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## Algebra I | Arizona Mathematics Standards (2016) Correlation to *Eureka Math*<sup>2</sup>® (2027)

*Eureka Math*<sup>2</sup> 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*<sup>2</sup> 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*<sup>2</sup> 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*<sup>2</sup> 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*<sup>2</sup> 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*<sup>2</sup> 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*<sup>2</sup> 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> <sup>2</sup>
<p><b>MP.1</b> 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><b>MP.2</b> 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><b>MP.3</b> 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><b>MP.4</b> 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><b>MP.5</b> 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><b>MP.6</b> 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><b>MP.7</b> 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><b>MP.8</b> 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>

## The Real Number System

**A1.N-RN.B** Use properties of rational and irrational numbers.

Arizona Mathematics Standards	Aligned Components of <i>Eureka Math</i> <sup>2</sup>
<p><b>A1.N-RN.B.3</b></p> <p>Explain why the sum or product of two rational numbers is rational; that the sum of a rational number and an irrational number is irrational; and that the product of a nonzero rational number and an irrational number is irrational.</p>	<p>A1 M4 Lesson 13: Using Square Roots to Solve Quadratic Equations</p> <p>A1 M4 Lesson 17: Rewriting Square Roots</p>

## Quantities

**A1.N-Q.A** Reason quantitatively and use units to solve problems.

Arizona Mathematics Standards	Aligned Components of <i>Eureka Math</i> <sup>2</sup>
<p><b>A1.N-Q.A.1</b></p> <p>Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays, include utilizing real-world context.</p>	<p>A1 M6 Lesson 5: Solar System Models</p>
<p><b>A1.N-Q.A.2</b></p> <p>Define appropriate quantities for the purpose of descriptive modeling. Include problem-solving opportunities utilizing real-world context.</p>	<p>A1 M4 Lesson 25: Maximizing Area</p> <p>A1 M6 Lesson 5: Solar System Models</p>

Arizona Mathematics Standards	Aligned Components of <i>Eureka Math</i> <sup>2</sup>
<p><b>A1.N-Q.A.3</b></p> <p>Choose a level of accuracy appropriate to limitations on measurement when reporting quantities utilizing real-world context.</p>	<p>A1 M6 Lesson 5: Solar System Models</p> <p>A1 M6 Lesson 6: Polynomial Identities</p>

### Seeing Structure in Expressions

#### A1.A-SSE.A Interpret the structure of expressions.

Arizona Mathematics Standards	Aligned Components of <i>Eureka Math</i> <sup>2</sup>
<p><b>A1.A-SSE.A.1</b></p> <p>Interpret expressions that represent a quantity in terms of its context.</p>	<p><i>This standard is fully addressed by the lessons aligned to its subsections.</i></p>
<p><b>A1.A-SSE.A.1a</b></p> <p>Interpret parts of an expression, such as terms, factors, and coefficients.</p>	<p>A1 M4 Lesson 3: Analyzing Functions That Model Projectile Motion</p>
<p><b>A1.A-SSE.A.1b</b></p> <p>Interpret expressions by viewing one or more of their parts as a single entity.</p>	<p>A1 M5 Lesson 8: Exponential Functions</p> <p>A1 M5 Lesson 16: Exponential Growth</p> <p>A1 M5 Lesson 17: Exponential Decay</p> <p>A1 M5 Lesson 18: Modeling Populations</p> <p>A1 M5 Lesson 23: Modeling the Temperature of Objects Cooling Over Time</p>
<p><b>A1.A-SSE.A.2</b></p> <p>Use structure to identify ways to rewrite numerical and polynomial expressions. Focus on polynomial multiplication and factoring patterns.</p>	<p>A1 M1 Lesson 1: The Growing Pattern of Ducks</p> <p>A1 M1 Lesson 2: The Commutative, Associative, and Distributive Properties</p> <p>A1 M1 Lesson 3: Polynomial Expressions</p> <p>A1 M4 Lesson 3: Analyzing Functions That Model Projectile Motion</p>

