
Algebra I | Arkansas Mathematics Standards (2023) Correlation to *Eureka Math*²® (2027)

*Eureka Math*² is a research-proven math curriculum that empowers teachers to center instructional techniques on student success. Teachers can foster more “aha!” learning moments by providing the support needed for all learners to build a more confident math mindset.

This *Eureka Math*² edition builds on a strong foundation of effective instruction. It provides teachers with guidance on delivering rigorous instruction that honors student choice and encourages confident problem-solving.

*Eureka Math*² carefully sequences mathematical content to maximize vertical alignment from kindergarten through high school. This kind of sequencing has proven to be essential in students’ mastery of math.

Teachability

*Eureka Math*² employs streamlined materials that allow teachers to plan more efficiently and focus their energy on delivering high-quality instruction that meets the individual needs of their students. Differentiation suggestions, slide decks, digital interactives, and multiple forms of assessment are just a few of the resources built into the teacher materials.

Accessibility

*Eureka Math*² incorporates Universal Design for Learning (UDL) principles so all learners can access the mathematics and take on challenging math concepts. UDL, Differentiation, and Multilingual Learner supports are built into the instructional design and are clearly identified in the *Teach* book.

The curriculum also carries a focus on readability. By eliminating unnecessary words and using clear sentences, the *Eureka Math*² teacher-writers have created one of the most readable mathematics curricula on the market. The curriculum’s readability and accessibility help all students see themselves as mathematical thinkers and doers who are fully capable of owning their mathematics learning.

Math Confidence

*Eureka Math*² fosters a classroom culture of learning by encouraging student-led discourse and cognitive engagement that results in confident learners. By leveraging consistent models, routines, and progressions, teachers can remove barriers and allow all students an avenue to success. Within the digital platform, each grade includes wordless videos and digital interactives that spark students’ curiosity and help them make conceptual connections. Using the *Learn* books, students wonder, explore, and make sense of mathematics, which helps them develop a strong, positive mathematical identity.

Standards for Mathematical Practice	Aligned Components of <i>Eureka Math</i> ²
<p>MP.1 Make sense of problems and persevere in solving them.</p>	<p>Lessons in every module engage students in mathematical practices. These are indicated in margin notes included with every lesson.</p>
<p>MP.2 Reason abstractly and quantitatively.</p>	<p>Lessons in every module engage students in mathematical practices. These are indicated in margin notes included with every lesson.</p>
<p>MP.3 Construct viable arguments and critique the reasoning of others.</p>	<p>Lessons in every module engage students in mathematical practices. These are indicated in margin notes included with every lesson.</p>
<p>MP.4 Model with mathematics.</p>	<p>Lessons in every module engage students in mathematical practices. These are indicated in margin notes included with every lesson.</p>
<p>MP.5 Use appropriate tools strategically.</p>	<p>Lessons in every module engage students in mathematical practices. These are indicated in margin notes included with every lesson.</p>
<p>MP.6 Attend to precision.</p>	<p>Lessons in every module engage students in mathematical practices. These are indicated in margin notes included with every lesson.</p>
<p>MP.7 Look for and make use of structure.</p>	<p>Lessons in every module engage students in mathematical practices. These are indicated in margin notes included with every lesson.</p>
<p>MP.8 Look for and express regularity in repeated reasoning.</p>	<p>Lessons in every module engage students in mathematical practices. These are indicated in margin notes included with every lesson.</p>

Expressions

Polynomials, Roots, & Exponent Laws

Students simplify algebraic and numerical expressions.

Arkansas Mathematics Standards	Aligned Components of <i>Eureka Math</i> ²
<p>A1.EX.1</p> <p>Add, subtract, and multiply polynomials; compare the system of polynomials to the system of integers when performing operations.</p>	<p>A1 M1 Lesson 3: Polynomial Expressions</p> <p>A1 M1 Lesson 4: Adding and Subtracting Polynomial Expressions</p> <p>A1 M1 Lesson 5: Multiplying Polynomial Expressions</p> <p>A1 M1 Lesson 6: Polynomial Identities</p>
<p>A1.EX.2</p> <p>Simplify and perform operations with radical expressions without variables; rationalizing denominators should not include conjugates.</p>	<p>A1 M5 Lesson 9: Unit Fraction Exponents</p> <p>A1 M5 Lesson 10: Rational Exponents</p>
<p>A1.EX.3</p> <p>Simplify algebraic expressions using the laws of exponents.</p>	<p>A1 M5 Lesson 9: Unit Fraction Exponents</p> <p>A1 M5 Lesson 10: Rational Exponents</p>
<p>A1.EX.4</p> <p>Interpret the parts of expressions such as terms, factors, and coefficients in terms of a real-world context.</p>	<p>A1 M4 Lesson 3: Analyzing Functions That Model Projectile Motion</p>

Functions

Domain & Range, Function Notation

Students understand the concept of a function, domain and range, and use function notation; students use function notation to solve problems.

Arkansas Mathematics Standards	Aligned Components of <i>Eureka Math</i> ²
<p>A1.FN.1</p> <p>Explain that a function assigns each element in the domain to exactly one element in the range.</p>	<p>A1 M3 Lesson 1: The Definition of a Function</p> <p>A1 M3 Lesson 2: Representing, Naming, and Evaluating Functions</p> <p>A1 M3 Lesson 3: The Graph of a Function</p> <p>A1 M3 Lesson 4: The Graph of the Equation $y = f(x)$</p> <p>A1 M3 Lesson 5: Using Pseudocode to Compare Graphs of Functions and Graphs of Equations</p> <p>A1 M3 Lesson 6: Representations of Functions</p>
<p>A1.FN.2</p> <p>Use function notation to represent functions, understanding that if f is a function and x is an element of its domain, then $f(x)$ represents the output of f corresponding to the input x.</p>	<p>A1 M3 Lesson 1: The Definition of a Function</p> <p>A1 M3 Lesson 2: Representing, Naming, and Evaluating Functions</p> <p>A1 M3 Lesson 6: Representations of Functions</p> <p>A1 M3 Lesson 17: Step Functions</p> <p>A1 M5 Lesson 1: Exploring Patterns</p> <p>A1 M5 Lesson 2: The Recursive Challenge</p> <p>A1 M5 Lesson 3: Recursive Formulas for Sequences</p> <p>A1 M5 Lesson 4: Explicit Formulas for Sequences</p> <p>A1 M5 Lesson 7: Sierpinski Triangle</p>

Arkansas Mathematics Standards

Aligned Components of *Eureka Math*²

A1.FN.3

Graph functions given in function notation, understanding that the graph contains the points $(x, f(x))$.

- A1 M3 Lesson 1: The Definition of a Function
- A1 M3 Lesson 2: Representing, Naming, and Evaluating Functions
- A1 M3 Lesson 3: The Graph of a Function
- A1 M3 Lesson 4: The Graph of the Equation $y = f(x)$
- A1 M3 Lesson 5: Using Pseudocode to Compare Graphs of Functions and Graphs of Equations
- A1 M3 Lesson 6: Representations of Functions
- A1 M3 Lesson 7: Inverses of Linear Functions
- A1 M3 Lesson 8: Exploring Key Features of a Function and Its Graph
- A1 M3 Lesson 9: Identifying Key Features of a Function and Its Graph
- A1 M3 Lesson 10: Representing Functions from Verbal Descriptions
- A1 M3 Lesson 12: Comparing Functions
- A1 M3 Lesson 13: Mars Curiosity Rover
- A1 M3 Lesson 14: Modeling Elevation as a Function of Time
- A1 M4 Lesson 1: Falling Objects
- A1 M4 Lesson 2: Projectile Motion
- A1 M4 Lesson 3: Analyzing Functions That Model Projectile Motion
- A1 M4 Lesson 11: Graphing Quadratic Functions from Factored Form
- A1 M4 Lesson 12: Using Symmetry to Graph Quadratic Functions from Standard Form
- A1 M4 Lesson 21: Completing the Square to Graph Quadratic Functions
- A1 M4 Lesson 23: Creating Equations of Quadratic Functions to Model Contexts
- A1 M4 Lesson 25: Maximizing Area

