EUREKA MATH™

GREAT MINDS

ABOUT *EUREKA MATH*

Created by the nonprofit Great Minds, *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

Eureka Math is the only curriculum found by EdReports.org to align fully with the Common Core State Standards for Mathematics for all grades, Kindergarten through Grade 8. Great Minds offers detailed analyses which 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

As a nonprofit, 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

ALGEBRA I

The majority of the Algebra I Missouri Learning Standards: Mathematics are fully covered by the Algebra I *Eureka Math* curriculum. The areas where the Algebra I Missouri Learning Standards: Mathematics and Algebra I *Eureka Math* do not align will require the use of *Eureka Math* content from another course. A detailed analysis of alignment is provided in the table below.

INDICATORS

- Green indicates that the Missouri standard is fully addressed in *Eureka Math*.
- Yellow indicates that the Missouri standard may not be completely addressed in *Eureka Math*.
- Red indicates that the Missouri standard is not addressed in *Eureka Math*.
- Blue indicates there is a discrepancy between the grade level at which this standard is addressed in the Missouri standards and in *Eureka Math*.

Domain	Standards for Mathematical Content	Aligned Components of *Eureka Math*
Number and Quantity	**Cluster: Extend and use properties of rational exponents.**	
	A1.NQ.A.1 Explain how the meaning of rational exponents extends from the properties of integer exponents.	Algebra II M3 Topic A: Real Numbers
	A1.NQ.A.2 Rewrite expressions involving radicals and rational exponents using the properties of exponents. Limit to rational exponents with a numerator of 1.	Algebra II M3 Topic A: Real Numbers

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	Cluster: Use units to solve problems.		
	A1.NQ.B.3 Use units of measure as a way to understand and solve problems involving quantities.		
	a. Identify, label and use appropriate units of measure within a problem.		Algebra I M1: Relationships Between Quantities and Reasoning with Equations and Their Graphs
	b. Convert units and rates.		Algebra I M1: Relationships Between Quantities and Reasoning with Equations and Their Graphs
	c. Use units within problems.		Algebra I M1: Relationships Between Quantities and Reasoning with Equations and Their Graphs
	d. 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
	A1.NQ.B.4 Define and use appropriate quantities for representing a given context or problem.		Algebra I M1 Topic A: Introduction to Functions Studied this Year—Graphing Stories Algebra I M5: A Synthesis of Modeling with Equations and Functions
	A1.NQ.B.5 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: A Synthesis of Modeling with Equations and Functions

Domain	Standards for Mathematical Content		Aligned Components of *Eureka Math*
Seeing Structure in Expressions	**Cluster: Interpret and use structure.**		
	A1.SSE.A.1 Interpret the contextual meaning of individual terms or factors from a given problem that utilizes formulas or expressions.		Algebra I M4 Lessons 1–2: Multiplying and Factoring Polynomial Expressions Algebra I M4 Lessons 3–4: Advanced Factoring Strategies for Quadratic Expressions
	A1.SSE.A.2 Analyze the structure of polynomials to create equivalent expressions or equations.		Algebra I M1 Topic B: The Structure of Expressions Algebra I M1 Lesson 17: Equations Involving Factored Expressions Algebra I M4 Topic A: Quadratic Expressions, Equations, Functions, and Their Connection to Rectangles Algebra I M4 Lessons 11–12: Completing the Square
	A1.SSE.A.3 Choose and produce equivalent forms of a quadratic expression or equations to reveal and explain properties.		
	a. Find the zeros of a quadratic function by rewriting it in factored form.		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
	b. Find the maximum or minimum value of a quadratic function by completing the square.		Algebra I M4 Lesson 12: Completing the Square Algebra I M4 Lesson 17: Graphing Quadratic Functions from the Standard Form, $f(x) = ax^2 + bx + c$

Domain	Standards for Mathematical Content	Aligned Components of *Eureka Math*
Creating Equations	**Cluster: Create equations that describe linear, quadratic, and exponential relationships.**	
	A1.CED.A.1 Create equations and inequalities in one variable and use them to model and/or solve problems.	Algebra I M1 Lesson 18: Equations Involving a Variable Expression in the Denominator Algebra I M1 Topic D: Creating Equations to Solve Problems 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

Domain	Standards for Mathematical Content	Aligned Components of *Eureka Math*
	A1.CED.A.2 Create and graph linear, quadratic, and exponential equations in two variables.	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 Lessons 23–24: Modeling with Quadratic Functions Algebra I M5: A Synthesis of Modeling with Equations and Functions

Domain	Standards for Mathematical Content		Aligned Components of *Eureka Math*
	A1.CED.A.3 Represent constraints by equations or inequalities and by systems of equations or inequalities, and interpret the data points as a solution or non-solution 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 Topic B: Functions and Their Graphs Algebra I M3 Lesson 24: Piecewise and Step Functions in Context
	A1.CED.A.4 Solve literal equations and formulas for a specified variable that highlights a quantity of interest.		Algebra I M1 Lesson 19: Rearranging Formulas