Arizona Mathematics Standards	Aligned Components of <i>Eureka Math</i> <sup>2</sup>
<p><b>A1.A-SSE.A.2 <i>continued</i></b></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 14: Solving Quadratic Equations by Completing the Square</p> <p>A1 M4 Lesson 15: Deriving the Quadratic Formula</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>

**Seeing Structure in Expressions**

**A1.A-SSE.B Write expressions in equivalent forms to solve problems.**

Arizona Mathematics Standards	Aligned Components of <i>Eureka Math</i> <sup>2</sup>
<p><b>A1.A-SSE.B.3</b></p> <p>Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.</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 12: Using Symmetry to Graph Quadratic Functions from Standard Form</p>

<b>Arizona Mathematics Standards</b>	<b>Aligned Components of <i>Eureka Math</i><sup>2</sup></b>
<p><b>A1.A-SSE.B.3a</b></p> <p>Factor a quadratic expression to reveal the zeros of the function it defines.</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 22: A Summary of Graphing Quadratic Functions</p>
<p><b>A1.A-SSE.B.3b</b></p> <p>Complete the square in a quadratic expression to reveal the maximum or minimum value of the function it defines.</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>

### Arithmetic with Polynomials and Rational Expressions

#### A1.A-APR.A Perform arithmetic operations on polynomials.

<b>Arizona Mathematics Standards</b>	<b>Aligned Components of <i>Eureka Math</i><sup>2</sup></b>
<p><b>A1.A-APR.A.1</b></p> <p>Understand 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.</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>

## Arithmetic with Polynomials and Rational Expressions

### A1.A-APR.B Understand the relationship between zeros and factors of polynomials.

Arizona Mathematics Standards	Aligned Components of <i>Eureka Math</i> <sup>2</sup>
<p><b>A1.A-APR.B.3</b></p> <p>Identify zeros of polynomials when suitable factorizations are available, and use the zeros to construct a rough graph of the function defined by the polynomial. Focus on quadratic and cubic polynomials in which linear and quadratic factors are available.</p>	<p>A1 M4 Lesson 10: Zeros of Functions</p> <p>A1 M4 Lesson 11: Graphing Quadratic Functions from Factored Form</p> <p><i>Supplementary material is necessary to address identifying zeros of cubic polynomials.</i></p>

## Creating Equations

### A1.A-CED.A Create equations that describe numbers or relationships.

Arizona Mathematics Standards	Aligned Components of <i>Eureka Math</i> <sup>2</sup>
<p><b>A1.A-CED.A.1</b></p> <p>Create equations and inequalities in one variable and use them to solve problems. Include problem-solving opportunities utilizing real-world context. Focus on linear, quadratic, exponential and piecewise-defined functions (limited to absolute value and step).</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 M1 Lesson 16: Solving Absolute Value Equations</p> <p>A1 M1 Lesson 17: Absolute Value Inequalities</p> <p>A1 M1 Lesson 18: Applying Absolute Value</p> <p>A1 M4 Lesson 9: Creating and Solving Quadratic Equations in One Variable</p>

Arizona Mathematics Standards	Aligned Components of <i>Eureka Math</i> <sup>2</sup>
<p><b>A1.A-CED.A.2</b></p> <p>Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.</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 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><b>A1.A-CED.A.3</b></p> <p>Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or non-viable options in a modeling context.</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 6: Applications of Linear Equations and Inequalities</p> <p>A1 M6 Lesson 5: Solar System Models</p>
<p><b>A1.A-CED.A.4</b></p> <p>Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations.</p>	<p>A1 M1 Lesson 12: Rearranging Formulas</p> <p>A1 M4 Lesson 13: Using Square Roots to Solve Quadratic Equations</p>

## Reasoning with Equations and Inequalities

**A1.A-REI.A Understand solving equations as a process of reasoning and explain the reasoning.**

Arizona Mathematics Standards	Aligned Components of <i>Eureka Math</i> <sup>2</sup>
<p><b>A1.A-REI.A.1</b></p> <p>Explain each step in solving linear and quadratic equations as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method.</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>

