Algebra I | West Virginia College- and Career-Readiness 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

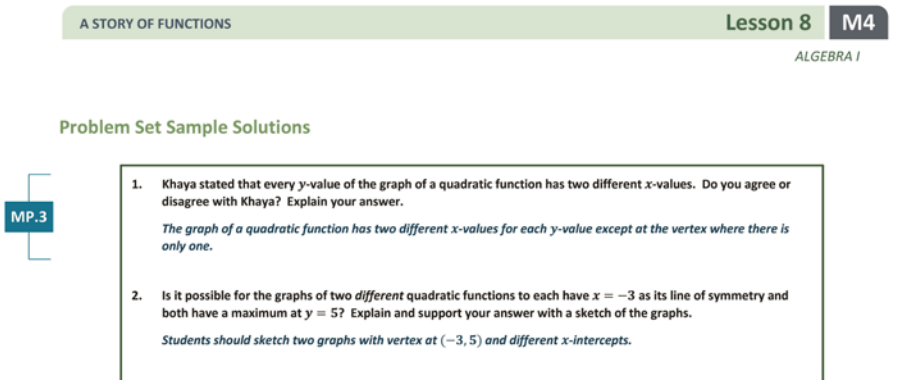
Schools and districts nationwide are experiencing student growth and impressive test scores after using *Eureka Math*. See their stories and data at greatminds.org/data.

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

Mathematical Habits of Mind	Aligned Components of *Eureka Math*
MHM.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: 
MHM.2 Reason abstractly and quantitatively.	
MHM.3 Construct viable arguments and critique the reasoning of others.	
MHM.4 Model with mathematics.	
MHM.5 Use appropriate tools strategically.	
MHM.6 Attend to precision.	
MHM.7 Look for and make use of structure.	
MHM.8 Look for and express regularity in repeated reasoning.	

Expressions and Equations

Interpret the structure of expressions and equations in terms of the context they model.

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.A1HS.1 Interpret linear, exponential, and quadratic 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, $f(x) = ax^2 + bx + c$
M.A1HS.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

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.A1HS.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, $f(x) = ax^2 + bx + c$
M.A1HS.1.c Interpret the parameters in a linear function or exponential function of the form $f(x) = a*b^x$ 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
M.A1HS.2 Use the structure of quadratic and exponential expressions to identify ways to rewrite them.	G8 M1 Topic A: Exponential Notation and Properties of Integer Exponents Algebra I M1 Lesson 6: Algebraic Expressions—The Distributive Property Algebra I M1 Lesson 7: Algebraic Expressions—The Commutative and Associative Properties Algebra I M1 Lesson 17: Equations Involving Factored Expressions Algebra I M3 Lesson 23: Newton's Law of Cooling 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 5: The Zero Product Property Algebra I M4 Lesson 11: Completing the Square Algebra I M4 Lesson 12: Completing the Square

Expressions and Equations

Extend the properties of exponents to rational exponents.

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.A1HS.3 Explain the connections between expressions with rational exponents and expressions with radicals using properties of exponents. Extend from application of properties of exponents for expressions with integer exponents.	Algebra II M3 Lesson 1: Integer Exponents Algebra II M3 Lesson 3: Rational Exponents Algebra II M3 Lesson 4: Properties of Exponents and Radicals
M.A1HS.4 Rewrite expressions involving radicals, including simplifying, and rational exponents using the properties of exponents.	Algebra II M3 Lesson 1: Integer Exponents Algebra II M3 Lesson 3: Rational Exponents Algebra II M3 Lesson 4: Properties of Exponents and Radicals

Expressions and Equations

Write expressions in equivalent forms to solve problems.

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.A1HS.5 Choose and produce an equivalent form of linear, exponential, and quadratic expressions to reveal and explain properties of the quantity represented by the expression through connections to a graphical representation of the function.	G8 M4 Lesson 21: Some Facts About Graphs of Linear Equations in Two Variables G8 M5 Lesson 6: Graphs of Linear Functions and Rate of Change Algebra I M3 Lesson 23: Newton's Law of Cooling Algebra I M4 Lesson 9: Graphing Quadratic Functions from Factored Form, $f(x) = a(x - m)(x - n)$ Algebra I M4 Lesson 11: Completing the Square 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, $f(x) = ax^2 + bx + c$
M.A1HS.5.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
M.A1HS.5.b Complete the square in a quadratic expression, when $a = 1$ only, 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, $f(x) = ax^2 + bx + c$

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.A1HS.5.c Use the properties of exponents to transform expressions in exponential functions. For example, the expression $1.15t$ can be rewritten as $(1.15^{\frac{1}{12}})^{12t} \approx 1.012^{12t}$ to reveal the approximate equivalent monthly interest rate if the annual rate is 15%.	Algebra I M3 Lesson 23: Newton's Law of Cooling

Expressions and Equations

Perform arithmetic operations on polynomials.

