Algebra I | Alabama Standards for Mathematical Content Correlation to *Eureka Math²®*

When the original *Eureka Math®* curriculum was released, it quickly became the most widely used K–5 mathematics curriculum in the country. Now, the Great Minds® teacher-writers have created *Eureka Math²®*, a groundbreaking new curriculum that helps teachers deliver exponentially better math instruction while still providing students with the same deep understanding of and fluency in math. *Eureka Math²* carefully sequences mathematical content to maximize vertical alignment—a principle tested and proven to be essential in students' mastery of math—from kindergarten through high school.

While this innovative new curriculum includes all the trademark *Eureka Math* aha moments that have been delighting students and teachers for years, it also boasts these exciting new features:

Teachability

Eureka Math² 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 right into the teacher materials.

Accessibility

Eureka Math² incorporates Universal Design for Learning principles so all learners can access the mathematics and take on challenging math concepts. Student supports are built into the instructional design and are clearly identified in the *Teach* book. Further, the curriculum carries a focus on readability. By eliminating unnecessary words and using simple, clear sentences, the *Eureka Math²* 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.

Digital Engagement

The digital elements of *Eureka Math²* add to students' engagement with the math. The curriculum provides teachers with digital slides for each lesson. In addition, each grade level includes wordless videos that spark students' interest and curiosity. Students at all levels work through mathematical explorations that help lead to their own mathematical discoveries. Digital lessons and videos provide opportunities for students to wonder, explore, and make sense of mathematics, which contributes to the development of a strong, positive mathematical identity.

Standards for Mathematical Practice	Aligned Components of *Eureka Math²*
MP.1 Make sense of problems and persevere in solving them.	Lessons in every module engage students in mathematical practices. These are indicated in margin notes included with every lesson.
MP.2 Reason abstractly and quantitatively.	Lessons in every module engage students in mathematical practices. These are indicated in margin notes included with every lesson.
MP.3 Construct viable arguments and critique the reasoning of others.	Lessons in every module engage students in mathematical practices. These are indicated in margin notes included with every lesson.
MP.4 Model with mathematics.	Lessons in every module engage students in mathematical practices. These are indicated in margin notes included with every lesson.
MP.5 Use appropriate tools strategically.	Lessons in every module engage students in mathematical practices. These are indicated in margin notes included with every lesson.
MP.6 Attend to precision.	Lessons in every module engage students in mathematical practices. These are indicated in margin notes included with every lesson.
MP.7 Look for and make use of structure.	Lessons in every module engage students in mathematical practices. These are indicated in margin notes included with every lesson.
MP.8 Look for and express regularity in repeated reasoning.	Lessons in every module engage students in mathematical practices. These are indicated in margin notes included with every lesson.

Number and Quantity

Together, irrational numbers and rational numbers complete the real number system, representing all points on the number line, while there exist numbers beyond the real numbers called complex numbers.

Alabama Standards for Mathematical Content	Aligned Components of *Eureka Math²*
AI.NQ.1 Explain how the meaning of rational exponents follows from extending the properties of integer exponents to those values, allowing for an additional notation for radicals using rational exponents.	A1 M5 Lesson 9: Unit Fraction Exponents A1 M5 Lesson 10: Rational Exponents
AI.NQ.2 Rewrite expressions involving radicals and rational exponents using the properties of exponents.	A1 M5 Lesson 9: Unit Fraction Exponents A1 M5 Lesson 10: Rational Exponents
AI.NQ.3 Define the imaginary number i such that $i^2 = -1$.	*Supplemental material is necessary to address this standard.*

Algebra and Functions

Focus 1: Algebra

Expressions can be rewritten in equivalent forms by using algebraic properties, including properties of addition, multiplication, and exponentiation, to make different characteristics or features visible.