## Reasoning with Equations and Inequalities

**A1.A-REI.B Solve equations and inequalities in one variable.**

Arizona Mathematics Standards	Aligned Components of <i>Eureka Math</i> <sup>2</sup>
<p><b>A1.A-REI.B.3</b></p> <p>Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.</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 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><b>A1.A-REI.B.4</b></p> <p>Solve quadratic equations in one variable.</p>	<p><i>This standard is fully addressed by the lessons aligned to its subsections.</i></p>

Arizona Mathematics Standards	Aligned Components of <i>Eureka Math</i> <sup>2</sup>
<p><b>A1.A-REI.B.4a</b></p> <p>Use the method of completing the square to transform any quadratic equation in <math>x</math> into an equation of the form <math>(x - k)^2 = q</math> that has the same solutions. Derive the quadratic formula from this form.</p>	<p>A1 M4 Lesson 14: Solving Quadratic Equations by Completing the Square</p> <p>A1 M4 Lesson 15: Deriving the Quadratic Formula</p>
<p><b>A1.A-REI.B.4b</b></p> <p>Solve quadratic equations by inspection (e.g., <math>x^2 = 49</math>), taking square roots, completing the square, the quadratic formula and factoring, as appropriate to the initial form of the equation. Focus on solutions for quadratic equations that have real roots. Include cases that recognize when a quadratic equation has no real solutions.</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 13: Using Square Roots to Solve Quadratic Equations</p> <p>A1 M4 Lesson 14: Solving Quadratic Equations by Completing the Square</p> <p>A1 M4 Lesson 15: Deriving the Quadratic Formula</p> <p>A1 M4 Lesson 16: Solving Quadratic Equations</p> <p>A1 M4 Lesson 18: The Quadratic Formula and Zeros of a Function</p>

## Reasoning with Equations and Inequalities

### A1.A-REI.C Solve systems of equations.

Arizona Mathematics Standards	Aligned Components of <i>Eureka Math</i> <sup>2</sup>
<p><b>A1.A-REI.C.5</b></p> <p>Prove that, given a system of two equations in two variables, replacing one equation by the sum of that equation and a multiple of the other produces a system with the same solutions.</p>	<p>A1 M2 Lesson 9: A New Way to Solve Systems</p>
<p><b>A1.A-REI.C.6</b></p> <p>Solve systems of linear equations exactly and approximately, focusing on pairs of linear equations in two variables. Include problem solving opportunities utilizing real-world context.</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>

## Reasoning with Equations and Inequalities

### A1.A-REI.D Represent and solve equations and inequalities graphically.

Arizona Mathematics Standards	Aligned Components of <i>Eureka Math</i> <sup>2</sup>
<p><b>A1.A-REI.D.10</b></p> <p>Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve, which could be a line.</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>

Arizona Mathematics Standards	Aligned Components of <i>Eureka Math</i> <sup>2</sup>
<p><b>A1.A-REI.D.11</b></p> <p>Explain why the <math>x</math>-coordinates of the points where the graphs of the equations <math>y = f(x)</math> and <math>y = g(x)</math> intersect are the solutions of the equation <math>f(x) = g(x)</math>; find the solutions approximately (e.g., using technology to graph the functions, make tables of values, or find successive approximations). Focus on cases where <math>f(x)</math> and/or <math>g(x)</math> are linear, quadratic, exponential and piecewise-defined functions (limited to absolute value and step).</p>	<p>A1 M3 Lesson 10: Representing Functions from Verbal Descriptions</p> <p>A1 M3 Lesson 15: Piecewise Linear Functions</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><b>A1.A-REI.D.12</b></p> <p>Graph the solutions to a linear inequality in two variables as a half-plane, excluding the boundary in the case of a strict inequality, and graph the solution set to a system of linear inequalities in two variables as the intersection of the corresponding half-planes.</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 5: Solar System Models</p>

