7–8 | Arkansas Academic Standards – Mathematics 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.

Ratios and Proportional Relationships

AR.Math.Content.7.RP.A Analyze proportional relationships and use them to solve real-world and mathematical problems.

Arkansas Academic Standards – Mathematics	Aligned Components of *Eureka Math²*
AR.Math.Content.7.RP.A.1 Compute unit rates associated with ratios of fractions, including ratios of lengths, areas, and other quantities measured in like or different units.	7–8 M2 Lesson 12: An Experiment with Ratios and Rates 7–8 M2 Lesson 13: Exploring Tables of Proportional Relationships
AR.Math.Content.7.RP.A.2 Recognize and represent proportional relationships between quantities: • Decide whether two quantities are in a proportional relationship (e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin). • Identify unit rate (also known as the constant of proportionality) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships. • Represent proportional relationships by equations (e.g., if total cost t is proportional to the number n of items purchased at a constant price p, the relationship between the total cost and the number of items can be expressed as $t = pn$). • Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points $(0, 0)$ and $(1, r)$ where r is the unit rate.	7–8 M2 Topic C: From Ratio Relationships to Proportional Relationships 7–8 M2 Lesson 19: Proportional Reasoning and Percents
AR.Math.Content.7.RP.A.3 Use proportional relationships to solve multi-step ratio and percent problems.	7–8 M2 Lesson 16: Applying Proportional Reasoning 7–8 M2 Lesson 17: Using Proportional Reasoning to Solve Multi-Step Problems 7–8 M2 Lesson 18: Handstand Sprint 7–8 M2 Topic D: Percents and Proportional Relationships

The Number System

AR.Math.Content.7.NS.A Apply and extend previous understandings of operations with fractions.

Arkansas Academic Standards – Mathematics	Aligned Components of *Eureka Math²*
AR.Math.Content.7.NS.A.1 Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers. Represent addition and subtraction on a horizontal or vertical number line diagram: • Describe situations in which opposite quantities combine to make 0 and show that a number and its opposite have a sum of 0 (additive inverses) (e.g., a hydrogen atom has 0 charge because its two constituents are oppositely charged). • Understand $p + q$ as a number where p is the starting point and q represents a distance from p in the positive or negative direction depending on whether q is positive or negative. • Interpret sums of rational numbers by describing real-world contexts (e.g., $3 + 2$ means beginning at 3, move 2 units to the right and end at the sum of 5; $3 + (-2)$ means beginning at 3, move 2 units to the left and end at the sum of 1; $70 + (-30) = 40$ could mean after earning $\$70$, $\$30$ was spent on a new video game, leaving a balance of $\$40$). • Understand subtraction of rational numbers as adding the additive inverse, $p - q = p + (-q)$. • Show that the distance between two rational numbers on the number line is the absolute value of their difference and apply this principle in real-world contexts (e.g., the distance between -5 and 6 is 11. -5 and 6 are 11 units apart on the number line).	7–8 M1 Topic A: Add and Subtract Rational Numbers

Arkansas Academic Standards – Mathematics	Aligned Components of *Eureka Math²*
AR.Math.Content.7.NS.A.2 Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers: • Understand that multiplication is extended from fractions to all rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, and the rules for multiplying signed numbers. • Interpret products of rational numbers by describing real-world contexts. • Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number (e.g., if p and q are integers, then $-\left(\frac{p}{q}\right)=\frac{-p}{q}=\frac{p}{-q}$). • Interpret quotients of rational numbers by describing real-world contexts. • Fluently multiply and divide rational numbers by applying properties of operations as strategies. • Convert a fraction to a decimal using long division. • Know that the decimal form of a fraction terminates in 0s or eventually repeats.	7–8 M1 Topic B: Multiply and Divide Rational Numbers
AR.Math.Content.7.NS.A.3 Solve real-world and mathematical problems involving the four operations with rational numbers, including but not limited to complex fractions.	7–8 M1 Lesson 1: Adding Integers and Rational Numbers 7–8 M1 Lesson 3: Finding Distances to Find Differences 7–8 M1 Lesson 4: Subtracting Integers 7–8 M1 Lesson 5: Subtracting Rational Numbers 7–8 M1 Lesson 6: Multiplying Integers and Rational Numbers 7–8 M1 Lesson 8: Dividing Integers and Rational Numbers

The Number System

AR.Math.Content.8.NS.A Know that there are numbers that are not rational, and approximate them by rational numbers.

