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## Grade 8 | Arkansas Mathematics Standards (2023) 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>

**Number Concepts & Computations****Rational & Irrational Numbers**

Students understand relationships among numbers and the real number system.

<b>Arkansas Mathematics Standards</b>	<b>Aligned Components of <i>Eureka Math</i><sup>2</sup></b>
<p><b>8.NCC.1</b></p> <p>Describe relationships in the real number system (rational and irrational).</p>	<p>8 M1 Lesson 22: Familiar and Not So Familiar Numbers</p> <p>8 M4 Lesson 5: An Interesting Application of Linear Equations, Part 1</p> <p>8 M4 Lesson 6: An Interesting Application of Linear Equations, Part 2</p>
<p><b>8.NCC.2</b></p> <p>Compare the size of irrational numbers and locate them on a number line by finding the rational approximations.</p>	<p>8 M1 Lesson 21: Approximating Values of Roots and <math>\pi^2</math></p> <p>8 M1 Lesson 23: Ordering Irrational Numbers</p>
<p><b>8.NCC.3</b></p> <p>Know and apply the properties of integer exponents to generate equivalent numerical expressions.</p>	<p>8 M1 Lesson 5: Products of Exponential Expressions with Whole-Number Exponents</p> <p>8 M1 Lesson 6: More Properties of Exponents</p> <p>8 M1 Lesson 7: Making Sense of the Exponent of 0</p> <p>8 M1 Lesson 8: Making Sense of Integer Exponents</p> <p>8 M1 Lesson 9: Writing Equivalent Expressions</p> <p>8 M1 Lesson 10: Evaluating Numerical Expressions by Using Properties of Exponents</p>
<p><b>8.NCC.4</b></p> <p>Write very large and very small numbers in scientific notation using positive and negative exponents.</p>	<p>8 M1 Lesson 1: Large and Small Positive Numbers</p> <p>8 M1 Lesson 2: Comparing Large Numbers</p> <p>8 M1 Lesson 3: Time to Be More Precise—Scientific Notation</p> <p>8 M1 Lesson 7: Making Sense of the Exponent of 0</p> <p>8 M1 Lesson 11: Small Positive Numbers in Scientific Notation</p>

<b>Arkansas Mathematics Standards</b>	<b>Aligned Components of <i>Eureka Math</i><sup>2</sup></b>
<p><b>8.NCC.5</b></p> <p>Compare numbers written in scientific notation to determine how many times larger or smaller one number is than the other, using real-world and mathematical problems.</p>	<p>8 M1 Lesson 2: Comparing Large Numbers</p> <p>8 M1 Lesson 4: Adding and Subtracting Numbers Written in Scientific Notation</p> <p>8 M1 Lesson 12: Operations with Numbers in Scientific Notation</p> <p>8 M1 Lesson 13: Applications with Numbers in Scientific Notation</p> <p>8 M1 Lesson 14: Choosing Units of Measurement</p> <p>8 M1 Lesson 15: Get to the Point</p>
<p><b>8.NCC.6</b></p> <p>Solve real-world and mathematical problems by performing operations with numbers written in standard and scientific notation.</p>	<p>8 M1 Lesson 2: Comparing Large Numbers</p> <p>8 M1 Lesson 4: Adding and Subtracting Numbers Written in Scientific Notation</p> <p>8 M1 Lesson 12: Operations with Numbers in Scientific Notation</p> <p>8 M1 Lesson 13: Applications with Numbers in Scientific Notation</p> <p>8 M1 Lesson 14: Choosing Units of Measurement</p> <p>8 M1 Lesson 15: Get to the Point</p>

## Number Concepts & Computations

### Rational Number Operations

Students work with square and cube roots.