## Interpreting Functions

### A1.F-IF.A Understand the concept of a function and use function notation.

Arizona Mathematics Standards	Aligned Components of <i>Eureka Math</i> <sup>2</sup>
<p><b>A1.F-IF.A.1</b></p> <p>Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. If <math>f</math> is a function and <math>x</math> is an element of its domain, then <math>f(x)</math> denotes the output of <math>f</math> corresponding to the input <math>x</math>. The graph of <math>f</math> is the graph of the equation <math>y = f(x)</math>.</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 <math>y = f(x)</math></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 7: Inverses of Linear Functions</p>
<p><b>A1.F-IF.A.2</b></p> <p>Evaluate a function for inputs in the domain, and interpret statements that use function notation in terms of a 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 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>
<p><b>A1.F-IF.A.3</b></p> <p>Recognize that sequences are functions, sometimes defined recursively, whose domain is a subset of the integers.</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>

## Interpreting Functions

### A1.F-IF.B Interpret functions that arise in applications in terms of the context.

Arizona Mathematics Standards	Aligned Components of <i>Eureka Math</i> <sup>2</sup>
<p><b>A1.F-IF.B.4</b></p> <p>For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Include problem-solving opportunities utilizing real-world context. Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums. Focus on linear, quadratic, exponential and piecewise-defined functions (limited to absolute value and step).</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 11: Using Graphs to Solve Equations</p> <p>A1 M3 Lesson 12: Comparing Functions</p> <p>A1 M3 Lesson 13: Mars Curiosity Rover</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><b>A1.F-IF.B.5</b></p> <p>Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes.</p>	<p>A1 M3 Lesson 3: The Graph of a Function</p> <p>A1 M3 Lesson 13: Mars Curiosity Rover</p> <p>A1 M3 Lesson 16: The Absolute Value Function</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 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>

**Arizona Mathematics Standards**

**Aligned Components of *Eureka Math*<sup>2</sup>**

<p><b>A1.F-IF.B.6</b></p> <p>Calculate and interpret the average rate of change of a continuous function (presented symbolically or as a table) on a closed interval. Estimate the rate of change from a graph. Include problem-solving opportunities utilizing real-world context. Focus on linear, quadratic, exponential and piecewise-defined functions (limited to absolute value and step).</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 19: Analyzing Exponential Growth</p> <p>A1 M5 Lesson 20: Comparing Growth of Functions</p> <p>A1 M5 Lesson 24: Modeling an Invasive Species Population</p>
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## Interpreting Functions

### A1.F-IF.C Analyze functions using different representations.

Arizona Mathematics Standards	Aligned Components of <i>Eureka Math</i> <sup>2</sup>
<p><b>A1.F-IF.C.7</b></p> <p>Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases. Focus on linear, quadratic, exponential and piecewise-defined functions (limited to absolute value and step).</p>	<p>A1 M3 Lesson 4: The Graph of the Equation <math>y = f(x)</math></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 19: Exploring Transformations of the Graphs of Functions</p> <p>A1 M3 Lesson 23: Building New Functions—Horizontal Scaling</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 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><b>A1.F-IF.C.8</b></p> <p>Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function.</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 12: Using Symmetry to Graph Quadratic Functions from Standard Form</p>

Arizona Mathematics Standards	Aligned Components of <i>Eureka Math</i> <sup>2</sup>
<p><b>A1.F-IF.C.8a</b></p> <p>Use the process of factoring and completing the square of a quadratic function to show zeros, extreme values, and symmetry of the graph, and interpret these in terms of a context.</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 22: A Summary of Graphing Quadratic Functions</p>
<p><b>A1.F-IF.C.9</b></p> <p>Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). Focus on linear, quadratic, exponential and piecewise-defined functions (limited to absolute value and step).</p>	<p>A1 M3 Lesson 11: Using Graphs to Solve Equations</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>

