lesson 8: Exploring the Symmetry in Graphs of Quadratic Functions Algebra I M4 Lesson 9: Graphing Quadratic Functions from Factored Form, $f(x) = a(x - m)(x - n)$ Algebra I M4 Lesson 16: Graphing Quadratic Equations from the Vertex Form, $y = a(x - h)^2 + k$ Algebra I M4 Lesson 17: Graphing Quadratic Functions from the Standard Form, $f(x) = ax^2 + bx + c$ Algebra I M4 Lesson 19: Translating Graphs of Functions

New Jersey Student Learning Standards for Mathematics	Aligned Components of *Eureka Math*
F.IF.C.7.a *continued*	Algebra I M4 Lesson 20: Stretching and Shrinking Graphs of Functions Algebra I M4 Lesson 21: Transformations of the Quadratic Parent Function, $f(x) = x^2$ Algebra I M4 Lesson 23: Modeling with Quadratic Functions
F.IF.C.7.b Graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions.	Algebra I M3 Lesson 15: Piecewise Functions Algebra I M3 Lesson 17: Four Interesting Transformations of Functions Algebra I M3 Lesson 18: Four Interesting Transformations of Functions Algebra I M3 Lesson 20: Four Interesting Transformations of Functions Algebra I M4 Lesson 19: Translating Graphs of Functions Algebra I M4 Lesson 20: Stretching and Shrinking Graphs of Functions
F.IF.C.7.e Graph exponential and logarithmic functions, showing intercepts and end behavior.	Algebra I M3 Lesson 21: Comparing Linear and Exponential Models Again Algebra I M3 Lesson 22: Modeling an Invasive Species Population Algebra I M3 Lesson 23: Newton's Law of Cooling
F.IF.C.8 Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function.	*This standard is fully addressed by the lessons aligned to its subsection.*

New Jersey Student Learning Standards for Mathematics	Aligned Components of *Eureka Math*
F.IF.C.8.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.	Algebra I M4 Lesson 9: Graphing Quadratic Functions from Factored Form, $f(x) = a(x - m)(x - n)$ Algebra I M4 Lesson 12: Completing the Square Algebra I M4 Lesson 15: Using the Quadratic Formula Algebra I M4 Lesson 16: Graphing Quadratic Equations from the Vertex Form, $y = a(x - h)^2 + k$ Algebra I M4 Lesson 17: Graphing Quadratic Functions from the Standard Form, $f(x) = ax^2 + bx + c$ Algebra I M4 Lesson 21: Transformations of the Quadratic Parent Function, $f(x) = x^2$ Algebra I M4 Lesson 23: Modeling with Quadratic Functions
F.IF.C.9 Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions).	Algebra I M4 Lesson 22: Comparing Quadratic, Square Root, and Cube Root Functions Represented in Different Ways

Linear and Exponential Models

F.LE.A Construct and compare linear and exponential models and solve problems.

New Jersey Student Learning Standards for Mathematics	Aligned Components of *Eureka Math*
F.LE.A.1 Distinguish between situations that can be modeled with linear functions and with exponential functions.	Algebra I M3 Lesson 5: The Power of Exponential Growth Algebra I M3 Lesson 6: Exponential Growth—U.S. Population and World Population Algebra I M3 Lesson 14: Linear and Exponential Models—Comparing Growth Rates Algebra I M5 Lesson 2: Analyzing a Data Set Algebra I M5 Lesson 3: Analyzing a Verbal Description Algebra I M5 Lesson 5: Modeling from a Sequence Algebra I M5 Lesson 6: Modeling a Context from Data Algebra I M5 Lesson 8: Modeling a Context from a Verbal Description Algebra II M3 Lesson 27: Modeling with Exponential Functions
F.LE.A.1.a Prove that linear functions grow by equal differences over equal intervals, and that exponential functions grow by equal factors over equal intervals.	Algebra I M3 Lesson 14: Linear and Exponential Models—Comparing Growth Rates
F.LE.A.1.b Recognize situations in which one quantity changes at a constant rate per unit interval relative to another.	Algebra I M5 Lesson 2: Analyzing a Data Set Algebra I M5 Lesson 3: Analyzing a Verbal Description Algebra I M5 Lesson 5: Modeling from a Sequence Algebra I M5 Lesson 6: Modeling a Context from Data

New Jersey Student Learning Standards for Mathematics	Aligned Components of *Eureka Math*
F.LE.A.1.c Recognize situations in which a quantity grows or decays by a constant percent rate per unit interval relative to another.	Algebra I M5 Lesson 2: Analyzing a Data Set Algebra I M5 Lesson 3: Analyzing a Verbal Description Algebra I M5 Lesson 5: Modeling from a Sequence Algebra I M5 Lesson 6: Modeling a Context from Data Algebra I M5 Lesson 8: Modeling a Context from a Verbal Description
F.LE.A.2 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).	Algebra I M3 Lesson 3: Arithmetic and Geometric Sequences Algebra I M3 Lesson 4: Why Do Banks Pay YOU to Provide Their Services? Algebra I M3 Lesson 5: The Power of Exponential Growth Algebra I M3 Lesson 6: Exponential Growth—U.S. Population and World Population Algebra I M3 Lesson 7: Exponential Decay Algebra I M3 Lesson 14: Linear and Exponential Models—Comparing Growth Rates Algebra I M3 Lesson 21: Comparing Linear and Exponential Models Again Algebra I M3 Lesson 22: Modeling an Invasive Species Population Algebra I M3 Lesson 23: Newton's Law of Cooling Algebra I M5 Lesson 2: Analyzing a Data Set Algebra I M5 Lesson 3: Analyzing a Verbal Description Algebra I M5 Lesson 5: Modeling from a Sequence Algebra I M5 Lesson 6: Modeling a Context from Data Algebra I M5 Lesson 8: Modeling a Context from a Verbal Description Algebra I M5 Lesson 9: Modeling a Context from a Verbal Description