Arkansas Mathematics Standards	Aligned Components of <i>Eureka Math</i> ²
<p>A1.FN.4</p> <p>Evaluate functions expressed in function notation for one or more elements in their domains (inputs); use function notation to describe a contextual situation.</p>	<p>A1 M3 Lesson 1: The Definition of a Function</p> <p>A1 M3 Lesson 2: Representing, Naming, and Evaluating Functions</p> <p>A1 M3 Lesson 6: Representations of Functions</p> <p>A1 M3 Lesson 16: The Absolute Value Function</p> <p>A1 M5 Lesson 1: Exploring Patterns</p> <p>A1 M5 Lesson 2: The Recursive Challenge</p> <p>A1 M5 Lesson 3: Recursive Formulas for Sequences</p> <p>A1 M5 Lesson 4: Explicit Formulas for Sequences</p> <p>A1 M5 Lesson 7: Sierpinski Triangle</p>

Functions

Construct & Compare

Students construct and compare linear, quadratic, and exponential models and solve problems.

Arkansas Mathematics Standards	Aligned Components of <i>Eureka Math</i> ²
<p>A1.FN.5</p> <p>Differentiate between real-world scenarios that can be modeled by exponential or linear functions by determining whether the relationship has a common difference or a common ratio.</p>	<p>A1 M5 Lesson 15: Calculating Interest</p> <p>A1 M5 Lesson 18: Modeling Populations</p> <p>A1 M5 Lesson 19: Analyzing Exponential Growth</p> <p>A1 M5 Lesson 21: World Population Prediction</p> <p>A1 M5 Lesson 22: A Closer Look at Populations</p> <p>A1 M5 Lesson 23: Modeling the Temperature of Objects Cooling Over Time</p> <p>A1 M5 Lesson 24: Modeling an Invasive Species Population</p> <p>A1 M6 Lesson 1: Analyzing Paint Splatters</p> <p>A1 M6 Lesson 2: Using Residual Plots to Select Models for Data</p> <p>A1 M6 Lesson 3: Populations of US Cities</p>

Arkansas Mathematics Standards

Aligned Components of *Eureka Math*²

A1.FN.6

Compare the growth pattern of exponential to linear or quadratic functions using graphs and tables and recognize how exponential growth exceeds other functions.

A1 M5 Lesson 8: Exponential Functions

A1 M5 Lesson 14: Writing Equations for Exponential Functions from Tables or Graphs

A1 M5 Lesson 15: Calculating Interest

A1 M5 Lesson 16: Exponential Growth

A1 M5 Lesson 17: Exponential Decay

A1 M5 Lesson 18: Modeling Populations

A1 M5 Lesson 20: Comparing Growth of Functions

A1 M5 Lesson 21: World Population Prediction

A1 M5 Lesson 22: A Closer Look at Populations

A1 M5 Lesson 23: Modeling the Temperature of Objects Cooling Over Time

A1 M5 Lesson 24: Modeling an Invasive Species Population

A1 M6 Lesson 4: The Deal

A1 M6 Lesson 7: World Record Doughnut

Linear Functions, Equations, & Inequalities

Create & Solve

Students create and solve equations that model linear relationships.

Arkansas Mathematics Standards	Aligned Components of <i>Eureka Math</i> ²
<p>A1.LFE.1</p> <p>Represent and solve real-world problems, using linear expressions, equations, and inequalities in one variable.</p>	<p>A1 M1 Lesson 7: Printing Presses</p> <p>A1 M1 Lesson 11: Writing and Solving Equations in One Variable</p> <p>A1 M1 Lesson 13: Solving Linear Inequalities in One Variable</p> <p>A1 M1 Lesson 14: Solution Sets of Compound Statements</p> <p>A1 M1 Lesson 15: Solving and Graphing Compound Inequalities</p> <p>A1 M2 Lesson 1: Solution Sets of Linear Equations in Two Variables</p> <p>A1 M2 Lesson 6: Applications of Linear Equations and Inequalities</p> <p>A1 M4 Lesson 9: Creating and Solving Quadratic Equations in One Variable</p> <p>A1 M6 Lesson 5: Solar System Models</p> <p>A1 M6 Lesson 6: Designing a Fundraiser</p>
<p>A1.LFE.2</p> <p>Construct linear functions from arithmetic sequences with and without context.</p>	<p>A1 M5 Lesson 5: Arithmetic and Geometric Sequences</p> <p>A1 M5 Lesson 6: Representations of Arithmetic and Geometric Sequences</p> <p>A1 M5 Lesson 7: Sierpinski Triangle</p>
<p>A1.LFE.3</p> <p>Solve linear formulas for a specified variable.</p>	<p>A1 M1 Lesson 12: Rearranging Formulas</p> <p>A1 M4 Lesson 13: Using Square Roots to Solve Quadratic Equations</p>

Arkansas Mathematics Standards	Aligned Components of <i>Eureka Math</i> ²
<p>A1.LFE.4</p> <p>Solve linear equations, linear inequalities, and absolute value equations in one variable, including those with rational number coefficients, and variables on both sides of the equal or inequality sign; solve them fluently, explaining the process used.</p>	<p>A1 M1 Lesson 7: Printing Presses</p> <p>A1 M1 Lesson 8: Solution Sets for Equations and Inequalities in One Variable</p> <p>A1 M1 Lesson 9: Solving Linear Equations in One Variable</p> <p>A1 M1 Lesson 10: Some Potential Dangers When Solving Equations</p> <p>A1 M1 Lesson 11: Writing and Solving Equations in One Variable</p> <p>A1 M1 Lesson 13: Solving Linear Inequalities in One Variable</p> <p>A1 M1 Lesson 14: Solution Sets of Compound Statements</p> <p>A1 M1 Lesson 15: Solving and Graphing Compound Inequalities</p> <p>A1 M1 Lesson 16: Solving Absolute Value Equations</p> <p>A1 M1 Lesson 17: Solving Absolute Value Inequalities</p> <p>A1 M1 Lesson 18: Applying Absolute Value</p>

Linear Functions, Equations, & Inequalities

Interpret Key Features

Students interpret key features of equations that model linear relationships.

Arkansas Mathematics Standards	Aligned Components of <i>Eureka Math</i> ²
<p>A1.LFE.5</p> <p>Determine the domain and range of linear functions in mathematical problems.</p>	<p>A1 M3 Lesson 1: The Definition of a Function</p> <p>A1 M3 Lesson 2: Representing, Naming, and Evaluating Functions</p> <p>A1 M3 Lesson 3: The Graph of a Function</p> <p>A1 M3 Lesson 4: The Graph of the Equation $y = f(x)$</p> <p>A1 M3 Lesson 5: Using Pseudocode to Compare Graphs of Functions and Graphs of Equations</p> <p>A1 M3 Lesson 6: Representations of Functions</p>