Arkansas Academic Standards – Mathematics	Aligned Components of *Eureka Math²*
AR.Math.Content.8.NS.A.1 Know that numbers that are not rational are called irrational: • Understand that every number has a decimal expansion. • Write a fraction $\frac{a}{b}$ as a repeating decimal. • Write a repeating decimal as a fraction.	7–8 M1 Lesson 9: Decimal Expansions of Rational Numbers 7–8 M1 Lesson 20: Using the Pythagorean Theorem 7–8 M1 Lesson 22: Rational and Irrational Numbers 7–8 M1 Lesson 23: Revisiting Equations with Squares and Cubes 7–8 M2 Lesson 6: Expressing Repeating Decimals as Fractions
AR.Math.Content.8.NS.A.2 Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions (e.g., π^2).	7–8 M1 Lesson 21: Approximating Values of Roots 7–8 M1 Lesson 22: Rational and Irrational Numbers

Expressions and Equations

AR.Math.Content.7.EE.A Use properties of operations to generate equivalent expressions.

Arkansas Academic Standards – Mathematics	Aligned Components of *Eureka Math²*
AR.Math.Content.7.EE.A.1 Apply properties of operations as strategies to add, subtract, expand, and factor linear expressions with rational coefficients.	7–8 M2 Lesson 2: Using Equivalent Expressions to Solve Equations
AR.Math.Content.7.EE.A.2 Understand how the quantities in a problem are related by rewriting an expression in different forms.	7–8 M2 Lesson 2: Using Equivalent Expressions to Solve Equations 7–8 M2 Lesson 21: Discount, Markup, Sales Tax, and Tip 7–8 M2 Lesson 22: Percent Increase and Percent Decrease

Expressions and Equations

AR.Math.Content.7.EE.B Solve real-life and mathematical problems using numerical and algebraic expressions and equations.

Arkansas Academic Standards – Mathematics	Aligned Components of *Eureka Math²*
AR.Math.Content.7.EE.B.3 Solve multi-step, real-life, and mathematical problems posed with positive and negative rational numbers in any form using tools strategically: • Apply properties of operations to calculate with numbers in any form (e.g., $-\left(\frac{1}{4}\right)(n-4)$). • Convert between forms as appropriate (e.g., if a woman making $\$25$ an hour gets a 10% raise, she will make an additional $\frac{1}{10}$ of her salary an hour, or $\$2.50$, for a new salary of $\$27.50$). • Assess the reasonableness of answers using mental computation and estimation strategies (e.g., if you want to place a towel bar $9\frac{3}{4}$ inches long in the center of a door that is $27\frac{1}{2}$ inches wide, you will need to place the bar about 9 inches from each edge; this estimate can be used as a check on the exact computation).	7–8 M2 Lesson 11: Using Linear Equations to Solve Real-World Problems 7–8 M2 Lesson 17: Using Proportional Reasoning to Solve Multi-Step Problems 7–8 M2 Lesson 18: Handstand Sprint 7–8 M2 Lesson 23: What Is the Best Deal?