Alabama Standards for Mathematical Content	Aligned Components of *Eureka Math²*
AI.AF.1.4 Interpret linear, quadratic, and exponential expressions in terms of a context by viewing one or more of their parts as a single entity.	A1 M3 Lesson 17: Piecewise Linear Functions in Context A1 M4 Lesson 3: Analyzing Functions That Model Projectile Motion A1 M5 Lesson 8: Exponential Functions A1 M5 Lesson 16: Exponential Growth A1 M5 Lesson 17: Exponential Decay A1 M5 Lesson 18: Modeling Populations A1 M5 Lesson 23: Modeling the Temperature of Objects Cooling Over Time
AI.AF.1.5 Use the structure of an expression to identify ways to rewrite it.	A1 M1 Lesson 1: The Growing Pattern of Ducks A1 M1 Lesson 2: The Commutative, Associative, and Distributive Properties A1 M1 Lesson 3: Polynomial Expressions A1 M4 Lesson 3: Analyzing Functions That Model Projectile Motion A1 M4 Topic B: Factoring A1 M4 Lesson 14: Solving Quadratic Equations by Completing the Square A1 M4 Lesson 15: Deriving the Quadratic Formula A1 M5 Lesson 11: Graphing Exponential Functions A1 M5 Lesson 12: Using Transformations to Graph Exponential Functions (Bases Greater Than 1) A1 M5 Lesson 18: Modeling Populations

Alabama Standards for Mathematical Content	Aligned Components of *Eureka Math²*
AI.AF.1.6 Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.	*This standard is fully addressed by the lessons aligned to its subsections.*
AI.AF.1.6.a Factor quadratic expressions with leading coefficients of one, and use the factored form to reveal the zeros of the function it defines.	A1 M4 Lesson 10: Zeros of Functions A1 M4 Lesson 11: Graphing Quadratic Functions from Factored Form A1 M4 Lesson 22: A Summary of Graphing Quadratic Functions
AI.AF.1.6.b Use the vertex form of a quadratic expression to reveal the maximum or minimum value and the axis of symmetry of the function it defines; complete the square to find the vertex form of quadratics with a leading coefficient of one.	A1 M4 Lesson 21: Completing the Square to Graph Quadratic Functions A1 M4 Lesson 22: A Summary of Graphing Quadratic Functions
AI.AF.1.6.c Use the properties of exponents to transform expressions for exponential functions.	A1 M5 Lesson 11: Graphing Exponential Functions A1 M5 Lesson 12: Using Transformations to Graph Exponential Functions (Bases Greater Than 1) A1 M5 Lesson 18: Modeling Populations

Alabama Standards for Mathematical Content	Aligned Components of *Eureka Math²*
AI.AF.1.7 Add, subtract, and multiply polynomials, showing that polynomials form a system analogous to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication.	A1 M1 Lesson 3: Polynomial Expressions A1 M1 Lesson 4: Adding and Subtracting Polynomial Expressions A1 M1 Lesson 5: Multiplying Polynomial Expressions A1 M1 Lesson 6: Polynomial Identities

Algebra and Functions

Focus 1: Algebra

Finding solutions to an equation, inequality, or system of equations or inequalities requires the checking of candidate solutions, whether generated analytically or graphically, to ensure that solutions are found and that those found are not extraneous.

Alabama Standards for Mathematical Content	Aligned Components of *Eureka Math²*
AI.AF.1.8 Explain why extraneous solutions to an equation involving absolute values may arise and how to check to be sure that a candidate solution satisfies an equation.	A1 M1 Lesson 16: Solving Absolute Value Equations

Algebra and Functions

Focus 1: Algebra

The structure of an equation or inequality (including, but not limited to, one-variable linear and quadratic equations, inequalities, and systems of linear equations in two variables) can be purposefully analyzed (with and without technology) to determine an efficient strategy to find a solution, if one exists, and then to justify the solution.