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.A1HS.6 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. Focus on linear or quadratic terms.	Algebra I M1 Lesson 8: Adding and Subtracting Polynomials Algebra I M1 Lesson 9: Multiplying Polynomials 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

Expressions and Equations

Create equations that describe numbers or relationships.

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.A1HS.7 Create equations and inequalities in one variable, representing linear and exponential relationships, and use them to solve problems. In the case of exponential equations, limit to situations with integer inputs.	Algebra I M1 Lesson 18: Equations Involving a Variable Expression in the Denominator 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 Algebra II M3 Lesson 7: Bacteria and Exponential Growth Algebra II M3 Lesson 26: Percent Rate of Change Algebra II M3 Lesson 27: Modeling with Exponential Functions
M.A1HS.8 Create equations in two or more variables, representing linear and exponential relationships between quantities. In the case of exponential equations, limit to situations with integer inputs.	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 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

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.A1HS.9 Represent constraints by linear equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or non-viable 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 21: Solution Sets to Inequalities 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

Expressions and Equations

Solve equations and inequalities in one variable.

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.A1HS.10 Solve linear equations including equations with coefficients represented by letters, simple exponential equations that rely on application of the laws of exponents, and compound linear inequalities in one variable.	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 18: Equations Involving a Variable Expression in the Denominator Algebra I M1 Lesson 19: Rearranging Formulas

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.A1HS.10 ***continued***	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 Algebra II M3 Lesson 7: Bacteria and Exponential Growth
M.A1HS.11 Solve quadratic equations in one variable by inspection (e.g., for $x^2 = 49$), taking square roots, factoring, completing the square when $a = 1$ only, and the quadratic formula, as appropriate for the initial form of the equation.	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 14: Deriving the Quadratic Formula Algebra I M4 Lesson 15: Using the Quadratic Formula
M.A1HS.11.a Recognize the concept of complex solutions when the quadratic formula gives complex solutions.	Algebra II M1 Lesson 37: A Surprising Boost from Geometry Algebra II M1 Lesson 38: Complex Numbers as Solutions to Equations
M.A1HS.11.b Use the method of completing the square to transform any quadratic equation in x into an equation of the form $(x - p)^2 = q$. Derive the quadratic formula from this method of completing the square.	Algebra I M4 Lesson 13: Solving Quadratic Equations by Completing the Square Algebra I M4 Lesson 14: Deriving the Quadratic Formula

Expressions and Equations

Solve systems of equations.

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.A1HS.12 Analyze and solve pairs of simultaneous linear equations.	G8 M4 Topic D: Systems of Linear Equations and Their Solutions G8 M4 Topic E: Pythagorean Theorem 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
M.A1HS.12.a Understand that solutions to a system of two linear equations in two variables correspond to points of intersection of their graphs, because points of intersection satisfy both equations simultaneously.	G8 M4 Lesson 24: Introduction to Simultaneous Equations G8 M4 Lesson 25: Geometric Interpretation of the Solutions of a Linear System
M.A1HS.12.b Solve simple cases by inspection (e.g., $3x + 2y = 5$ and $3x + 2y = 6$ have no solution because $3x + 2y$ cannot simultaneously be 5 and 6).	G8 M4 Lesson 26: Characterization of Parallel Lines G8 M4 Lesson 27: Nature of Solutions of a System of Linear Equations

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.A1HS.12.c Solve real-word and mathematical problems leading to two linear equations in two variables (e.g., given coordinates for two pairs of points, determine whether the line through the first pair of points intersects the line through the second pair).	G8 M4 Lesson 29: Word Problems G8 M4 Lesson 30: Conversion Between Celsius and Fahrenheit Algebra I M1 Lesson 24: Applications of Systems of Equations and Inequalities
M.A1HS.13 Understand and demonstrate ways to manipulate a system of two equations in two variables while preserving its solution set.	G8 M4 Lesson 28: Another Computational Method of Solving a Linear System Algebra I M1 Lesson 23: Solution Sets to Simultaneous Equations
M.A1HS.14 Solve systems of linear equations exactly and approximately (e.g., with graphs), focusing on pairs of linear equations in two variables. Include examples of solution sets with no solutions, an infinite number of solutions, and one solution.	G8 M4 Topic D: Systems of Linear Equations and Their Solutions 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
M.A1HS.15 Solve a simple system consisting of a linear equation and a quadratic equation in two variables graphically.	Algebra II M1 Lesson 31: Systems of Equations Algebra II M1 Lesson 32: Graphing Systems of Equations

Expressions and Equations

Represent and solve equations and inequalities graphically.