New Jersey Student Learning Standards for Mathematics	Aligned Components of *Eureka Math*
F.LE.A.3 Observe using graphs and tables that a quantity increasing exponentially eventually exceeds a quantity increasing linearly, quadratically, or (more generally) as a polynomial function.	Algebra I M3 Lesson 5: The Power of Exponential Growth Algebra I M3 Lesson 6: Exponential Growth—U.S. Population and World Population Algebra I M3 Lesson 14: Linear and Exponential Models—Comparing Growth Rates Algebra I M3 Lesson 21: Comparing Linear and Exponential Models Again

Linear and Exponential Models

F.LE.B Interpret expressions for functions in terms of the situation they model.

New Jersey Student Learning Standards for Mathematics	Aligned Components of *Eureka Math*
F.LE.B.5 Interpret the parameters in a linear or exponential function in terms of a context.	Algebra I M3 Lesson 21: Comparing Linear and Exponential Models Again Algebra I M3 Lesson 22: Modeling an Invasive Species Population

Interpreting Categorical and Quantitative Data

S.ID.A Summarize, represent, and interpret data on a single count or measurement variable.

New Jersey Student Learning Standards for Mathematics	Aligned Components of *Eureka Math*
S.ID.A.1 Represent data with plots on the real number line (dot plots, histograms, and box plots).	Algebra I M2 Topic A: Shapes and Centers of Distributions Algebra I M2 Topic B: Describing Variability and Comparing Distributions

New Jersey Student Learning Standards for Mathematics	Aligned Components of *Eureka Math*
S.ID.A.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.	Algebra I M2 Lesson 3: Estimating Centers and Interpreting the Mean as a Balance Point Algebra I M2 Lesson 4: Summarizing Deviations from the Mean Algebra I M2 Lesson 5: Measuring Variability for Symmetrical Distributions Algebra I M2 Lesson 6: Interpreting the Standard Deviation
S.ID.A.3 Interpret differences in shape, center, and spread in the context of the data sets, accounting for possible effects of extreme data points (outliers).	Algebra I M2 Lesson 2: Describing the Center of a Distribution Algebra I M2 Lesson 3: Estimating Centers and Interpreting the Mean as a Balance Point Algebra I M2 Topic B: Describing Variability and Comparing Distributions

Interpreting Categorical and Quantitative Data

S.ID.B Summarize, represent, and interpret data on two categorical and quantitative variables.

New Jersey Student Learning Standards for Mathematics	Aligned Components of *Eureka Math*
S.ID.B.6 Represent data on two quantitative variables on a scatter plot and describe how the variables are related.	Algebra I M2 Topic D: Numerical Data on Two Variables Algebra I M5 Lesson 7: Modeling a Context from Data

New Jersey Student Learning Standards for Mathematics	Aligned Components of *Eureka Math*
S.ID.B.6.a Fit a function to the data (including with the use of technology); 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.	Algebra I M2 Lesson 12: Relationships Between Two Numerical Variables Algebra I M2 Lesson 13: Relationships Between Two Numerical Variables Algebra I M2 Lesson 19: Interpreting Correlation Algebra I M5 Lesson 7: Modeling a Context from Data
S.ID.B.6.b Informally assess the fit of a function by plotting and analyzing residuals, including with the use of technology.	Algebra I M2 Lesson 14: Modeling Relationships with a Line Algebra I M2 Lesson 15: Interpreting Residuals from a Line Algebra I M2 Lesson 16: More on Modeling Relationships with a Line Algebra I M2 Lesson 17: Analyzing Residuals Algebra I M2 Lesson 18: Analyzing Residuals
S.ID.B.6.c Fit a linear function for a scatter plot that suggests a linear association.	Algebra I M2 Lesson 18: Analyzing Residuals Algebra I M2 Lesson 19: Interpreting Correlation Algebra I M5 Lesson 7: Modeling a Context from Data

Interpreting Categorical and Quantitative Data

S.ID.C Interpret linear models.

New Jersey Student Learning Standards for Mathematics	Aligned Components of *Eureka Math*
S.ID.C.7 Interpret the slope (rate of change) and the intercept (constant term) of a linear model in the context of the data.	Algebra I M2 Lesson 14: Modeling Relationships with a Line
S.ID.C.8 Compute (using technology) and interpret the correlation coefficient of a linear fit.	Algebra I M2 Lesson 19: Interpreting Correlation Algebra I M2 Lesson 20: Analyzing Data Collected on Two Variables Algebra I M5 Lesson 7: Modeling a Context from Data
S.ID.C.9 Distinguish between correlation and causation.	Algebra I M2 Lesson 11: Conditional Relative Frequencies and Association Algebra I M2 Lesson 19: Interpreting Correlation Algebra I M2 Lesson 20: Analyzing Data Collected on Two Variables