Alabama Standards for Mathematical Content	Aligned Components of *Eureka Math²*
AI.AF.1.9 Select an appropriate method to solve a quadratic equation in one variable.	*This standard is fully addressed by the lessons aligned to its subsections.*
AI.AF.1.9.a Use the method of completing the square to transform any quadratic equation in x into an equation of the form $(x-p)^2 = q$ that has the same solutions. Explain how the quadratic formula is derived from this form.	A1 M4 Lesson 14: Solving Quadratic Equations by Completing the Square A1 M4 Lesson 15: Deriving the Quadratic Formula
AI.AF.1.9.b Solve quadratic equations by inspection (such as $x^2 = 49$), taking square roots, completing the square, the quadratic formula, and factoring, as appropriate to the initial form of the equation, and recognize that some solutions may not be real.	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

Alabama Standards for Mathematical Content	Aligned Components of *Eureka Math²*
AI.AF.1.10 Select an appropriate method to solve a system of two linear equations in two variables.	*This standard is fully addressed by the lessons aligned to its subsections.*
AI.AF.1.10.a Solve a system of two equations in two variables by using linear combinations; contrast situations in which use of linear combinations is more efficient with those in which substitution is more efficient.	A1 M2 Lesson 7: Low-Flow Showerhead A1 M2 Lesson 8: Systems of Linear Equations in Two Variables A1 M2 Lesson 9: A New Way to Solve Systems A1 M2 Lesson 10: The Elimination Method A1 M2 Lesson 11: Applications of Systems of Equations
AI.AF.1.10.b Contrast solutions to a system of two linear equations in two variables produced by algebraic methods with graphical and tabular methods.	A1 M2 Lesson 8: Systems of Linear Equations in Two Variables

Algebra and Functions

Focus 1: Algebra

Expressions, equations, and inequalities can be used to analyze and make predictions, both within mathematics and as mathematics is applied in different contexts—in particular, contexts that arise in relation to linear, quadratic, and exponential situations.

Alabama Standards for Mathematical Content	Aligned Components of *Eureka Math²*
AI.AF.1.11 Create equations and inequalities in one variable and use them to solve problems in context, either exactly or approximately.	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 17: Solving Absolute Value Inequalities A1 M4 Lesson 9: Creating and Solving Quadratic Equations in One Variable
AI.AF.1.12 Create equations in two or more variables to represent relationships between quantities in context; graph equations on coordinate axes with labels and scales and use them to make predictions.	A1 M2 Lesson 3: Creating Linear Equations in Two Variables A1 M2 Lesson 6: Applications of Linear Equations and Inequalities 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
AI.AF.1.13 Represent constraints by equations and/or inequalities, and solve systems of equations and/or inequalities, interpreting solutions as viable or nonviable options in a modeling context.	A1 M1 Lesson 11: Writing and Solving Equations 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 6: Applications of Linear Equations and Inequalities A1 M6 Lesson 5: Solar System Models A1 M6 Lesson 6: Designing a Fundraiser

Algebra and Functions

Focus 2: Connecting Algebra to Functions

Functions shift the emphasis from a point-by-point relationship between two variables (input/output) to considering an entire set of ordered pairs (where each first element is paired with exactly one second element) as an entity with its own features and characteristics.

Alabama Standards for Mathematical Content	Aligned Components of *Eureka Math²*
AI.AF.2.14 Given a relation defined by an equation in two variables, identify the graph of the relation as the set of all its solutions plotted in the coordinate plane.	A1 M2 Lesson 1: Solution Sets of Linear Equations in Two Variables A1 M2 Lesson 2: Graphing Linear Equations in Two Variables
AI.AF.2.15 Define a function as a mapping from one set (called the domain) to another set (called the range) that assigns to each element of the domain exactly one element of the range.	A1 M3 Topic A: Functions and Their Graphs
AI.AF.2.15.a Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.	A1 M3 Lesson 1: The Definition of a Function A1 M3 Lesson 2: Representing, Naming, and Evaluating Functions A1 M3 Lesson 6: Representations of Functions A1 M3 Lesson 16: Step Functions A1 M5 Lesson 1: Exploring Patterns A1 M5 Lesson 2: The Recursive Challenge A1 M5 Lesson 3: Recursive Formulas for Sequences A1 M5 Lesson 4: Explicit Formulas for Sequences A1 M5 Lesson 7: Sierpinski Triangle