Arkansas Academic Standards – Mathematics	Aligned Components of *Eureka Math²*
AR.Math.Content.7.EE.B.4 • Use variables to represent quantities in a real-world or mathematical problem. • Construct simple equations and inequalities to solve problems by reasoning about the quantities. • Solve word problems leading to equations of these forms $px + q = r$ and $p(x + q) = r$, where p, q, and r are specific rational numbers. Solve equations of these forms fluently. • Write an algebraic solution identifying the sequence of the operations used to mirror the arithmetic solution (e.g., The perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width? Subtract $2 \cdot 6$ from 54 and divide by 2; $(2 \cdot 6) + 2w = 54$). • Solve word problems leading to inequalities of the form $px + q > r$ or $px + q < r$, where p, q, and r are specific rational numbers. • Graph the solution set of the inequality and interpret it in the context of the problem (e.g., As a salesperson, you are paid $\$50$ per week plus $\$3$ per sale. This week you want your pay to be at least $\$100$. Write an inequality for the number of sales you need to make, and describe the solutions.).	7–8 M2 Lesson 1: Finding Unknown Angle Measures 7–8 M2 Lesson 3: Solving Equations 7–8 M2 Lesson 4: Using Equations to Solve Inequalities 7–8 M2 Lesson 5: Solving Problems Involving Equations and Inequalities

Expressions and Equations

AR.Math.Content.8.EE.A Work with radicals and integer exponents.

Arkansas Academic Standards – Mathematics	Aligned Components of *Eureka Math²*
AR.Math.Content.8.EE.A.1 Know and apply the properties of integer exponents to generate equivalent numerical expressions using product, quotient, power to a power, or expanded form.	7–8 M1 Lesson 11: Products of Exponential Expressions with Positive Whole-Number Exponents 7–8 M1 Lesson 12: More Properties of Exponents 7–8 M1 Lesson 13: Making Sense of Integer Exponents
AR.Math.Content.8.EE.A.2 Use square root and cube root symbols to represent solutions to equations: • Use square root symbols to represent solutions to equations of the form $x^2 = p$, where p is a positive rational number. Evaluate square roots of small perfect squares. • Use cube root symbols to represent solutions to equations of the form $x^3 = p$, where p is a rational number. Evaluate square roots and cube roots of small perfect cubes.	7–8 M1 Lesson 18: Solving Equations with Squares and Cubes 7–8 M1 Lesson 19: The Pythagorean Theorem 7–8 M1 Lesson 20: Using the Pythagorean Theorem 7–8 M1 Lesson 21: Approximating Values of Roots 7–8 M1 Lesson 23: Revisiting Equations with Squares and Cubes
AR.Math.Content.8.EE.A.3 Use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other.	7–8 M1 Lesson 10: Large and Small Positive Numbers 7–8 M1 Lesson 14: Writing Very Large and Very Small Numbers in Scientific Notation 7–8 M1 Lesson 15: Operations with Numbers Written in Scientific Notation 7–8 M1 Lesson 16: Applications with Numbers Written in Scientific Notation 7–8 M1 Lesson 17: Get to the Point

Arkansas Academic Standards – Mathematics	Aligned Components of *Eureka Math²*
AR.Math.Content.8.EE.A.4 • Perform operations with numbers expressed in scientific notation, including problems where both standard form and scientific notation are used. • Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities (e.g., use millimeters per year for seafloor spreading). • Interpret scientific notation that has been generated by technology.	7–8 M1 Lesson 15: Operations with Numbers Written in Scientific Notation 7–8 M1 Lesson 16: Applications with Numbers Written in Scientific Notation 7–8 M1 Lesson 17: Get to the Point

Expressions and Equations

AR.Math.Content.8.EE.B Understand the connections between proportional relationships, lines, and linear equations.