## Building Functions

**A1.F-BF.A Build a function that models a relationship between two quantities.**

Arizona Mathematics Standards	Aligned Components of <i>Eureka Math</i> <sup>2</sup>
<p><b>A1.F-BF.A.1</b></p> <p>Write a function that describes a relationship between two quantities. Determine an explicit expression, a recursive process, or steps for calculation from real-world context. Focus on linear, quadratic, exponential and piecewise-defined functions (limited to absolute value and step).</p>	<p>A1 M3 Lesson 17: Step Functions</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 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 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: Representation 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 5: Solar System Models</p> <p>A1 M6 Lesson 6: Designing a Fundraiser</p> <p>A1 M6 Lesson 7: World Record Doughnut</p>

## Building Functions

### A1.F-BF.B Build new functions from existing functions.

Arizona Mathematics Standards	Aligned Components of <i>Eureka Math</i> <sup>2</sup>
<p><b>A1.F-BF.B.3</b></p> <p>Identify the effect on the graph of replacing <math>f(x)</math> by <math>f(x) + k</math>, <math>kf(x)</math>, and <math>f(x + k)</math> for specific values of <math>k</math> (both positive and negative); find the value of <math>k</math> given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph. Focus on linear, quadratic, exponential and piecewise-defined functions (limited to absolute value and step).</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, Quadratic, and Exponential Models

**A1.F-LE.A Construct and compare linear, quadratic, and exponential models and solve problems.**

Arizona Mathematics Standards	Aligned Components of <i>Eureka Math</i> <sup>2</sup>
<p><b>A1.F-LE.A.1</b></p> <p>Distinguish between situations that can be modeled with linear functions and with exponential functions.</p>	<p>A1 M5 Lesson 15: Calculating Interest</p> <p>A1 M5 Lesson 18: Modeling Populations</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> <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><b>A1.F-LE.A.1a</b></p> <p>Prove that linear functions grow by equal differences over equal intervals, and that exponential functions grow by equal factors over equal intervals.</p>	<p>A1 M5 Lesson 19: Analyzing Exponential Growth</p>
<p><b>A1.F-LE.A.1b</b></p> <p>Recognize situations in which one quantity changes at a constant rate per unit interval relative to another.</p>	<p>A1 M5 Lesson 15: Calculating Interest</p> <p>A1 M5 Lesson 18: Modeling Populations</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>

Arizona Mathematics Standards	Aligned Components of <i>Eureka Math</i> <sup>2</sup>
<p><b>A1.F-LE.A.1c</b></p> <p>Recognize situations in which a quantity grows or decays by a constant percent rate per unit interval relative to another.</p>	<p>A1 M5 Lesson 15: Calculating Interest</p> <p>A1 M5 Lesson 18: Modeling Populations</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>
<p><b>A1.F-LE.A.2</b></p> <p>Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or input/output pairs.</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 5: Solar System Models</p> <p>A1 M6 Lesson 6: Designing a Fundraiser</p> <p>A1 M6 Lesson 7: World Record Doughnut</p>
<p><b>A1.F-LE.A.3</b></p> <p>Observe, using graphs and tables, that a quantity increasing exponentially eventually exceeds a quantity increasing linearly or quadratically.</p>	<p>A1 M5 Lesson 20: Comparing Growth of Functions</p>

## Linear, Quadratic, and Exponential Models

**A1.F-LE.B Interpret expressions for functions in terms of the situation they model.**

<b>Arizona Mathematics Standards</b>	<b>Aligned Components of <i>Eureka Math</i><sup>2</sup></b>
<p><b>A1.F-LE.B.5</b></p> <p>Interpret the parameters in a linear or exponential function with integer exponents utilizing real-world context.</p>	<p>A1 M5 Lesson 18: Modeling Populations</p> <p>A1 M5 Lesson 19: Analyzing Exponential Growth</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>

## Interpreting Categorical and Quantitative Data

**A1.S-ID.A Summarize, represent, and interpret data on a single count or measurement variable.**

<b>Arizona Mathematics Standards</b>	<b>Aligned Components of <i>Eureka Math</i><sup>2</sup></b>
<p><b>A1.S-ID.A.1</b></p> <p>Represent real-value data with plots for the purpose of comparing two or more data sets.</p>	<p>A1 M1 Lesson 18: Applying Absolute Value</p> <p>A1 M1 Lesson 19: Distributions and Their Shapes</p> <p>A1 M1 Lesson 20: Describing the Center of a Distribution</p>
<p><b>A1.S-ID.A.2</b></p> <p>Use statistics appropriate to the shape of the data distribution to compare center (median, mean) and spread (interquartile range, standard deviation) of two or more different data sets.</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>