<b>Arkansas Mathematics Standards</b>	<b>Aligned Components of <i>Eureka Math</i><sup>2</sup></b>
<p><b>8.NCC.7</b></p> <p>Solve equations in the form of <math>x^2 = p</math> or <math>x^3 = p</math> where <math>p</math> is a positive rational number.</p>	<p>8 M1 Lesson 16: Perfect Squares and Perfect Cubes</p> <p>8 M1 Lesson 17: Solving Equations with Squares and Cubes</p> <p>8 M1 Lesson 20: Square Roots</p> <p>8 M1 Lesson 22: Familiar and Not So Familiar Numbers</p> <p>8 M1 Lesson 24: Revisiting Equations with Squares and Cubes</p>

<b>Arkansas Mathematics Standards</b>	<b>Aligned Components of <i>Eureka Math</i><sup>2</sup></b>
<p><b>8.NCC.8</b></p> <p>Evaluate square roots of perfect squares and cube roots of perfect cubes.</p>	<p>8 M1 Lesson 16: Perfect Squares and Perfect Cubes</p> <p>8 M1 Lesson 17: Solving Equations with Squares and Cubes</p> <p>8 M1 Lesson 20: Square Roots</p> <p>8 M1 Lesson 22: Familiar and Not So Familiar Numbers</p> <p>8 M1 Lesson 24: Revisiting Equations with Squares and Cubes</p>

## Functions

### Proportional & Linear Relationships

Students understand slope using previous learning of proportional relationships.

<b>Arkansas Mathematics Standards</b>	<b>Aligned Components of <i>Eureka Math</i><sup>2</sup></b>
<p><b>8.FN.1</b></p> <p>Graph proportional relationships, interpreting the unit rate as the slope of the graph.</p>	<p>8 M4 Lesson 15: Comparing Proportional Relationships</p> <p>8 M4 Lesson 16: Proportional Relationships and Slope</p>
<p><b>8.FN.2</b></p> <p>Explain, using similar right triangles, how the slope of a line is the same between two points on a non-vertical line or non-horizontal line.</p>	<p>8 M3 Lesson 17: Similar Triangles on a Line</p> <p>8 M4 Lesson 16: Proportional Relationships and Slope</p> <p>8 M4 Lesson 17: Slopes of Rising Lines</p> <p>8 M4 Lesson 18: Slopes of Falling Lines</p> <p>8 M4 Lesson 19: Using Coordinates to Find Slope</p> <p>8 M4 Lesson 20: Slope-Intercept Form of the Equation of a Line</p>

## Functions

### Functions

Students understand that a function is a rule that assigns each input exactly one output.

Arkansas Mathematics Standards	Aligned Components of <i>Eureka Math</i> <sup>2</sup>
<p><b>8.FN.3</b></p> <p>Determine whether a relation is a function or not when given a function map, table, graph, equation, or set of ordered pairs.</p>	<p>8 M6 Lesson 1: Motion and Speed</p> <p>8 M6 Lesson 2: Definition of a Function</p> <p>8 M6 Lesson 4: More Examples of Functions</p> <p>8 M6 Lesson 5: Graphs of Functions and Equations</p>
<p><b>8.FN.4</b></p> <p>Compare the rate of change (slope) and <math>y</math>-intercept (initial value) of two linear functions each represented in different forms.</p>	<p>8 M6 Lesson 7: Interpreting Rate of Change and Initial Value</p> <p>8 M6 Lesson 8: Comparing Functions</p>
<p><b>8.FN.5</b></p> <p>Distinguish between linear and nonlinear functions by comparing graphs and equations.</p>	<p>8 M6 Lesson 3: Linear Functions and Proportionality</p> <p>8 M6 Lesson 6: Linear Functions and Rate of Change</p> <p>8 M6 Lesson 10: Graphs of Nonlinear Functions</p>
<p><b>8.FN.6</b></p> <p>Determine the rate of change (slope) and <math>y</math>-intercept (initial value) from tables, graphs, equations, and verbal descriptions of linear relationships.</p>	<p>8 M6 Lesson 6: Linear Functions and Rate of Change</p> <p>8 M6 Lesson 7: Interpreting Rate of Change and Initial Value</p> <p>8 M6 Lesson 25: Applications of Volume</p>