Domain	Standards for Mathematical Content		Aligned Components of *Eureka Math*
Reasoning with Equations and Inequalities	**Cluster: Understand solving equations as a process, and solve equations and inequalities in one variable.**		
	A1.REI.A.1 Explain how each step taken when solving an equation or inequality in one variable creates an equivalent equation or inequality that has the same solution(s) as the original.		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 17: Equations Involving Factored Expressions Algebra I M1 Lesson 18: Equations Involving a Variable Expression in the Denominator
	A1.REI.A.2 Solve problems involving quadratic equations.		
	a. Use the method of completing the square to create an equivalent quadratic equation.		Algebra I M4 Lesson 13: Solving Quadratic Equations by Completing the Square
	b. Derive the quadratic formula.		Algebra I M4 Lesson 14: Deriving the Quadratic Formula

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	c. Analyze different methods of solving quadratic equations.	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
	Cluster: Solve systems of equations.	
	A1.REI.B.3 Solve a system of linear equations algebraically and/or graphically.	Algebra I M1 Lessons 22–23: 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
	A1.REI.B.4 Solve a system consisting of a linear equation and a quadratic equation algebraically and/or graphically.	Algebra II M1 Lesson 31: Systems of Equations Algebra II M1 Lesson 32: Graphing Systems of Equations

Domain	Standards for Mathematical Content	Aligned Components of *Eureka Math*
	A1.REI.B.5 Justify that the technique of linear combination produces an equivalent system of equations.	Algebra I M1 Lesson 23: Solution Sets to Simultaneous Equations
	Cluster: Represent and solve linear and exponential equations and inequalities graphically.	
	A1.REI.C.6 Explain that the graph of an equation in two variables is the set of all its solutions plotted in the Cartesian coordinate plane.	Algebra I M1 Lesson 20: Solution Sets to Equations with Two Variables
	A1.REI.C.7 Graph the solution to a linear inequality in two variables.	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
	A1.REI.C.8 Solve problems involving a system of linear inequalities.	Algebra I M1 Lesson 22: Solution Sets to Simultaneous Equations Algebra I M1 Lesson 24: Applications of Systems of Equations and Inequalities

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Arithmetic with Polynomials and Rational Expressions	**Cluster: Perform operations on polynomials.**	
	A1.APR.A.1 Add, subtract, and multiply polynomials, and understand that polynomials follow the same general rules of arithmetic and are closed under these operations.	Algebra I M1 Topic B: The Structure of Expressions Algebra I M4 Lessons 1–2: Multiplying and Factoring Polynomial Expressions Algebra I M4 Lessons 3–4: Advanced Factoring Strategies for Quadratic Expressions
	A1.APR.A.2 Divide polynomials by monomials.	Algebra II M1 Lesson 3: The Division of Polynomials Algebra II M1 Lesson 4: Comparing Methods—Long Division, Again? Algebra II M1 Lesson 5: Putting It All Together Algebra II M1 Lesson 18: Overcoming a Second Obstacle in Factoring—What If There Is a Remainder?
Interpreting Functions	**Cluster: Understand the concept of a function and use function notation.**	
	A1.IF.A.1 Understand that a function from one set (domain) to another set (range) assigns to each element of the domain exactly one element of the range.	
	a. Represent a function using function notation.	Algebra I M3 Lesson 1: Integer Sequences—Should You Believe in Patterns? Algebra I M3 Lesson 12: The Graph of the Equation $y = f(x)$

Domain	Standards for Mathematical Content		Aligned Components of *Eureka Math*
	b. Understand that the graph of a function labeled f is the set of all ordered pairs (x, y) that satisfy the equation $y = f(x)$.		Algebra I M3 Lesson 1: Integer Sequences—Should You Believe in Patterns? Algebra I M3 Lesson 12: The Graph of the Equation $y = f(x)$
	A1.IF.A.2 Use function notation to evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.		Algebra I M3: Linear and Exponential Functions

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	Cluster: Interpret linear, quadratic, and exponential functions in terms of the context.	
	A1.IF.B.3 Using tables, graphs, and verbal descriptions, interpret key characteristics of a function that models the relationship between two quantities.	Algebra I M3 Lesson 13: Interpreting the Graph of a Function Algebra I M3 Lesson 14: Linear and Exponential Models—Comparing Growth Rate Algebra I M3 Topic D: Using Functions and Graphs to Solve Problems 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 Algebra I M5: A Synthesis of Modeling with Equations and Functions

Domain	Standards for Mathematical Content	Aligned Components of *Eureka Math*
	A1.IF.B.4 Relate the domain and range of a function to its graph and, where applicable, to the quantitative relationship it describes.	Algebra I M3 Topic B: Functions and Their Graphs 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
	A1.IF.B.5 Determine the average rate of change of a function over a specified interval and interpret the meaning.	Algebra I M3 Lesson 6: Exponential Growth—U.S. Population and World Population Algebra I M3 Topic D: Using Functions and Graphs to Solve Problems 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
	A1.IF.B.6 Interpret the parameters of a linear or exponential function in terms of the context.	Algebra I M3 Topic D: Using Functions and Graphs to Solve Problems