Alabama Standards for Mathematical Content	Aligned Components of *Eureka Math²*
AI.AF.2.15.b Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes.	A1 M3 Lesson 3: The Graph of a Function A1 M3 Lesson 13: Modeling Elevation as a Function of Time A1 M3 Lesson 16: Step Functions A1 M4 Lesson 2: Projectile Motion A1 M4 Lesson 3: Analyzing Functions That Model Projectile Motion A1 M4 Lesson 23: Creating Equations of Quadratic Functions to Model Contexts
AI.AF.2.16 Compare and contrast relations and functions represented by equations, graphs, or tables that show related values; determine whether a relation is a function. Explain that a function f is a special kind of relation defined by the equation $y = f(x)$.	A1 M3 Lesson 1: The Definition of a Function
AI.AF.2.17 Combine different types of standard functions to write, evaluate, and interpret functions in context.	*This standard is addressed by the lessons aligned to its subsections.*
AI.AF.2.17.a Use arithmetic operations to combine different types of standard functions to write and evaluate functions.	A1 M6 Lesson 4: The Deal A1 M6 Lesson 7: World Record Doughnut

Alabama Standards for Mathematical Content	Aligned Components of *Eureka Math²*
AI.AF.2.17.b Use function composition to combine different types of standard functions to write and evaluate functions.	*Supplemental material is necessary to address this standard.*

Algebra and Functions

Focus 2: Connecting Algebra to Functions

Graphs can be used to obtain exact or approximate solutions of equations, inequalities, and systems of equations and inequalities—including systems of linear equations in two variables and systems of linear and quadratic equations (given or obtained by using technology).

Alabama Standards for Mathematical Content	Aligned Components of *Eureka Math²*
AI.AF.2.18 Solve systems consisting of linear and/or quadratic equations in two variables graphically, using technology where appropriate.	A1 M4 Lesson 24: Another Look at Systems of Equations
AI.AF.2.19 Explain why the x-coordinates of the points where the graphs of the equations $y = f(x)$ and $y = g(x)$ intersect are the solutions of the equation $f(x) = g(x)$.	*This standard is fully addressed by the lessons aligned to its subsection.*

Alabama Standards for Mathematical Content	Aligned Components of *Eureka Math²*
AI.AF.2.19.a Find the approximate solutions of an equation graphically, using tables of values, or finding successive approximations, using technology where appropriate.	A1 M3 Lesson 10: Using Graphs to Solve Equations A1 M3 Lesson 15: The Absolute Value Function A1 M4 Lesson 24: Another Look at Systems of Equations A1 M5 Lesson 13: Using Transformations to Graph Exponential Functions (Bases Between 0 and 1) A1 M5 Lesson 20: Comparing Growth of Functions
AI.AF.2.20 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, using technology where appropriate.	A1 M2 Lesson 4: Solution Sets of Linear Inequalities in Two Variables A1 M2 Lesson 5: Graphing Linear Inequalities in Two Variables A1 M2 Lesson 12: Solution Sets of Systems of Linear Inequalities A1 M2 Lesson 13: Graphing Solution Sets of Systems of Linear Inequalities A1 M2 Lesson 14: Applications of Systems of Linear Inequalities A1 M6 Lesson 6: Designing a Fundraiser

Algebra and Functions

Focus 3: Functions

Functions can be described by using a variety of representations: mapping diagrams, function notation (e.g., $f(x) = x^2$), recursive definitions, tables, and graphs.