Arkansas Mathematics Standards	Aligned Components of <i>Eureka Math</i> ²
<p>A1.LFE.6</p> <p>Determine reasonable domain and range values of linear functions representing real-world situations, both continuous and discrete; interpret the solution as reasonable or unreasonable in context.</p>	<p>A1 M3 Lesson 1: The Definition of a Function</p> <p>A1 M3 Lesson 2: Representing, Naming, and Evaluating Functions</p> <p>A1 M3 Lesson 6: Representations of Functions</p> <p>A1 M3 Lesson 17: Step Functions</p> <p>A1 M5 Lesson 1: Exploring Patterns</p> <p>A1 M5 Lesson 2: The Recursive Challenge</p> <p>A1 M5 Lesson 3: Recursive Formulas for Sequences</p> <p>A1 M5 Lesson 4: Explicit Formulas for Sequences</p> <p>A1 M5 Lesson 7: Sierpinski Triangle</p>
<p>A1.LFE.7</p> <p>Interpret the key features of a linear and absolute value functions that models a relationship between two quantities in a given context.</p>	<p>A1 M3 Lesson 7: Inverses of Linear Functions</p> <p>A1 M3 Lesson 8: Exploring Key Features of a Function and Its Graph</p> <p>A1 M3 Lesson 9: Identifying Key Features of a Function and Its Graph</p> <p>A1 M3 Lesson 10: Representing Functions from Verbal Descriptions</p> <p>A1 M3 Lesson 12: Comparing Functions</p> <p>A1 M3 Lesson 13: Mars Curiosity Rover</p> <p>A1 M3 Lesson 14: Modeling Elevation as a Function of Time</p> <p>A1 M4 Lesson 1: Falling Objects</p> <p>A1 M4 Lesson 2: Projectile Motion</p> <p>A1 M4 Lesson 3: Analyzing Functions That Model Projectile Motion</p> <p>A1 M4 Lesson 11: Graphing Quadratic Functions from Factored Form</p> <p>A1 M4 Lesson 12: Using Symmetry to Graph Quadratic Functions from Standard Form</p> <p>A1 M4 Lesson 21: Completing the Square to Graph Quadratic Functions</p> <p>A1 M4 Lesson 23: Creating Equations of Quadratic Functions to Model Contexts</p> <p>A1 M4 Lesson 25: Maximizing Area</p>

Arkansas Mathematics Standards	Aligned Components of <i>Eureka Math</i> ²
<p>A1.LFE.8</p> <p>Flexibly use different representations of a linear function, including graphs, tables, and equations.</p>	<p>A1 M3 Lesson 4: The Graph of the Equation $y = f(x)$</p> <p>A1 M3 Lesson 5: Using Pseudocode to Compare Graphs of Functions and Graphs of Equations</p> <p>A1 M3 Lesson 6: Representations of Functions</p> <p>A1 M4 Lesson 4: Graphs of Quadratic Functions</p> <p>A1 M4 Lesson 11: Graphing Quadratic Functions from Factored Form</p> <p>A1 M4 Lesson 12: Using Symmetry to Graph Quadratic Functions from Standard Form</p> <p>A1 M4 Lesson 19: Transforming the Graphs of Quadratic Functions</p> <p>A1 M4 Lesson 23: Creating Equations of Quadratic Functions to Model Contexts</p> <p>A1 M4 Lesson 24: Another Look at Systems of Equations</p>
<p>A1.LFE.9</p> <p>Calculate and interpret the rate of change of a linear function represented in a table, graph, or as an equation in context of real-world and mathematical problems.</p>	<p>A1 M4 Lesson 1: Falling Objects</p> <p>A1 M4 Lesson 3: Analyzing Functions That Model Projectile Motion</p> <p>A1 M4 Lesson 12: Using Symmetry to Graph Quadratic Functions from Standard Form</p> <p>A1 M5 Lesson 15: Calculating Interest</p> <p>A1 M5 Lesson 18: Modeling Populations</p> <p>A1 M5 Lesson 19: Analyzing Exponential Growth</p> <p>A1 M5 Lesson 20: Comparing Growth of Functions</p> <p>A1 M5 Lesson 21: World Population Prediction</p> <p>A1 M5 Lesson 22: A Closer Look at Populations</p> <p>A1 M5 Lesson 24: Modeling an Invasive Species Population</p>

Arkansas Mathematics Standards	Aligned Components of <i>Eureka Math</i> ²
<p>A1.LFE.10</p> <p>Translate among equivalent forms of equations for linear functions, including standard, point-slope, and slope-intercept forms; recognize that each form reveals key features in a given context.</p>	<p>8 M4 Lesson 12: Solutions to Linear Equations in Two Variables</p> <p>8 M4 Lesson 13: The Graph of a Linear Equation in Two Variables</p> <p>8 M4 Lesson 14: Lines with Special Characteristics</p> <p>8 M4 Lesson 20: Slope-Intercept Form of the Equation of a Line</p> <p>8 M4 Lesson 21: Slope and Parallel Lines</p> <p>8 M4 Lesson 22: Point-Slope Form of the Equation of a Line</p> <p>8 M4 Lesson 23: Comparing Equations in Different Forms</p> <p>8 M4 Lesson 24: The Patterns, the Pops, and the Pastries</p> <p>8 M4 Lesson 25: Lines, Lines, and More Lines</p> <p>8 M4 Lesson 26: Linear Equations from Word Problems</p> <p>8 M4 Lesson 27: Get to Work</p>

Linear Functions, Equations, & Inequalities

Systems of Equations & Inequalities

Students solve systems of equations and inequalities.

Arkansas Mathematics Standards	Aligned Components of <i>Eureka Math</i> ²
<p>A1.LFE.11</p> <p>Solve systems of linear equations by substitution, elimination, and graphing with and without a real-world context; understand that the solutions will be the same regardless of the method for solving.</p>	<p>A1 M2 Lesson 1: Solution Sets of Linear Equations in Two Variables</p> <p>A1 M2 Lesson 2: Graphing Linear Equations in Two Variables</p> <p>A1 M2 Lesson 7: Low-Flow Showerhead</p> <p>A1 M2 Lesson 8: Systems of Linear Equations in Two Variables</p> <p>A1 M2 Lesson 9: A New Way to Solve Systems</p> <p>A1 M2 Lesson 10: The Elimination Method</p> <p>A1 M2 Lesson 11: Applications of Systems of Equations</p>

Arkansas Mathematics Standards	Aligned Components of <i>Eureka Math</i> ²
<p>A1.LFE.12</p> <p>Solve a system of equations consisting of a linear equation and a quadratic equation in two variables graphically with the assistance of technology.</p>	<p>A1 M4 Lesson 24: Another Look at Systems of Equations</p>
<p>A1.LFE.13</p> <p>Explain why a solution to the equation $f(x) = g(x)$ is the x-coordinate where the y-coordinate of $f(x)$ and $g(x)$ are the same using graphs, tables, or approximations. Include cases where $f(x)$ and/or $g(x)$ are linear, quadratic, absolute value, and exponential.</p>	<p>A1 M3 Lesson 11: Using Graphs to Solve Equations</p> <p>A1 M3 Lesson 16: The Absolute Value Function</p> <p>A1 M4 Lesson 24: Another Look at Systems of Equations</p> <p>A1 M5 Lesson 13: Using Transformations to Graph Exponential Functions (Bases Between 0 and 1)</p> <p>A1 M5 Lesson 20: Comparing Growth of Functions</p>
<p>A1.LFE.14</p> <p>Solve linear inequalities and systems of linear inequalities in two variables by graphing.</p>	<p>A1 M2 Lesson 4: Solution Sets of Linear Inequalities in Two Variables</p> <p>A1 M2 Lesson 5: Graphing Linear Inequalities in Two Variables</p> <p>A1 M2 Lesson 12: Solution Sets of Systems of Linear Inequalities</p> <p>A1 M2 Lesson 13: Graphing Solution Sets of Systems of Linear Inequalities</p> <p>A1 M2 Lesson 14: Applications of Systems of Linear Inequalities</p> <p>A1 M6 Lesson 6: Designing a Fundraiser</p>

Linear Functions, Equations, & Inequalities

Graphing & Transformations

Students graph linear functions, equations, and inequalities.