Domain	Standards for Mathematical Content	Aligned Components of *Eureka Math*
	Cluster: Analyze linear, quadratic, and exponential functions using different representations.	
	A1.IF.C.7 Graph functions expressed symbolically and identify and interpret key features of the graph.	Algebra I M3: Linear and Exponential 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 Topic C: Function Transformations and Modeling

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	A1.IF.C.8 Translate between different but equivalent forms of a function to reveal and explain properties of the function and interpret these in terms of a context.		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 Topic D: Using Functions and Graphs to Solve Problems Algebra I M4 Lesson 9: Graphing Quadratic Functions from Factored Form, $f(x) = a(x - m)(x - n)$ Algebra I M4 Topic B: Using Different Forms for Quadratic 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 Algebra II M3 Lesson 23: Bean Counting Algebra II M3 Lesson 27: Modeling with Exponential Functions
	A1.IF.C.9 Compare the properties of two functions given different representations.		Algebra I M4 Lesson 22: Comparing Quadratic, Square Root, and Cube Root Functions Represented in Different Ways

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Building Functions	**Cluster: Build new functions from existing functions (limited to linear, quadratic, and exponential).**	
	A1.BF.A.1 Analyze the effect of translations and scale changes on functions.	Algebra I M3 Topic C: 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, $f(x) = x^2$
Linear, Quadratic and Exponential Models	**Cluster: Construct and compare linear, quadratic, and exponential models and solve problems.**	
	A1.LQE.A.1 Distinguish between situations that can be modeled with linear or exponential functions.	
	a. Determine that linear functions change by equal differences over equal intervals.	Algebra I M2 Lesson 14: Modeling Relationships with a Line
	b. Recognize exponential situations in which a quantity grows or decays by a constant percent rate per unit interval.	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: A Synthesis of Modeling with Equations and Functions

Domain	Standards for Mathematical Content	Aligned Components of *Eureka Math*
	A1.LQE.A.2 Describe, using graphs and tables, that a quantity increasing exponentially eventually exceeds a quantity increasing linearly or quadratically.	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
	A1.LQE.A.3 Construct linear, quadratic, and exponential equations given graphs, verbal descriptions, or tables.	Algebra I M3: Linear and Exponential Functions Algebra I M5: A Synthesis of Modeling with Equations and Functions Algebra II M3 Lesson 1: Integer Exponents
	Cluster: Use arithmetic and geometric sequences.	
	A1.LQE.B.4 Write arithmetic and geometric sequences in recursive and explicit forms, and use them to model situations and translate between the two forms.	Algebra I M3 Topic A: Linear and Exponential Sequences Algebra II M3 Lesson 25: Geometric Sequences and Exponential Growth and Decay Algebra II M3 Lesson 26: Percent Rate of Change

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	A1.LQE.B.5 Recognize that sequences are functions, sometimes defined recursively, whose domain is a subset of the set of 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? Algebra II M3 Lesson 26: Percent Rate of Change
	A1.LQE.B.6 Find the terms of sequences given an explicit or recursive formula.	Algebra I M1 Topic D: Creating Equations to Solve Problem Algebra I M3 Lesson 1: Integer Sequences—Should You Believe in Patterns? Algebra I M3 Lesson 2: Recursive Formulas for Sequences Algebra I M3 Lesson 8: Why Stay with Whole Numbers? Algebra I M5 Lesson 5: Modeling from a Sequence

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Data and Statistical Analysis	**Cluster: Summarize, represent, and interpret data.**		
	A1.DS.A.1 Analyze and interpret graphical displays of data.		Algebra I M2: Descriptive Statistics
	A1.DS.A.2 Use statistics appropriate to the shape of the data distribution to compare center and spread 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 Topic B: Describing Variability and Comparing Distributions
	A1.DS.A.3 Interpret differences in shape, center, and spreads in the context of the data sets, accounting for possible effects of outliers.		Algebra I M2: Descriptive Statistics
	A1.DS.A.4 Summarize data in two-way frequency tables.		
	a. Interpret relative frequencies in the context of the data.		Algebra I M2 Topic C: Categorical Data on Two Variables
	b. Recognize possible associations and trends in the data.		Algebra I M2 Topic C: Categorical Data on Two Variables

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	A1.DS.A.5 Construct a scatter plot of bivariate quantitative data describing how the variables are related; determine and use a function that models the relationship.		
	a. Construct a linear function to model bivariate data represented on a scatter plot that minimizes residuals.		Algebra I M2 Topic D: Numerical Data on Two Variables Algebra I M5 Lesson 7: Modeling a Context from Data
	b. Construct an exponential function to model bivariate data represented on a scatter plot that minimizes residuals.		Algebra II M3 Lesson 23: Bean Counting Algebra II M3 Lesson 27: Modeling with Exponential Functions
	A1.DS.A.6 Interpret the slope (rate of change) and the *y*-intercept (constant term) of a linear model in the context of the data.		Algebra I M2 Lesson 14: Modeling Relationships with a Line

Domain	Standards for Mathematical Content	Aligned Components of *Eureka Math*
	A1.DS.A.7 Determine and interpret the correlation coefficient for a linear association.	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
	A1.DS.A.8 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