Arizona Mathematics Standards	Aligned Components of <i>Eureka Math</i> <sup>2</sup>
<p><b>A1.S-ID.A.3</b></p> <p>Interpret differences in shape, center, and spread in the context of the data sets, accounting for possible effects of outliers if present.</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>

### Interpreting Categorical and Quantitative Data

**A1.S-ID.B Summarize, represent, and interpret data on two categorical and quantitative variables.**

Arizona Mathematics Standards	Aligned Components of <i>Eureka Math</i> <sup>2</sup>
<p><b>A1.S-ID.B.5</b></p> <p>Summarize categorical data for two categories in two-way frequency tables. Interpret relative frequencies in the context of the data, including joint, marginal, and conditional relative frequencies. Recognize possible associations and trends in the data.</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>
<p><b>A1.S-ID.B.6</b></p> <p>Represent data on two quantitative variables on a scatter plot, and describe how the quantities are related.</p>	<p>A1 M2 Lesson 15: Relationships Between Quantitative Variables</p> <p>A1 M2 Lesson 21: Analyzing Bivariate Quantitative Data</p>

Arizona Mathematics Standards	Aligned Components of <i>Eureka Math</i> <sup>2</sup>
<p><b>A1.S-ID.B.6a</b></p> <p>Fit a function to the data; use functions fitted to data to solve problems in the context of the data. Focus on linear models.</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>
<p><b>A1.S-ID.B.6b</b></p> <p>Informally assess the fit of a function by plotting and analyzing residuals.</p>	<p>A1 M2 Lesson 18: Calculating and Analyzing Residuals</p> <p>A1 M2 Lesson 19: Analyzing Residuals</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>

## Interpreting Categorical and Quantitative Data

**A1.S-ID.C Interpret linear models.**

Arizona Mathematics Standards	Aligned Components of <i>Eureka Math</i> <sup>2</sup>
<p><b>A1.S-ID.C.7</b></p> <p>Interpret the slope as a rate of change and the constant term of a linear model in the context of the data.</p>	<p>A1 M2 Lesson 16: Using Lines to Model Bivariate Quantitative Data</p> <p>A1 M2 Lesson 21: Analyzing Bivariate Quantitative Data</p>

Arizona Mathematics Standards	Aligned Components of <i>Eureka Math</i> <sup>2</sup>
<p><b>A1.S-ID.C.8</b></p> <p>Compute and interpret the correlation coefficient of a linear relationship.</p>	<p>A1 M2 Lesson 20: Interpreting Correlation</p> <p>A1 M2 Lesson 21: Analyzing Bivariate Quantitative Data</p>
<p><b>A1.S-ID.C.9</b></p> <p>Distinguish between correlation and causation.</p>	<p>A1 M2 Lesson 20: Interpreting Correlation</p> <p>A1 M2 Lesson 21: Analyzing Bivariate Quantitative Data</p>

### Conditional Probability and the Rules of Probability

**A1.S-CP.A Understand independence and conditional probability and use them to interpret data.**

Arizona Mathematics Standards	Aligned Components of <i>Eureka Math</i> <sup>2</sup>
<p><b>A1.S-CP.A.1</b></p> <p>Describe events as subsets of a sample space using characteristics of the outcomes, or as unions, intersections, or complements of other events.</p>	<p><i>Supplemental material is necessary to address this standard.</i></p>
<p><b>A1.S-CP.A.2</b></p> <p>Use the Multiplication Rule for independent events to understand that two events <math>A</math> and <math>B</math> are independent if the probability of <math>A</math> and <math>B</math> occurring together is the product of their probabilities, and use this characterization to determine if they are independent.</p>	<p><i>Supplemental material is necessary to address this standard.</i></p>