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.A1HS.16 Recognize that the graph of a linear or exponential equation in two variables is the set of all its solutions plotted in the coordinate plane.	Algebra I M1 Lesson 20: Solution Sets to Equations with Two Variables
M.A1HS.17 Explain why the x-coordinates of the points where the graphs of the linear and/or exponential 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).	Algebra I M3 Lesson 16: Graphs Can Solve Equations Too
M.A1HS.18 Graph the solutions of a linear inequality in two variables as a half-plane 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

Functions

Understand the concept of a function and use function notation.

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.A1HS.19 Use multiple representations of linear and exponential functions to 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. Develop function notation utilizing the definition of a function to represent situations both algebraically and graphically.	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 $y = f(x)$
M.A1HS.20 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
M.A1HS.21 Recognize arithmetic and geometric sequences are functions, sometimes defined recursively, whose domain is a subset of the integers (e.g., the Fibonacci sequence is defined recursively by $f(0) = f(1) = 1$, $f(n + 1) = f(n) + f(n - 1)$ for $n \geq 1$).	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?

Functions

Interpret functions that arise in applications in terms of a context.

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.A1HS.22 For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of quantities, and sketch graphs showing key features given a verbal description of the relationship. Relate the domain of a function to its linear, exponential, and quadratic graphs and, where applicable, to the quantitative relationship it describes.	Algebra I M1 Lesson 2: Graphs of Quadratic Functions 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 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 22: Modeling an Invasive Species Population 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 M5 Lesson 1: Analyzing a Graph 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

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.A1HS.22.a Key features of linear and exponential graphs include: intercepts; and intervals where the function is increasing, decreasing, positive, or negative.	Algebra I M1 Lesson 3: Graphs of Exponential Functions Algebra I M3 Lesson 14: Linear and Exponential Models—Comparing Growth Rates Algebra I M3 Lesson 23: Newton's Law of Cooling Algebra I M5 Lesson 1: Analyzing a Graph 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
M.A1HS.22.b Key features of quadratic graphs include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximum or minimum; symmetry; and end behavior.	Algebra I M1 Lesson 2: Graphs of Quadratic 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 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 M5 Lesson 1: Analyzing a Graph 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

Functions

Analyze functions using different representations.

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.A1HS.23 Graph linear, exponential, and quadratic functions expressed symbolically and show key features of the graph.	*This standard is fully addressed by the lessons aligned to its subsections.*
M.A1HS.23.a For linear functions, focus on intercepts.	G8 M5 Lesson 6: Graphs of Linear Functions and Rate of Change 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
M.A1HS.23.b For exponential functions, focus on intercepts and end behavior.	Algebra I M1 Lesson 3: Graphs of Exponential 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 M3 Lesson 16: Graphs Can Solve Equations Too Algebra I M5 Lesson 1: Analyzing a Graph Algebra I M5 Lesson 4: Modeling a Context from a Graph
M.A1HS.23.c For quadratic functions, focus on intercepts, maxima, minima, end behavior, and the relationship between coefficients and roots to represent in factored form.	Algebra I M1 Lesson 2: Graphs of Quadratic 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 23: Modeling with Quadratic Functions

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.A1HS.24 Compare properties of two linear, exponential, or quadratic functions each represented in a different way, such as algebraically, graphically, numerically in tables, or from verbal descriptions.	Algebra I M3 Lesson 14: Linear and Exponential Models—Comparing Growth Rates Algebra I M3 Lesson 21: Comparing Linear and Exponential Models Again *Supplemental material is necessary to fully address this standard.*
M.A1HS.25 Write a function defined by a linear, exponential, or quadratic expression in different but equivalent forms to reveal and explain different properties of the function.	G8 M5 Lesson 6: Graphs of Linear Functions and Rate of Change Algebra I M3 Lesson 23: Newton's Law of Cooling 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, $f(x) = ax^2 + bx + c$
M.A1HS.25.a Use the process of factoring and completing the square for $a = 1$ only in a quadratic function to show zeros, extreme values, symmetry of the graph, the relationship between coefficients and roots represented in factored form and interpret these in terms of a context.	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 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 17: Graphing Quadratic Functions from the Standard Form, $f(x) = ax^2 + bx + c$
M.A1HS.25.b Use the properties of exponents to interpret expressions in exponential functions.	Algebra I M3 Lesson 23: Newton's Law of Cooling Algebra II M3 Lesson 23: Bean Counting

Functions

Build a function that models a relationship between two quantities.