Arkansas Academic Standards – Mathematics	Aligned Components of *Eureka Math²*
AR.Math.Content.8.EE.B.5 • Graph proportional relationships, interpreting the unit rate as the slope of the graph. • Compare two different proportional relationships represented in different ways (graphs, tables, equations).	7–8 M4 Lesson 4: Comparing Proportional Relationships 7–8 M4 Lesson 5: Proportional Relationships and Slope
AR.Math.Content.8.EE.B.6 • Using a non-vertical or non-horizontal line, show why the slope m is the same between any two distinct points by creating similar triangles. • Write the equation $y = mx$ for a line through the origin. • Be able to write the equation $y = mx + b$ for a line intercepting the vertical axis at b.	7–8 M4 Lesson 5: Proportional Relationships and Slope 7–8 M4 Lesson 6: Slopes of Rising Lines and Falling Lines 7–8 M4 Lesson 7: Using Coordinates to Find Slope 7–8 M4 Lesson 8: Slope-Intercept Form of the Equation of a Line

Expressions and Equations

AR.Math.Content.8.EE.C Analyze and solve linear equations and pairs of simultaneous linear equations.

Arkansas Academic Standards – Mathematics	Aligned Components of *Eureka Math²*
AR.Math.Content.8.EE.C.7 Solve linear equations in one variable: • Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. • Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.	7–8 M2 Lesson 6: Expressing Repeating Decimals as Fractions 7–8 M2 Topic B: Multi-Step Equations and Their Solutions
AR.Math.Content.8.EE.C.8 Analyze and solve pairs of simultaneous linear equations: • Find solutions to a system of two linear equations in two variables so they correspond to points of intersection of their graphs. • Solve systems of equations in two variables algebraically using simple substitution and by inspection (e.g., $3x + 2y = 5$ and $3x + 2y = 6$ have no solution because $3x + 2y$ cannot simultaneously be 5 and 6). • Solve real-world mathematical problems by utilizing and creating two linear equations in two variables.	7–8 M4 Topic C: Solving Systems of Linear Equations 7–8 M4 Topic D: Writing and Solving Systems of Linear Equations

Geometry

AR.Math.Content.7.G.A Draw, construct, and describe geometrical figures and describe the relationships between them.

Arkansas Academic Standards – Mathematics	Aligned Components of *Eureka Math²*
AR.Math.Content.7.G.A.1 Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.	7–8 M3 Topic D: Scale Drawings and Dilations
AR.Math.Content.7.G.A.2 Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions: • Given three measures of angles or sides of a triangle, notice when the conditions determine a unique triangle, more than one triangle, or no triangle. • Differentiate between regular and irregular polygons.	7–8 M3 Lesson 1: Sketching and Constructing Geometric Figures 7–8 M3 Lesson 2: Conditions of Unique Triangles 7–8 M3 Lesson 3: Exploring and Constructing Circles *Supplemental material is necessary to address differentiating between regular and irregular polygons.*
AR.Math.Content.7.G.A.3 Describe the two-dimensional figures that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids.	7–8 M5 Lesson 13: Understanding Planes and Cross Sections 7–8 M5 Lesson 14: Cross Section Scavenger Hunt 7–8 M5 Lesson 15: Proportionality and Scale Factor of Cross Sections

Geometry

AR.Math.Content.7.G.B Solve real-life and mathematical problems involving angle measure, area, surface area and volume.

Arkansas Academic Standards – Mathematics	Aligned Components of *Eureka Math²*
AR.Math.Content.7.G.B.4 • Know the formulas for the area and circumference of a circle and use them to solve problems. • Give an informal derivation of the relationship between the circumference and area of a circle.	7–8 M3 Lesson 3: Exploring and Constructing Circles 7–8 M3 Lesson 4: Area and Circumference of a Circle 7–8 M3 Lesson 5: Area and Circumference of Circular Regions 7–8 M3 Lesson 6: Watering a Lawn
AR.Math.Content.7.G.B.5 Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure.	7–8 M2 Lesson 1: Finding Unknown Angle Measures 7–8 M2 Lesson 2: Using Equivalent Expressions to Solve Equations 7–8 M2 Lesson 7: Solving Multi-Step Equations
AR.Math.Content.7.G.B.6 Solve real-world and mathematical problems involving area of two-dimensional objects and volume and surface area of three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.	7–8 M5 Lesson 11: Surface Areas of Prisms and Pyramids 7–8 M5 Lesson 16: Volume of Prisms 7–8 M5 Lesson 18: Designing a Fish Tank 7–8 M5 Lesson 21: Volume of Composite Solids

Geometry

AR.Math.Content.8.G.A Understand congruence and similarity using physical models, transparencies, or geometry software.