Arkansas Mathematics Standards	Aligned Components of <i>Eureka Math</i> ²
<p>A1.LFE.15</p> <p>Write linear equations that model the relationship between two quantities and produce a graph of the equation.</p>	<p>A1 M3 Lesson 4: The Graph of the Equation $y = f(x)$</p> <p>A1 M3 Lesson 5: Using Pseudocode to Compare Graphs of Functions and Graphs of Equations</p> <p>A1 M3 Lesson 6: Representations of Functions</p> <p>A1 M3 Lesson 18: Piecewise Linear Functions in Context</p> <p>A1 M4 Lesson 4: Graphs of Quadratic Functions</p> <p>A1 M4 Lesson 11: Graphing Quadratic Functions from Factored Form</p> <p>A1 M4 Lesson 12: Using Symmetry to Graph Quadratic Functions from Standard Form</p> <p>A1 M4 Lesson 19: Transforming the Graphs of Quadratic Functions</p> <p>A1 M4 Lesson 23: Creating Equations of Quadratic Functions to Model Contexts</p> <p>A1 M4 Lesson 24: Another Look at Systems of Equations</p> <p>A1 M4 Lesson 25: Maximizing Area</p> <p>A1 M4 Lesson 26: Modeling Data with Quadratic Functions</p> <p>A1 M4 Lesson 27: Search and Rescue Helicopter</p> <p>A1 M5 Lesson 1: Exploring Patterns</p> <p>A1 M5 Lesson 2: The Recursive Challenge</p> <p>A1 M5 Lesson 3: Recursive Formulas for Sequences</p> <p>A1 M5 Lesson 4: Explicit Formulas for Sequences</p> <p>A1 M5 Lesson 5: Arithmetic and Geometric Sequences</p> <p>A1 M5 Lesson 6: Representations of Arithmetic and Geometric Sequences</p> <p>A1 M5 Lesson 7: Sierpinski Triangle</p> <p>A1 M5 Lesson 8: Exponential Functions</p> <p>A1 M5 Lesson 15: Calculating Interest</p> <p>A1 M6 Lesson 4: The Deal</p> <p>A1 M6 Lesson 7: World Record Doughnut</p>

Arkansas Mathematics Standards	Aligned Components of <i>Eureka Math</i> ²
<p>A1.LFE.16</p> <p>Graph linear functions expressed as an equation and show intercepts of the graph without technology.</p>	<p>A1 M3 Lesson 4: The Graph of the Equation $y = f(x)$</p> <p>A1 M3 Lesson 5: Using Pseudocode to Compare Graphs of Functions and Graphs of Equations</p> <p>A1 M3 Lesson 6: Representations of Functions</p> <p>A1 M3 Lesson 14: Modeling Elevation as a Function of Time</p> <p>A1 M3 Lesson 15: Piecewise Linear Functions</p> <p>A1 M3 Lesson 16: The Absolute Value Function</p> <p>A1 M3 Lesson 17: Step Functions</p> <p>A1 M3 Lesson 18: Piecewise Linear Functions in Context</p> <p>A1 M3 Lesson 20: Building New Functions—Translations</p> <p>A1 M3 Lesson 24: A Summary of Transforming the Graph of a Function</p> <p>A1 M4 Lesson 4: Graphs of Quadratic Functions</p> <p>A1 M4 Lesson 11: Graphing Quadratic Functions from Factored Form</p> <p>A1 M4 Lesson 12: Using Symmetry to Graph Quadratic Functions from Standard Form</p> <p>A1 M4 Lesson 19: Transforming the Graphs of Quadratic Functions</p> <p>A1 M4 Lesson 23: Creating Equations of Quadratic Functions to Model Contexts</p> <p>A1 M4 Lesson 24: Another Look at Systems of Equations</p>
<p>A1.LFE.17</p> <p>Graph absolute value functions expressed as an equation with and without technology, showing intercepts and end behavior.</p>	<p>A1 M3 Lesson 14: Modeling Elevation as a Function of Time</p> <p>A1 M3 Lesson 15: Piecewise Linear Functions</p> <p>A1 M3 Lesson 16: The Absolute Value Function</p> <p>A1 M3 Lesson 17: Step Functions</p> <p>A1 M3 Lesson 18: Piecewise Linear Functions in Context</p> <p>A1 M3 Lesson 20: Building New Functions—Translations</p> <p>A1 M3 Lesson 24: A Summary of Transforming the Graph of a Function</p>

Arkansas Mathematics Standards	Aligned Components of <i>Eureka Math</i> ²
<p>A1.LFE.18</p> <p>Graph and generalize the effect of transformations on linear and absolute value functions.</p>	<p>A1 M3 Lesson 19: Exploring Transformations of the Graphs of Functions</p> <p>A1 M3 Lesson 20: Building New Functions—Translations</p> <p>A1 M3 Lesson 21: Building New Functions—Reflections</p> <p>A1 M3 Lesson 22: Building New Functions—Vertical Scaling</p> <p>A1 M3 Lesson 23: Building New Functions—Horizontal Scaling</p> <p>A1 M3 Lesson 24: A Summary of Transforming the Graph of a Function</p> <p>A1 M4 Lesson 20: Art with Transformations</p> <p>A1 M5 Lesson 12: Using Transformations to Graph Exponential Functions (Bases Greater Than 1)</p> <p>A1 M5 Lesson 13: Using Transformations to Graph Exponential Functions (Bases Between 0 and 1)</p> <p>A1 M5 Lesson 14: Writing Equations for Exponential Functions from Tables or Graphs</p> <p>A1 M5 Lesson 23: Modeling the Temperature of Objects Cooling Over Time</p>
<p>A1.LFE.19</p> <p>Given the graph of a linear function, explain the effects of the transformation from the parent function, $y = x$.</p>	<p>A1 M3 Lesson 19: Exploring Transformations of the Graphs of Functions</p> <p>A1 M3 Lesson 20: Building New Functions—Translations</p> <p>A1 M3 Lesson 21: Building New Functions—Reflections</p> <p>A1 M3 Lesson 22: Building New Functions—Vertical Scaling</p> <p>A1 M3 Lesson 23: Building New Functions—Horizontal Scaling</p> <p>A1 M3 Lesson 24: A Summary of Transforming the Graph of a Function</p> <p>A1 M4 Lesson 20: Art with Transformations</p> <p>A1 M5 Lesson 12: Using Transformations to Graph Exponential Functions (Bases Greater Than 1)</p> <p>A1 M5 Lesson 13: Using Transformations to Graph Exponential Functions (Bases Between 0 and 1)</p> <p>A1 M5 Lesson 14: Writing Equations for Exponential Functions from Tables or Graphs</p> <p>A1 M5 Lesson 23: Modeling the Temperature of Objects Cooling Over Time</p>

Linear Functions, Equations, & Inequalities

Statistical Relationships

Students explore linear statistical relationships.

Arkansas Mathematics Standards	Aligned Components of <i>Eureka Math</i> ²
<p>A1.LFE.20</p> <p>Write linear functions that provide a reasonable fit to data and use them to make predictions, with and without technology; interpret the slope and y-intercept in context.</p>	<p>A1 M2 Lesson 16: Using Lines to Model Bivariate Quantitative Data</p> <p>A1 M2 Lesson 17: Modeling Relationships with a Line</p> <p>A1 M2 Lesson 21: Analyzing Bivariate Quantitative Data</p> <p>A1 M4 Lesson 23: Creating Equations of Quadratic Functions to Model Contexts</p> <p>A1 M4 Lesson 26: Modeling Data with Quadratic Functions</p> <p>A1 M4 Lesson 27: Search and Rescue Helicopter</p> <p>A1 M6 Lesson 1: Analyzing Paint Splatters</p> <p>A1 M6 Lesson 2: Using Residual Plots to Select Models for Data</p> <p>A1 M6 Lesson 3: Populations of US Cities</p>
<p>A1.LFE.21</p> <p>Calculate, using technology, the correlation coefficient between two quantitative variables and interpret this quantity as a measure of the strength of the linear association.</p>	<p>A1 M2 Lesson 20: Interpreting Correlation</p> <p>A1 M2 Lesson 21: Analyzing Bivariate Quantitative Data</p>
<p>A1.LFE.22</p> <p>Compare and contrast correlation and causation in real-world problems.</p>	<p>A1 M2 Lesson 20: Interpreting Correlation</p> <p>A1 M2 Lesson 21: Analyzing Bivariate Quantitative Data</p>

Quadratic Functions & Equations

Create & Solve

Students create and solve equations that model quadratic relationships.