Alabama Standards for Mathematical Content	Aligned Components of *Eureka Math²*
AI.AF.3.21 Compare properties of two functions, each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions).	A1 M3 Lesson 11: Comparing Functions A1 M4 Lesson 12: Using Symmetry to Graph Quadratic Functions from Standard Form A1 M4 Lesson 21: Completing the Square to Graph Quadratic Functions

Alabama Standards for Mathematical Content	Aligned Components of *Eureka Math²*
AI.AF.3.22 Define sequences as functions, including recursive definitions, whose domain is a subset of the integers.	A1 M5 Lesson 1: Exploring Patterns A1 M5 Lesson 2: The Recursive Challenge A1 M5 Lesson 3: Recursive Formulas for Sequences A1 M5 Lesson 4: Explicit Formulas for Sequences A1 M5 Lesson 5: Arithmetic and Geometric Sequences A1 M5 Lesson 6: Representations of Arithmetic and Geometric Sequences
AI.AF.3.22.a Write explicit and recursive formulas for arithmetic and geometric sequences and connect them to linear and exponential functions.	A1 M5 Lesson 5: Arithmetic and Geometric Sequences A1 M5 Lesson 6: Representations of Arithmetic and Geometric Sequences A1 M5 Lesson 7: Sierpinski Triangle

Algebra and Functions

Focus 3: Functions

Functions that are members of the same family have distinguishing attributes (structure) common to all functions within that family.

Alabama Standards for Mathematical Content	Aligned Components of *Eureka Math²*
AI.AF.3.23 Identify the effect on the graph of replacing $f(x)$ by $f(x) + k$, $k \cdot f(x)$, $f(k \cdot x)$, and $f(x + k)$ for specific values of k (both positive and negative); find the value of k given the graphs. Experiment with cases and explain the effects on the graph, using technology as appropriate.	A1 M3 Topic D: Transformations of Functions A1 M4 Lesson 20: Art with Transformations A1 M5 Lesson 12: Using Transformations to Graph Exponential Functions (Bases Greater Than 1) A1 M5 Lesson 13: Using Transformations to Graph Exponential Functions (Bases Between 0 and 1) A1 M5 Lesson 14: Writing Equations for Exponential Functions from Tables or Graphs A1 M5 Lesson 23: Modeling the Temperature of Objects Cooling Over Time

Alabama Standards for Mathematical Content	Aligned Components of *Eureka Math*²
AI.AF.3.24 Distinguish between situations that can be modeled with linear functions and those that can be modeled with exponential functions.	A1 M5 Lesson 15: Calculating Interest A1 M5 Lesson 18: Modeling Populations A1 M5 Lesson 21: World Population Prediction A1 M5 Lesson 22: A Closer Look at Populations A1 M5 Lesson 24: Modeling an Invasive Species Population A1 M6 Topic A: Modeling Bivariate Quantitative Data
AI.AF.3.24.a Show that linear functions grow by equal differences over equal intervals, while exponential functions grow by equal factors over equal intervals.	A1 M5 Lesson 19: Analyzing Exponential Growth
AI.AF.3.24.b Define linear functions to represent situations in which one quantity changes at a constant rate per unit interval relative to another.	A1 M5 Lesson 15: Calculating Interest A1 M5 Lesson 18: Modeling Populations A1 M5 Lesson 21: World Population Prediction A1 M5 Lesson 22: A Closer Look at Populations A1 M5 Lesson 24: Modeling an Invasive Species Population
AI.AF.3.24.c Define exponential functions to represent situations in which a quantity grows or decays by a constant percent rate per unit interval relative to another.	A1 M5 Lesson 15: Calculating Interest A1 M5 Lesson 21: World Population Prediction A1 M5 Lesson 22: A Closer Look at Populations A1 M5 Lesson 24: Modeling an Invasive Species Population

Alabama Standards for Mathematical Content	Aligned Components of *Eureka Math²*
AI.AF.3.25 Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table).	A1 M5 Lesson 8: Exponential Functions A1 M5 Lesson 14: Writing Equations for Exponential Functions from Tables or Graphs A1 M5 Lesson 16: Exponential Growth A1 M5 Lesson 17: Exponential Decay A1 M5 Topic D: Comparing Linear and Exponential Models A1 M6 Lesson 4: The Deal A1 M6 Lesson 7: World Record Doughnut
AI.AF.3.26 Use graphs and tables to show that a quantity increasing exponentially eventually exceeds a quantity increasing linearly or quadratically.	A1 M5 Lesson 20: Comparing Growth of Functions
AI.AF.3.27 Interpret the parameters of functions in terms of a context.	A1 M5 Lesson 18: Modeling Populations A1 M5 Lesson 19: Analyzing Exponential Growth A1 M5 Lesson 23: Modeling the Temperature of Objects Cooling Over Time A1 M5 Lesson 24: Modeling an Invasive Species Population