Arkansas Academic Standards – Mathematics	Aligned Components of *Eureka Math²*
AR.Math.Content.8.G.A.1 Verify experimentally the properties of rotations, reflections, and translations: • Lines are taken to lines, and line segments to line segments of the same length. • Angles are taken to angles of the same measure. • Parallel lines are taken to parallel lines.	7–8 M3 Lesson 7: Motions of the Plane 7–8 M3 Lesson 8: Translations, Reflections, and Rotations 7–8 M3 Lesson 9: Rigid Motions on the Coordinate Plane 7–8 M3 Lesson 10: Sequencing the Rigid Motions
AR.Math.Content.8.G.A.2 • Understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations. • Given two congruent figures, describe a sequence that exhibits the congruence between them.	7–8 M3 Lesson 10: Sequencing the Rigid Motions 7–8 M3 Lesson 11: Showing Figures Are Congruent 7–8 M3 Lesson 12: Lines Cut by a Transversal
AR.Math.Content.8.G.A.3 Given a two-dimensional figure on a coordinate plane, identify and describe the effect (rule or new coordinates) of a transformation (dilation, translation, rotation, and reflection): • Image to pre-image • Pre-image to image	7–8 M3 Lesson 9: Rigid Motions on the Coordinate Plane 7–8 M3 Lesson 22: Dilations 7–8 M3 Lesson 23: Using Lined Paper to Explore Dilations 7–8 M3 Lesson 24: Figures and Dilations 7–8 M3 Lesson 25: The Shadowy Hand 7–8 M3 Lesson 26: Dilations on the Coordinate Plane

Arkansas Academic Standards – Mathematics	Aligned Components of *Eureka Math²*
AR.Math.Content.8.G.A.4 • Understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations. • Given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them.	7–8 M3 Lesson 27: Similar Figures 7–8 M3 Lesson 28: Exploring Angles in Similar Triangles
AR.Math.Content.8.G.A.5 Use informal arguments to establish facts about: • the angle sum and exterior angle of triangles • the angles created when parallel lines are cut by a transversal • the angle-angle criterion for similarity of triangles	7–8 M3 Lesson 12: Lines Cut by a Transversal 7–8 M3 Lesson 13: Angle Sum of a Triangle 7–8 M3 Lesson 14: Exterior Angles of Triangles 7–8 M3 Lesson 28: Exploring Angles in Similar Triangles 7–8 M3 Lesson 29: Using Similar Figures to Find Unknown Side Lengths

Geometry

AR.Math.Content.8.G.B Understand and apply the Pythagorean Theorem.

Arkansas Academic Standards – Mathematics	Aligned Components of *Eureka Math²*
AR.Math.Content.8.G.B.6 Model or explain an informal proof of the Pythagorean Theorem and its converse.	7–8 M3 Lesson 15: Proving the Pythagorean Theorem 7–8 M3 Lesson 16: Proving the Converse of the Pythagorean Theorem
AR.Math.Content.8.G.B.7 Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions.	7–8 M1 Lesson 19: The Pythagorean Theorem 7–8 M3 Lesson 16: Proving the Converse of the Pythagorean Theorem 7–8 M3 Lesson 17: Applications of the Pythagorean Theorem 7–8 M3 Lesson 29: Using Similar Figures to Find Unknown Side Lengths 7–8 M5 Lesson 19: Volumes of Pyramids and Cones
AR.Math.Content.8.G.B.8 Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.	7–8 M3 Lesson 17: Applications of the Pythagorean Theorem

Geometry

AR.Math.Content.8.G.C Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres.