Arkansas Mathematics Standards	Aligned Components of <i>Eureka Math</i> ²
<p>A1.QFE.1</p> <p>Represent and solve real-world problems using quadratic expressions and equations in one variable.</p>	<p>A1 M1 Lesson 7: Printing Presses</p> <p>A1 M1 Lesson 11: Writing and Solving Equations in One Variable</p> <p>A1 M1 Lesson 13: Solving Linear Inequalities in One Variable</p> <p>A1 M1 Lesson 15: Solving and Graphing Compound Inequalities</p> <p>A1 M4 Lesson 9: Creating and Solving Quadratic Equations in One Variable</p>
<p>A1.QFE.2</p> <p>Write quadratic equations with real number solutions that model the relationship between two quantities and produce a graph of the equation.</p>	<p>A1 M1 Lesson 11: Writing and Solving Equations in One Variable</p> <p>A1 M1 Lesson 14: Solution Sets of Compound Statements</p> <p>A1 M1 Lesson 15: Solving and Graphing Compound Inequalities</p> <p>A1 M2 Lesson 1: Solution Sets of Linear Equations in Two Variables</p> <p>A1 M2 Lesson 2: Graphing Linear Equations in Two Variables</p> <p>A1 M2 Lesson 3: Creating Linear Equations in Two Variables</p> <p>A1 M2 Lesson 6: Applications of Linear Equations and Inequalities</p> <p>A1 M4 Lesson 1: Falling Objects</p> <p>A1 M4 Lesson 2: Projectile Motion</p> <p>A1 M4 Lesson 3: Analyzing Functions That Model Projectile Motion</p> <p>A1 M4 Lesson 11: Graphing Quadratic Functions from Factored Form</p> <p>A1 M4 Lesson 12: Using Symmetry to Graph Quadratic Functions from Standard Form</p> <p>A1 M4 Lesson 23: Creating Equations of Quadratic Functions to Model Contexts</p> <p>A1 M4 Lesson 25: Maximizing Area</p> <p>A1 M4 Lesson 26: Modeling Data with Quadratic Functions</p> <p>A1 M4 Lesson 27: Search and Rescue Helicopter</p> <p>A1 M6 Lesson 5: Solar System Models</p> <p>A1 M6 Lesson 6: Designing a Fundraiser</p>

Arkansas Mathematics Standards	Aligned Components of <i>Eureka Math</i> ²
<p>A1.QFE.3</p> <p>Solve quadratic equations with real number solutions, containing one variable, including those with variables on both sides of the equal sign. Equations should be solved by:</p>	<p><i>This standard is fully addressed by the lessons aligned to its subsections.</i></p>
<p>A1.QFE.3.1</p> <p>Graphing,</p>	<p>A1 M3 Lesson 4: The Graph of the Equation $y = f(x)$</p> <p>A1 M3 Lesson 5: Using Pseudocode to Compare Graphs of Functions and Graphs of Equations</p> <p>A1 M3 Lesson 6: Representations of Functions</p> <p>A1 M4 Lesson 4: Graphs of Quadratic Functions</p> <p>A1 M4 Lesson 11: Graphing Quadratic Functions from Factored Form</p> <p>A1 M4 Lesson 12: Using Symmetry to Graph Quadratic Functions from Standard Form</p> <p>A1 M4 Lesson 19: Transforming the Graphs of Quadratic Functions</p> <p>A1 M4 Lesson 23: Creating Equations of Quadratic Functions to Model Contexts</p> <p>A1 M4 Lesson 24: Another Look at Systems of Equations</p>
<p>A1.QFE.3.2</p> <p>Factoring (including perfect square trinomials and difference of squares binomials),</p>	<p>A1 M4 Lesson 5: Solving Equations That Contain Factored Expressions</p> <p>A1 M4 Lesson 6: Solving Quadratic Equations by Factoring: Identities and Guess and Check</p> <p>A1 M4 Lesson 7: Solving Quadratic Equations by Factoring: Splitting the Linear Term</p> <p>A1 M4 Lesson 8: A Summary of Solving Quadratic Equations by Factoring</p> <p>A1 M4 Lesson 9: Creating and Solving Quadratic Equations in One Variable</p> <p>A1 M4 Lesson 10: Zeros of Functions</p> <p>A1 M4 Lesson 11: Graphing Quadratic Functions from Factored Form</p> <p>A1 M4 Lesson 13: Using Square Roots to Solve Quadratic Equations</p> <p>A1 M4 Lesson 14: Solving Quadratic Equations by Completing the Square</p>

Arkansas Mathematics Standards	Aligned Components of <i>Eureka Math</i> ²
<p>A1.QFE.3.2 <i>continued</i></p>	<p>A1 M4 Lesson 15: Deriving the Quadratic Formula A1 M4 Lesson 16: Solving Quadratic Equations A1 M4 Lesson 18: The Quadratic Formula and Zeros of a Function A1 M4 Lesson 22: A Summary of Graphing Quadratic Functions</p>
<p>A1.QFE.3.3 Using the quadratic formula,</p>	<p>A1 M4 Lesson 14: Solving Quadratic Equations by Completing the Square A1 M4 Lesson 15: Deriving the Quadratic Formula</p>
<p>A1.QFE.3.4 Completing the square, or</p>	<p>A1 M4 Lesson 10: Zeros of Functions A1 M4 Lesson 11: Graphing Quadratic Functions from Factored Form A1 M4 Lesson 14: Solving Quadratic Equations by Completing the Square A1 M4 Lesson 15: Deriving the Quadratic Formula A1 M4 Lesson 21: Completing the Square to Graph Quadratic Functions A1 M4 Lesson 22: A Summary of Graphing Quadratic Functions</p>
<p>A1.QFE.3.5 Taking the square root.</p>	<p>A1 M4 Lesson 5: Solving Equations That Contain Factored Expressions A1 M4 Lesson 6: Solving Quadratic Equations by Factoring: Identities and Guess and Check A1 M4 Lesson 7: Solving Quadratic Equations by Factoring: Splitting the Linear Term A1 M4 Lesson 8: A Summary of Solving Quadratic Equations by Factoring A1 M4 Lesson 9: Creating and Solving Quadratic Equations in One Variable A1 M4 Lesson 13: Using Square Roots to Solve Quadratic Equations A1 M4 Lesson 14: Solving Quadratic Equations by Completing the Square A1 M4 Lesson 15: Deriving the Quadratic Formula A1 M4 Lesson 16: Solving Quadratic Equations A1 M4 Lesson 18: The Quadratic Formula and Zeros of a Function</p>

Quadratic Functions & Equations

Interpret Key Features

Students interpret key features of equations that model quadratic relationships.