Algebra and Functions

Focus 3: Functions

Functions can be represented graphically and key features of the graphs, including zeros, intercepts, and, when relevant, rate of change and maximum/minimum values, can be associated with and interpreted in terms of the equivalent symbolic representation.

Alabama Standards for Mathematical Content	Aligned Components of *Eureka Math²*
AI.AF.3.28 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.	A1 M3 Lesson 7: Exploring Key Features of a Function and Its Graph A1 M3 Lesson 8: Identifying Key Features of a Function and Its Graph A1 M3 Lesson 9: Representing Functions from Verbal Descriptions A1 M3 Lesson 11: Comparing Functions A1 M3 Lesson 12: Mars Curiosity Rover A1 M3 Lesson 13: 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
AI.AF.3.29 Calculate and interpret the average rate of change of a function (presented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph.	A1 M4 Lesson 1: Falling Objects A1 M4 Lesson 3: Analyzing Functions That Model Projectile Motion A1 M4 Lesson 12: Using Symmetry to Graph Quadratic Functions from Standard Form A1 M5 Lesson 19: Analyzing Exponential Growth A1 M5 Lesson 20: Comparing Growth of Functions A1 M5 Lesson 24: Modeling an Invasive Species Population

Alabama Standards for Mathematical Content	Aligned Components of *Eureka Math²*
AI.AF.3.30 Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases.	*This standard is fully addressed by the lessons aligned to its subsections.*
AI.AF.3.30.a Graph linear and quadratic functions and show intercepts, maxima, and minima.	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
AI.AF.3.30.b Graph piecewise-defined functions, including step functions and absolute value functions.	A1 M3 Topic C: Piecewise-Defined Linear Functions A1 M3 Lesson 19: Building New Functions—Translations A1 M3 Lesson 23: A Summary of Transforming the Graph of a Function
AI.AF.3.30.c Graph exponential functions, showing intercepts and end behavior.	A1 M5 Lesson 11: Graphing Exponential Functions A1 M5 Lesson 12: Using Transformations to Graph Exponential Functions (Bases Greater Than 1) A1 M5 Lesson 13: Using Transformations to Graph Exponential Functions (Bases Between 0 and 1)

Algebra and Functions

Focus 3: Functions

Functions model a wide variety of real situations and can help students understand the processes of making and changing assumptions, assigning variables, and finding solutions to contextual problems.

Alabama Standards for Mathematical Content	Aligned Components of *Eureka Math²*
AI.AF.3.31 Use the mathematical modeling cycle to solve real-world problems involving linear, quadratic, exponential, absolute value, and linear piecewise functions.	A1 M3 Lesson 12: Mars Curiosity Rover A1 M4 Lesson 25: Maximizing Area A1 M4 Lesson 27: Search and Rescue Helicopter A1 M5 Lesson 24: Modeling an Invasive Species Population A1 M6 Topic B: Developing Models for Contexts

Data Analysis, Statistics, and Probability

Focus 1: Quantitative Literacy

Mathematical and statistical reasoning about data can be used to evaluate conclusions and assess risks.

Alabama Standards for Mathematical Content	Aligned Components of *Eureka Math²*
AI.DSP.1.32 Use mathematical and statistical reasoning with bivariate categorical data in order to draw conclusions and assess risk.	A1 M2 Topic D: Categorical Data on Two Variables

Data Analysis, Statistics, and Probability

Focus 1: Quantitative Literacy

Making and defending informed, data-based decisions is a characteristic of a quantitatively literate person.