Arkansas Academic Standards – Mathematics	Aligned Components of *Eureka Math²*
AR.Math.Content.8.G.C.9 Develop and know the formulas for the volumes and surface areas of cones, cylinders, and spheres and use them to solve real-world and mathematical problems.	7–8 M5 Lesson 12: Surface Area of Cylinders 7–8 M5 Topic D: Volume *Supplemental material is necessary to address surface areas of cones and spheres.*

Statistics and Probability

AR.Math.Content.7.SP.A Use random sampling to draw inferences about a population.

Arkansas Academic Standards – Mathematics	Aligned Components of *Eureka Math²*
AR.Math.Content.7.SP.A.1 Understand that: • Statistics can be used to gain information about a population by examining a sample of the population. • Generalizations about a population from a sample are valid only if the sample is representative of that population. • Random sampling tends to produce representative samples and support valid inferences.	7–8 M6 Lesson 10: Populations and Samples 7–8 M6 Lesson 11: Selecting a Sample 7–8 M6 Lesson 12: Sampling Variability When Estimating a Population Mean
AR.Math.Content.7.SP.A.2 • Use data from a random sample to draw inferences about a population with a specific characteristic. • Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions.	7–8 M6 Lesson 12: Sampling Variability When Estimating a Population Mean 7–8 M6 Lesson 13: Sampling Variability and the Effect of Sample Size 7–8 M6 Lesson 14: Sampling Variability When Estimating a Population Proportion

Statistics and Probability

AR.Math.Content.7.SP.B Draw informal comparative inferences about two populations.

Arkansas Academic Standards – Mathematics	Aligned Components of *Eureka Math²*
AR.Math.Content.7.SP.B.3 Draw conclusions about the degree of visual overlap of two numerical data distributions with similar variability such as interquartile range or mean absolute deviation, expressing the difference between the centers as a multiple of a measure of variability such as mean, median, or mode.	7–8 M6 Topic D: Comparing Populations
AR.Math.Content.7.SP.B.4 Draw informal comparative inferences about two populations using measures of center and measures of variability for numerical data from random samples.	7–8 M6 Topic D: Comparing Populations

Statistics and Probability

AR.Math.Content.7.SP.C Investigate chance processes and develop, use, and evaluate probability models.

Arkansas Academic Standards – Mathematics	Aligned Components of *Eureka Math²*
AR.Math.Content.7.SP.C.5 • Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. • A probability near 0 indicates an unlikely event, a probability around $\frac{1}{2}$ indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event.	7–8 M6 Lesson 1: What Is Probability?

Arkansas Academic Standards – Mathematics	Aligned Components of *Eureka Math²*
AR.Math.Content.7.SP.C.6 • Collect data to approximate the probability of a chance event. • Observe its long-run relative frequency. • Predict the approximate relative frequency given the probability.	7–8 M6 Lesson 1: What Is Probability? 7–8 M6 Lesson 2: Outcomes of Chance Experiments 7–8 M6 Lesson 5: Outcomes That Are Not Equally Likely 7–8 M6 Lesson 7: Picking Blue
AR.Math.Content.7.SP.C.7 Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy: • Develop a uniform probability model, assigning equal probability to all outcomes, and use the model to determine probabilities of events (e.g., If a student is selected at random from a class of 6 girls and 4 boys, the probability that Jane will be selected is .10 and the probability that a girl will be selected is .60.). • Develop a probability model, which may not be uniform, by observing frequencies in data generated from a chance process (e.g., Find the approximate probability that a spinning penny will land heads up or that a tossed paper cup will land open-end down. Do the outcomes for the spinning penny appear to be equally likely based on the observed frequencies?).	7–8 M6 Lesson 3: Theoretical Probability 7–8 M6 Lesson 6: The Law of Large Numbers 7–8 M6 Lesson 7: Picking Blue