Arkansas Mathematics Standards	Aligned Components of <i>Eureka Math</i> ²
<p>A1.QFE.4</p> <p>Determine the domain and range of quadratic functions in mathematical problems.</p>	<p>A1 M3 Lesson 1: The Definition of a Function</p> <p>A1 M3 Lesson 2: Representing, Naming, and Evaluating Functions</p> <p>A1 M3 Lesson 3: The Graph of a Function</p> <p>A1 M3 Lesson 4: The Graph of the Equation $y = f(x)$</p> <p>A1 M3 Lesson 5: Using Pseudocode to Compare Graphs of Functions and Graphs of Equations</p> <p>A1 M3 Lesson 6: Representations of Functions</p>
<p>A1.QFE.5</p> <p>Determine reasonable domain and range values of quadratic functions representing real-world situations, both continuous and discrete; interpret the solution as reasonable or unreasonable in context.</p>	<p>A1 M3 Lesson 3: The Graph of a Function</p> <p>A1 M3 Lesson 14: Modeling Elevation as a Function of Time</p> <p>A1 M3 Lesson 17: Step Functions</p> <p>A1 M4 Lesson 2: Projectile Motion</p> <p>A1 M4 Lesson 3: Analyzing Functions That Model Projectile Motion</p> <p>A1 M4 Lesson 23: Creating Equations of Quadratic Functions to Model Contexts</p>
<p>A1.QFE.6</p> <p>Interpret the key features of a quadratic function that models a relationship between two quantities in a given context.</p>	<p>A1 M3 Lesson 7: Inverses of Linear Functions</p> <p>A1 M3 Lesson 8: Exploring Key Features of a Function and Its Graph</p> <p>A1 M3 Lesson 9: Identifying Key Features of a Function and Its Graph</p> <p>A1 M3 Lesson 10: Representing Functions from Verbal Descriptions</p> <p>A1 M3 Lesson 12: Comparing Functions</p> <p>A1 M3 Lesson 13: Mars Curiosity Rover</p> <p>A1 M3 Lesson 14: Modeling Elevation as a Function of Time</p> <p>A1 M4 Lesson 1: Falling Objects</p> <p>A1 M4 Lesson 2: Projectile Motion</p> <p>A1 M4 Lesson 3: Analyzing Functions That Model Projectile Motion</p>

Arkansas Mathematics Standards

Aligned Components of *Eureka Math*²

<p>A1.QFE.6 <i>continued</i></p>	<p>A1 M4 Lesson 11: Graphing Quadratic Functions from Factored Form A1 M4 Lesson 12: Using Symmetry to Graph Quadratic Functions from Standard Form A1 M4 Lesson 21: Completing the Square to Graph Quadratic Functions A1 M4 Lesson 23: Creating Equations of Quadratic Functions to Model Contexts A1 M4 Lesson 25: Maximizing Area</p>
<p>A1.QFE.7 Flexibly use different representations of a quadratic function, including graphs, tables, and equations.</p>	<p>A1 M3 Lesson 4: The Graph of the Equation $y = f(x)$ A1 M3 Lesson 5: Using Pseudocode to Compare Graphs of Functions and Graphs of Equations A1 M3 Lesson 6: Representations of Functions A1 M3 Lesson 12: Comparing Functions A1 M4 Lesson 4: Graphs of Quadratic Functions A1 M4 Lesson 10: Zeros of Functions A1 M4 Lesson 11: Graphing Quadratic Functions from Factored Form A1 M4 Lesson 12: Using Symmetry to Graph Quadratic Functions from Standard Form A1 M4 Lesson 19: Transforming the Graphs of Quadratic Functions A1 M4 Lesson 21: Completing the Square to Graph Quadratic Functions A1 M4 Lesson 22: A Summary of Graphing Quadratic Functions A1 M4 Lesson 23: Creating Equations of Quadratic Functions to Model Contexts A1 M4 Lesson 24: Another Look at Systems of Equations</p>
<p>A1.QFE.8 Explain how each form of a quadratic expression (standard, factored, and vertex form) identifies different key attributes, using the different forms to interpret quantities in context.</p>	<p>A1 M3 Lesson 7: Inverses of Linear Functions A1 M3 Lesson 8: Exploring Key Features of a Function and Its Graph A1 M3 Lesson 9: Identifying Key Features of a Function and Its Graph A1 M3 Lesson 10: Representing Functions from Verbal Descriptions A1 M3 Lesson 12: Comparing Functions A1 M3 Lesson 13: Mars Curiosity Rover</p>

Arkansas Mathematics Standards

Aligned Components of *Eureka Math*²

<p>A1.QFE.8 <i>continued</i></p>	<p>A1 M3 Lesson 14: Modeling Elevation as a Function of Time</p> <p>A1 M4 Lesson 1: Falling Objects</p> <p>A1 M4 Lesson 2: Projectile Motion</p> <p>A1 M4 Lesson 3: Analyzing Functions That Model Projectile Motion</p> <p>A1 M4 Lesson 10: Zeros of Functions</p> <p>A1 M4 Lesson 11: Graphing Quadratic Functions from Factored Form</p> <p>A1 M4 Lesson 12: Using Symmetry to Graph Quadratic Functions from Standard Form</p> <p>A1 M4 Lesson 21: Completing the Square to Graph Quadratic Functions</p> <p>A1 M4 Lesson 22: A Summary of Graphing Quadratic Functions</p> <p>A1 M4 Lesson 23: Creating Equations of Quadratic Functions to Model Contexts</p> <p>A1 M4 Lesson 25: Maximizing Area</p>
<p>A1.QFE.9</p> <p>Use factoring and completing the square to create equivalent forms of quadratic functions to reveal key attributes.</p>	<p>A1 M4 Lesson 1: Falling Objects</p> <p>A1 M4 Lesson 2: Projectile Motion</p> <p>A1 M4 Lesson 3: Analyzing Functions That Model Projectile Motion</p> <p>A1 M4 Lesson 5: Solving Equations That Contain Factored Expressions</p> <p>A1 M4 Lesson 6: Solving Quadratic Equations by Factoring: Identities and Guess and Check</p> <p>A1 M4 Lesson 7: Solving Quadratic Equations by Factoring: Splitting the Linear Term</p> <p>A1 M4 Lesson 8: A Summary of Solving Quadratic Equations by Factoring</p> <p>A1 M4 Lesson 9: Creating and Solving Quadratic Equations in One Variable</p> <p>A1 M4 Lesson 10: Zeros of Functions</p> <p>A1 M4 Lesson 11: Graphing Quadratic Functions from Factored Form</p> <p>A1 M4 Lesson 12: Using Symmetry to Graph Quadratic functions from Standard Form</p> <p>A1 M4 Lesson 13: Using Square Roots to Solve Quadratic Equations</p> <p>A1 M4 Lesson 14: Solving Quadratic Equations by Completing the Square</p>

Arkansas Mathematics Standards	Aligned Components of <i>Eureka Math</i> ²
A1.QFE.9 <i>continued</i>	A1 M4 Lesson 15: Deriving the Quadratic Formula A1 M4 Lesson 16: Solving Quadratic Equations A1 M4 Lesson 18: The Quadratic Formula and Zeros of a Function A1 M4 Lesson 22: A Summary of Graphing Quadratic Functions

Quadratic Functions & Equations

Graphing & Transformations

Students graph quadratic functions and explore different transformations of $f(x) = x^2$.