Alabama Standards for Mathematical Content	Aligned Components of *Eureka Math²*
AI.DSP.1.33 Design and carry out an investigation to determine whether there appears to be an association between two categorical variables, and write a persuasive argument based on the results of the investigation.	*Supplemental material is necessary to address this standard.*

Data Analysis, Statistics, and Probability

Focus 2: Visualizing and Summarizing Data

Data arise from a context and come in two types: quantitative (continuous or discrete) and categorical. Technology can be used to "clean" and organize data, including very large data sets, into a useful and manageable structure—a first step in any analysis of data.

Alabama Standards for Mathematical Content	Aligned Components of *Eureka Math²*
AI.DSP.2.34 Distinguish between quantitative and categorical data and between the techniques that may be used for analyzing data of these two types.	*Supplemental material is necessary to address this standard.*

Data Analysis, Statistics, and Probability

Focus 2: Visualizing and Summarizing Data

The association between two categorical variables is typically represented by using two-way tables and segmented bar graphs.

Alabama Standards for Mathematical Content	Aligned Components of *Eureka Math²*
AI.DSP.2.35 Analyze the possible association between two categorical variables.	*This standard is fully addressed by the lessons aligned to its subsections.*
AI.DSP.2.35.a Summarize categorical data for two categories in two-way frequency tables and represent using segmented bar graphs.	A1 M2 Topic D: Categorical Data on Two Variables
AI.DSP.2.35.b Interpret relative frequencies in the context of categorical data (including joint, marginal, and conditional relative frequencies).	A1 M2 Topic D: Categorical Data on Two Variables
AI.DSP.2.35.c Identify possible associations and trends in categorical data.	A1 M2 Topic D: Categorical Data on Two Variables

Data Analysis, Statistics, and Probability

Focus 2: Visualizing and Summarizing Data

Data analysis techniques can be used to develop models of contextual situations and to generate and evaluate possible solutions to real problems involving those contexts.

Alabama Standards for Mathematical Content	Aligned Components of *Eureka Math²*
AI.DSP.2.36 Generate a two-way categorical table in order to find and evaluate solutions to real-world problems.	A1 M2 Topic D: Categorical Data on Two Variables
AI.DSP.2.36.a Aggregate data from several groups to find an overall association between two categorical variables.	*Supplemental material is necessary to address this standard.*
AI.DSP.2.36.b Recognize and explore situations where the association between two categorical variables is reversed when a third variable is considered (Simpson's Paradox).	*Supplemental material is necessary to address this standard.*

Data Analysis, Statistics, and Probability

Focus 4: Probability

Two events are independent if the occurrence of one event does not affect the probability of the other event. Determining whether two events are independent can be used for finding and understanding probabilities.

Alabama Standards for Mathematical Content	Aligned Components of *Eureka Math²*
AI.DSP.4.37 Describe events as subsets of a sample space (the set of outcomes) using characteristics (or categories) of the outcomes, or as unions, intersections, or complements of other events ("or," "and," "not").	*Supplemental material is necessary to address this standard.*
AI.DSP.4.38 Explain whether two events, A and B, are independent, using two-way tables or tree diagrams.	*Supplemental material is necessary to address this standard.*

Data Analysis, Statistics, and Probability

Focus 4: Probability

Conditional probabilities—that is, those probabilities that are "conditioned" by some known information—can be computed from data organized in contingency tables. Conditions or assumptions may affect the computation of a probability.

Alabama Standards for Mathematical Content	Aligned Components of *Eureka Math²*
AI.DSP.4.39 Compute the conditional probability of event A given event B, using two-way tables or tree diagrams.	*Supplemental material is necessary to address this standard.*

Alabama Standards for Mathematical Content	Aligned Components of *Eureka Math²*
AI.DSP.4.40 Recognize and describe the concepts of conditional probability and independence in everyday situations and explain them using everyday language.	*Supplemental material is necessary to address this standard.*
AI.DSP.4.41 Explain why the conditional probability of A given B is the fraction of B's outcomes that also belong to A, and interpret the answer in context.	*Supplemental material is necessary to address this standard.*