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.A1HS.26 Write linear, exponential, and quadratic functions that describe a relationship between two quantities.	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 Algebra II M3 Lesson 7: Bacteria and Exponential Growth
M.A1HS.26.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
M.A1HS.26.b Combine standard function types using arithmetic operations.	Algebra I M3 Lesson 23: Newton's Law of Cooling

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.A1HS.27 Construct linear and exponential functions, including arithmetic and geometric sequences to model situations, given a graph, a description of a relationship or given input-output pairs (include reading these from a table).	Algebra I M3 Topic A: Linear and Exponential Sequences 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 Topic A: Elements of Modeling Algebra I M5 Topic B: Completing the Modeling Cycle

Functions

Build new functions from existing functions.

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.A1HS.28 Identify the effect on the graphs of linear and exponential functions, $f(x)$, with $f(x) + k$, and the graphs of quadratic functions, $g(x)$, with $g(x) + k$, $kg(x)$, $g(kx)$, and $g(x + k)$ 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

Functions

Construct and compare linear, quadratic, and exponential models and solve problems.

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.A1HS.29 Distinguish between situations that can be modeled with linear functions, with exponential functions, and with quadratic 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 Topic A: Elements of Modeling Algebra I M5 Topic B: Completing the Modeling Cycle
M.A1HS.29.a Prove that linear functions grow by equal differences over equal intervals; exponential functions grow by equal factors over equal intervals.	Algebra I M3 Lesson 14: Linear and Exponential Models—Comparing Growth Rates
M.A1HS.29.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
M.A1HS.29.c Recognize situations in which a quantity grows or decays by a constant percent rate per unit interval relative to another.	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 M5 Lesson 2: Analyzing a Data Set Algebra I M5 Lesson 3: Analyzing a Verbal Description

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.A1HS.29.c *continued*	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
M.A1HS.29.d Observe using graphs and tables that a quantity increasing exponentially eventually exceeds a quantity increasing linearly or quadratically. Extend the comparison of linear and exponential growth to quadratic growth.	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

Geometry

Use coordinates to prove simple geometric theorems algebraically.

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.A1HS.30 Prove the slope criteria for parallel and perpendicular lines and use the slope criteria to solve geometric problems (e.g., find the equation of a line parallel or perpendicular to a given line that passes through a given point).	Geometry M4 Lesson 4: Designing a Search Robot to Find a Beacon Geometry M4 Topic B: Perpendicular and Parallel Lines in the Cartesian Plane

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.A1HS.31 Use coordinates to compute perimeters of polygons and areas of triangles and rectangles.	Geometry M4 Lesson 2: Finding Systems of Inequalities That Describe Triangular and Rectangular Regions Geometry M4 Topic C: Perimeters and Areas of Polygonal Regions in the Cartesian Plane

Statistics and Probability

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

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.A1HS.32 Select applicable representations to display data on the real number line (e.g., 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
M.A1HS.33 Use statistics appropriate to the shape of the data distribution to compare center (median, mean) and spread (interquartile range, standard deviation only as a tool to describe spread and not to explicitly find 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 Algebra I M2 Lesson 8: Comparing Distributions

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.A1HS.34 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

Statistics and Probability

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

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.A1HS.35 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
M.A1HS.35.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.	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

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.A1HS.35.b Informally assess the fit of a function by plotting and analyzing residuals. Focus should be on situations for which linear models are appropriate.	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
M.A1HS.35.c Fit a linear function for scatter plots that suggest 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

Statistics and Probability

Interpret linear models.

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.A1HS.36 Interpret the rate of change and the constant term of a linear model in the context of the data. Use technology to compute and interpret the correlation coefficient of a linear fit.	Algebra I M2 Lesson 14: Modeling Relationships with a Line 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
M.A1HS.37 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