Arkansas Mathematics Standards	Aligned Components of <i>Eureka Math</i> ²
A1.QFE.10 Graph quadratic functions given as an equation or in function notation, labeling key attributes, without technology.	A1 M3 Lesson 4: The Graph of the Equation $y = f(x)$ A1 M3 Lesson 5: Using Pseudocode to Compare Graphs of Functions and Graphs of Equations A1 M3 Lesson 6: Representations of Functions A1 M4 Lesson 4: Graphs of Quadratic Functions A1 M4 Lesson 11: Graphing Quadratic Functions from Factored Form A1 M4 Lesson 12: Using Symmetry to Graph Quadratic Functions from Standard Form A1 M4 Lesson 19: Transforming the Graphs of Quadratic Functions A1 M4 Lesson 23: Creating Equations of Quadratic Functions to Model Contexts A1 M4 Lesson 24: Another Look at Systems of Equations

Arkansas Mathematics Standards	Aligned Components of <i>Eureka Math</i> ²
<p>A1.QFE.11</p> <p>Graph and describe the effect of transformations on quadratic functions.</p>	<p>A1 M3 Lesson 18: Piecewise Linear Functions in Context</p> <p>A1 M3 Lesson 19: Exploring Transformations of the Graphs of Functions</p> <p>A1 M3 Lesson 20: Building New Functions—Translations</p> <p>A1 M3 Lesson 21: Building New Functions—Reflections</p> <p>A1 M3 Lesson 22: Building New Functions—Vertical Scaling</p> <p>A1 M3 Lesson 23: Building New Functions—Horizontal Scaling</p> <p>A1 M3 Lesson 24: A Summary of Transforming the Graph of a Function</p> <p>A1 M4 Lesson 20: Art with Transformations</p> <p>A1 M5 Lesson 12: Using Transformations to Graph Exponential Functions (Bases Greater Than 1)</p> <p>A1 M5 Lesson 13: Using Transformations to Graph Exponential Functions (Bases Between 0 and 1)</p> <p>A1 M5 Lesson 14: Writing Equations for Exponential Functions from Tables or Graphs</p> <p>A1 M5 Lesson 23: Modeling the Temperature of Objects Cooling Over Time</p>
<p>A1.QFE.12</p> <p>Given the graph of a quadratic function, explain the effects of the transformation from the parent function, $y = x^2$.</p>	<p>A1 M3 Lesson 18: Piecewise Linear Functions in Context</p> <p>A1 M3 Lesson 19: Exploring Transformations of the Graphs of Functions</p> <p>A1 M3 Lesson 20: Building New Functions—Translations</p> <p>A1 M3 Lesson 21: Building New Functions—Reflections</p> <p>A1 M3 Lesson 22: Building New Functions—Vertical Scaling</p> <p>A1 M3 Lesson 23: Building New Functions—Horizontal Scaling</p> <p>A1 M3 Lesson 24: A Summary of Transforming the Graph of a Function</p> <p>A1 M4 Lesson 20: Art with Transformations</p> <p>A1 M5 Lesson 12: Using Transformations to Graph Exponential Functions (Bases Greater Than 1)</p> <p>A1 M5 Lesson 13: Using Transformations to Graph Exponential Functions (Bases Between 0 and 1)</p> <p>A1 M5 Lesson 14: Writing Equations for Exponential Functions from Tables or Graphs</p> <p>A1 M5 Lesson 23: Modeling the Temperature of Objects Cooling Over Time</p>

Quadratic Functions & Equations

Statistical Relationships

Students explore quadratic statistical relationships.

Arkansas Mathematics Standards	Aligned Components of <i>Eureka Math</i> ²
<p>A1.QFE.13</p> <p>Write quadratic functions that provide a reasonable fit to data and use them to make predictions with technology.</p>	<p>A1 M2 Lesson 16: Using Lines to Model Bivariate Quantitative Data</p> <p>A1 M2 Lesson 17: Modeling Relationships with a Line</p> <p>A1 M4 Lesson 23: Creating Equations of Quadratic Functions to Model Contexts</p> <p>A1 M4 Lesson 26: Modeling Data with Quadratic Functions</p> <p>A1 M4 Lesson 27: Search and Rescue Helicopter</p> <p>A1 M6 Lesson 1: Analyzing Paint Splatters</p> <p>A1 M6 Lesson 2: Using Residual Plots to Select Models for Data</p> <p>A1 M6 Lesson 3: Populations of US Cities</p>

Exponential Functions & Equations

Create & Solve

Students create and solve problems that model exponential relationships.

Arkansas Mathematics Standards	Aligned Components of <i>Eureka Math</i> ²
<p>A1.EFE.1</p> <p>Represent and solve real-world problems, using exponential equations in one variable.</p>	<p>A1 M1 Lesson 7: Printing Presses</p> <p>A1 M1 Lesson 11: Writing and Solving Equations in One Variable</p> <p>A1 M1 Lesson 13: Solving Linear Inequalities in One Variable</p> <p>A1 M1 Lesson 15: Solving and Graphing Compound Inequalities</p> <p>A1 M4 Lesson 9: Creating and Solving Quadratic Equations in One Variable</p>

Arkansas Mathematics Standards

Aligned Components of *Eureka Math*²

A1.EFE.2

Represent real-world problems (growth, decay, and compound interest), using exponential equations.

- A1 M1 Lesson 7: Printing Presses
- A1 M1 Lesson 11: Writing and Solving Equations in One Variable
- A1 M1 Lesson 13: Solving Linear Inequalities in One Variable
- A1 M1 Lesson 14: Solution Sets of Compound Statements
- A1 M1 Lesson 15: Solving and Graphing Compound Inequalities
- A1 M2 Lesson 1: Solution Sets of Linear Equations in Two Variables
- A1 M2 Lesson 2: Graphing Linear Equations in Two Variables
- A1 M2 Lesson 3: Creating Linear Equations in Two Variables
- A1 M2 Lesson 6: Applications of Linear Equations and Inequalities
- A1 M4 Lesson 9: Creating and Solving Quadratic Equations in One Variable
- A1 M4 Lesson 11: Graphing Quadratic Functions from Factored Form
- A1 M4 Lesson 12: Using Symmetry to Graph Quadratic Functions from Standard Form
- A1 M4 Lesson 23: Creating Equations of Quadratic Functions to Model Contexts
- A1 M4 Lesson 25: Maximizing Area
- A1 M4 Lesson 26: Modeling Data with Quadratic Functions
- A1 M4 Lesson 27: Search and Rescue Helicopter
- A1 M5 Lesson 15: Calculating Interest
- A1 M5 Lesson 18: Modeling Populations
- A1 M5 Lesson 19: Analyzing Exponential Growth
- A1 M5 Lesson 21: World Population Prediction
- A1 M5 Lesson 22: A Closer Look at Populations
- A1 M5 Lesson 23: Modeling the Temperature of Objects Cooling Over Time
- A1 M5 Lesson 24: Modeling an Invasive Species Population
- A1 M6 Lesson 5: Solar System Models
- A1 M6 Lesson 6: Designing a Fundraiser

Arkansas Mathematics Standards	Aligned Components of <i>Eureka Math</i> ²
<p>A1.EFE.3</p> <p>Construct exponential equations from geometric sequences with and without context.</p>	<p>A1 M5 Lesson 5: Arithmetic and Geometric Sequences</p> <p>A1 M5 Lesson 6: Representations of Arithmetic and Geometric Sequences</p> <p>A1 M5 Lesson 7: Sierpinski Triangle</p> <p>A1 M5 Lesson 8: Exponential Functions</p> <p>A1 M5 Lesson 14: Writing Equations for Exponential Functions from Tables or Graphs</p> <p>A1 M5 Lesson 16: Exponential Growth</p> <p>A1 M5 Lesson 17: Exponential Decay</p> <p>A1 M5 Lesson 21: World Population Prediction</p> <p>A1 M5 Lesson 22: A Closer Look at Populations</p> <p>A1 M5 Lesson 23: Modeling the Temperature of Objects Cooling Over Time</p> <p>A1 M5 Lesson 24: Modeling an Invasive Species Population</p> <p>A1 M6 Lesson 4: The Deal</p> <p>A1 M6 Lesson 7: World Record Doughnut</p>

Exponential Functions & Equations

Interpret Key Features

Students interpret key features of equations that model exponential relationships.