Arkansas Academic Standards – Mathematics	Aligned Components of *Eureka Math²*
AR.Math.Content.7.SP.C.8 Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation: • Understand that, just as with simple events, the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs. • Represent sample spaces for compound events using methods such as organized lists, tables and tree diagrams. • Identify the outcomes in the sample space which compose the event. Generate frequencies for compound events using a simulation (e.g., What is the frequency of pulling a red card from a deck of cards and rolling a 5 on a die?).	7–8 M6 Lesson 4: Multistage Experiments 7–8 M6 Lesson 8: Probability Simulations 7–8 M6 Lesson 9: Simulations with Random Number Tables

Statistics and Probability

AR.Math.Content.8.SP.A Investigate patterns of association in bivariate data.

Arkansas Academic Standards – Mathematics	Aligned Components of *Eureka Math²*
AR.Math.Content.8.SP.A.1 • Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. • Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association.	7–8 M6 Lesson 18: Scatter Plots 7–8 M6 Lesson 19: Patterns in Scatter Plots

Arkansas Academic Standards – Mathematics	Aligned Components of *Eureka Math²*
AR.Math.Content.8.SP.A.2 • Know that straight lines are widely used to model relationships between two quantitative variables. • For scatter plots that suggest a linear association, informally fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line.	7–8 M6 Lesson 20: Informally Fitting a Line to Data 7–8 M6 Lesson 21: Linear Models
AR.Math.Content.8.SP.A.3 Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercepts.	7–8 M6 Lesson 20: Informally Fitting a Line to Data 7–8 M6 Lesson 21: Linear Models
AR.Math.Content.8.SP.A.4 • Understand that patterns of association can also be seen in bivariate categorical data by displaying frequencies and relative frequencies in a two-way table. • Construct and interpret a two-way table on two categorical variables collected from the same subjects. • Use relative frequencies calculated for rows or columns to describe possible association between the two variables.	7–8 M6 Topic F: Bivariate Categorical Data

Functions

AR.Math.Content.8.F.A Define, evaluate, and compare functions.

Arkansas Academic Standards – Mathematics	Aligned Components of *Eureka Math²*
AR.Math.Content.8.F.A.1 • Understand that a function is a rule that assigns to each input exactly one output. • The graph of a function is the set of ordered pairs consisting of an input and the corresponding output.	7–8 M5 Lesson 1: Motion and Speed 7–8 M5 Lesson 2: Definition of a Function 7–8 M5 Lesson 4: More Examples of Functions 7–8 M5 Lesson 5: Graphs of Functions and Equations
AR.Math.Content.8.F.A.2 Compare properties (e.g., y-intercept/initial value, slope/rate of change) of two functions each represented in a different way (e.g., algebraically, graphically, numerically in tables, or by verbal descriptions).	7–8 M5 Lesson 7: Interpreting Rate of Change and Initial Value 7–8 M5 Lesson 8: Comparing Functions
AR.Math.Content.8.F.A.3 Identify the unique characteristics of functions (e.g., linear, quadratic, and exponential) by comparing their graphs, equations, and input/output tables.	*Supplemental material is necessary to address this standard.*

Functions

AR.Math.Content.8.F.B Use functions to model relationships between quantities.

Arkansas Academic Standards – Mathematics	Aligned Components of *Eureka Math²*
AR.Math.Content.8.F.B.4 Construct a function to model a linear relationship between two quantities: • Determine the rate of change and initial value of the function from: - a verbal description of a relationship - two (x, y) values - a table - a graph • Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.	7–8 M5 Lesson 6: Linear Functions and Rate of Change 7–8 M5 Lesson 7: Interpreting Rate of Change and Initial Value 7–8 M5 Lesson 23: Applications of Volume
AR.Math.Content.8.F.B.5 • Describe the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). • Sketch a graph that exhibits the features of a function that has been described verbally.	7–8 M5 Lesson 9: Increasing and Decreasing Functions 7–8 M5 Lesson 10: Graphs of Nonlinear Functions