Arkansas Mathematics Standards	Aligned Components of <i>Eureka Math</i> ²
<p>A1.EFE.4</p> <p>Determine the domain and range of exponential functions in mathematical problems.</p>	<p>A1 M3 Lesson 1: The Definition of a Function</p> <p>A1 M3 Lesson 2: Representing, Naming, and Evaluating Functions</p> <p>A1 M3 Lesson 3: The Graph of a Function</p> <p>A1 M3 Lesson 4: The Graph of the Equation $y = f(x)$</p> <p>A1 M3 Lesson 5: Using Pseudocode to Compare Graphs of Functions and Graphs of Equations</p> <p>A1 M3 Lesson 6: Representations of Functions</p>
<p>A1.EFE.5</p> <p>Determine reasonable domain and range values of exponential functions representing real-world situations, both continuous and discrete; interpret the solution as reasonable or unreasonable in context.</p>	<p>A1 M3 Lesson 1: The Definition of a Function</p> <p>A1 M3 Lesson 2: Representing, Naming, and Evaluating Functions</p> <p>A1 M3 Lesson 6: Representations of Functions</p> <p>A1 M3 Lesson 17: Step Functions</p> <p>A1 M5 Lesson 1: Exploring Patterns</p> <p>A1 M5 Lesson 2: The Recursive Challenge</p> <p>A1 M5 Lesson 3: Recursive Formulas for Sequences</p> <p>A1 M5 Lesson 4: Explicit Formulas for Sequences</p> <p>A1 M5 Lesson 7: Sierpinski Triangle</p>
<p>A1.EFE.6</p> <p>Interpret the key features of an exponential function that models a relationship between two quantities in a given context.</p>	<p>A1 M3 Lesson 7: Inverses of Linear Functions</p> <p>A1 M3 Lesson 8: Exploring Key Features of a Function and Its Graph</p> <p>A1 M3 Lesson 9: Identifying Key Features of a Function and Its Graph</p> <p>A1 M3 Lesson 10: Representing Functions from Verbal Descriptions</p> <p>A1 M3 Lesson 12: Comparing Functions</p> <p>A1 M3 Lesson 13: Mars Curiosity Rover</p>

Arkansas Mathematics Standards	Aligned Components of <i>Eureka Math</i> ²
<p>A1.EFE.6 <i>continued</i></p>	<p>A1 M3 Lesson 14: Modeling Elevation as a Function of Time</p> <p>A1 M4 Lesson 1: Falling Objects</p> <p>A1 M4 Lesson 2: Projectile Motion</p> <p>A1 M4 Lesson 3: Analyzing Functions That Model Projectile Motion</p> <p>A1 M4 Lesson 11: Graphing Quadratic Functions from Factored Form</p> <p>A1 M4 Lesson 12: Using Symmetry to Graph Quadratic Functions from Standard Form</p> <p>A1 M4 Lesson 21: Completing the Square to Graph Quadratic Functions</p> <p>A1 M4 Lesson 23: Creating Equations of Quadratic Functions to Model Contexts</p> <p>A1 M4 Lesson 25: Maximizing Area</p>
<p>A1.EFE.7</p> <p>Flexibly use different representations of an exponential function, including graphs, tables, and equations.</p>	<p>A1 M3 Lesson 12: Comparing Functions</p> <p>A1 M4 Lesson 12: Using Symmetry to Graph Quadratic Functions from Standard Form</p> <p>A1 M4 Lesson 21: Completing the Square to Graph Quadratic Functions</p> <p>A1 M5 Lesson 11: Graphing Exponential Functions</p> <p>A1 M5 Lesson 12: Using Transformations to Graph Exponential Functions (Bases Greater Than 1)</p> <p>A1 M5 Lesson 13: Using Transformations to Graph Exponential Functions (Bases Between 0 and 1)</p> <p>A1 M5 Lesson 18: Modeling Populations</p>
<p>A1.EFE.8</p> <p>Interpret the quantities in an exponential equation in the context of a real-world problem, including growth, decay, and compound interest.</p>	<p>A1 M5 Lesson 11: Graphing Exponential Functions</p> <p>A1 M5 Lesson 12: Using Transformations to Graph Exponential Functions (Bases Greater Than 1)</p> <p>A1 M5 Lesson 18: Modeling Populations</p>

Exponential Functions & Equations

Graphing

Students graph exponential functions.

Arkansas Mathematics Standards	Aligned Components of <i>Eureka Math</i> ²
<p>A1.EFE.9</p> <p>Graph exponential functions that model real-world problems (growth, decay, and compound interest), showing key attributes.</p>	<p>A1 M5 Lesson 11: Graphing Exponential Functions</p> <p>A1 M5 Lesson 12: Using Transformations to Graph Exponential Functions (Bases Greater Than 1)</p> <p>A1 M5 Lesson 13: Using Transformations to Graph Exponential Functions (Bases Between 0 and 1)</p>

Exponential Functions & Equations

Statistical Relationships

Students explore exponential statistical relationships.

Arkansas Mathematics Standards	Aligned Components of <i>Eureka Math</i> ²
<p>A1.EFE.10</p> <p>Write exponential functions that provide a reasonable fit to data and use them to make predictions with technology.</p>	<p>A1 M2 Lesson 16: Using Lines to Model Bivariate Quantitative Data</p> <p>A1 M2 Lesson 17: Modeling Relationships with a Line</p> <p>A1 M4 Lesson 23: Creating Equations of Quadratic Functions to Model Contexts</p> <p>A1 M4 Lesson 26: Modeling Data with Quadratic Functions</p> <p>A1 M4 Lesson 27: Search and Rescue Helicopter</p> <p>A1 M6 Lesson 1: Analyzing Paint Splatters</p> <p>A1 M6 Lesson 2: Using Residual Plots to Select Models for Data</p> <p>A1 M6 Lesson 3: Populations of US Cities</p>

Statistics & Probability

Numerical Data

Students summarize and describe distributions.

Arkansas Mathematics Standards	Aligned Components of <i>Eureka Math</i> ²
<p>A1.SP.1</p> <p>Use box plots and histograms to determine the statistics appropriate to the shape of the data distribution; compare the center and spread of two or more data sets.</p>	<p>A1 M1 Lesson 19: Distributions and Their Shapes</p> <p>A1 M1 Lesson 20: Describing the Center of a Distribution</p> <p>A1 M1 Lesson 21: Using Center to Compare Data Distributions</p> <p>A1 M1 Lesson 22: Describing Variability in a Univariate Distribution with Standard Deviation</p> <p>A1 M1 Lesson 23: Estimating Variability in Data Distributions</p> <p>A1 M1 Lesson 24: Comparing Distributions of Univariate Data</p>
<p>A1.SP.2</p> <p>Interpret differences in shape, center, and spread in the context of the data sets, accounting for possible effects of extreme data points.</p>	<p>A1 M1 Lesson 19: Distributions and Their Shapes</p> <p>A1 M1 Lesson 20: Describing the Center of a Distribution</p> <p>A1 M1 Lesson 21: Using Center to Compare Data Distributions</p> <p>A1 M1 Lesson 22: Describing Variability in a Univariate Distribution with Standard Deviation</p> <p>A1 M1 Lesson 23: Estimating Variability in Data Distributions</p> <p>A1 M1 Lesson 24: Comparing Distributions of Univariate Data</p>

Statistics & Probability

Bivariate Data

Students will investigate patterns of association in bivariate data.

Arkansas Mathematics Standards	Aligned Components of <i>Eureka Math</i> ²
<p>A1.SP.3</p> <p>Summarize data from two categorical variables in a frequency table; interpret relative frequencies in the context of the data, recognizing data trends and associations.</p>	<p>A1 M2 Lesson 22: Summarizing Bivariate Categorical Data with Two-Way Tables</p> <p>A1 M2 Lesson 23: Bivariate Categorical Data and Conditional Relative Frequency Tables</p> <p>A1 M2 Lesson 24: Conditional Relative Frequencies and Association</p>