Arkansas Mathematics Standards	Aligned Components of <i>Eureka Math</i> <sup>2</sup>
<p><b>8.FN.7</b></p> <p>Interpret and explain the meaning of the rate of change (slope) and <math>y</math>-intercept (initial value) of a linear relationship in a real-world context.</p>	<p>8 M6 Lesson 6: Linear Functions and Rate of Change</p> <p>8 M6 Lesson 7: Interpreting Rate of Change and Initial Value</p> <p>8 M6 Lesson 25: Applications of Volume</p>
<p><b>8.FN.8</b></p> <p>Analyze a graph by describing the functional relationships between two quantities.</p>	<p>8 M6 Lesson 9: Increasing and Decreasing Functions</p> <p>8 M6 Lesson 10: Graphs of Nonlinear Functions</p>
<p><b>8.FN.9</b></p> <p>Sketch a graph that exhibits qualitative features of a function described verbally.</p>	<p>8 M6 Lesson 9: Increasing and Decreasing Functions</p> <p>8 M6 Lesson 10: Graphs of Nonlinear Functions</p>

## Algebra

### Equations & Inequalities

Students solve linear equations and inequalities.

Arkansas Mathematics Standards	Aligned Components of <i>Eureka Math</i> <sup>2</sup>
<p><b>8.ALG.1</b></p> <p>Analyze and solve one-variable linear equations with rational coefficients containing solutions with one, zero, or infinitely many solutions.</p>	<p>8 M4 Lesson 7: Linear Equations with More Than One Solution</p> <p>8 M4 Lesson 8: Another Possible Number of Solutions</p> <p>8 M4 Lesson 9: Writing Linear Equations</p> <p>8 M4 Lesson 10: Using Linear Equations to Solve Real-World Problems</p>

Arkansas Mathematics Standards	Aligned Components of <i>Eureka Math</i> <sup>2</sup>
<p><b>8.ALG.2</b></p> <p>Analyze and solve one-variable linear inequalities with rational coefficients.</p>	<p>7 M3 Lesson 18: Understanding Inequalities and Their Solutions</p> <p>7 M3 Lesson 19: Using Equations to Solve Inequalities</p> <p>7 M3 Lesson 20: Preserving and Reversing</p> <p>7 M3 Lesson 21: Solving Two-Step Inequalities</p> <p>7 M3 Lesson 22: Solving Problems Involving Inequalities</p> <p>7 M3 Lesson 23: Inequalities vs. Equations</p>

## Algebra

### Systems of Equations

Students will solve systems of equations.

Arkansas Mathematics Standards	Aligned Components of <i>Eureka Math</i> <sup>2</sup>
<p><b>8.ALG.3</b></p> <p>Analyze and solve systems of linear equations in the form <math>y = mx + b</math> in real-world or mathematical contexts, graphically and algebraically.</p>	<p>8 M5 Lesson 1: Solving Problems with Equations and Their Graphs</p> <p>8 M5 Lesson 3: Identifying Solutions</p> <p>8 M5 Lesson 4: More Than One Solution</p> <p>8 M5 Lesson 5: Estimating Solutions</p> <p>8 M5 Lesson 6: Solving Systems of Linear Equations Without Graphing</p> <p>8 M5 Lesson 7: The Substitution Method</p> <p>8 M5 Lesson 8: Using Tape Diagrams to Solve Systems of Equations</p> <p>8 M5 Lesson 9: Rewriting Equations to Solve a System of Equations</p> <p>8 M5 Lesson 10: Choosing a Solution Method</p> <p>8 M5 Lesson 11: Writing and Solving Systems of Equations for Mathematical Problems</p> <p>8 M5 Lesson 12: Solving Historical Problems with Systems of Equations</p> <p>8 M5 Lesson 13: Writing and Solving Systems of Equations for Real-World Problems</p> <p>8 M5 Lesson 14: Back to the Coordinate Plane</p>

## Geometry & Measurement

### Area, Volume, & Surface Area

Students solve problems involving area, volume, and surface area.

Arkansas Mathematics Standards	Aligned Components of <i>Eureka Math</i> <sup>2</sup>
<p><b>8.GM.1</b></p> <p>Apply the formulas for the volume and surface area of cylinders, cones, and spheres to solve real-world and mathematical problems.</p>	<p>8 M6 Lesson 21: Volumes of Prisms and Pyramids</p> <p>8 M6 Lesson 22: Volume of Cylinders</p> <p>8 M6 Lesson 23: Volume of Cones</p> <p>8 M6 Lesson 24: Volume of Spheres</p> <p>8 M6 Lesson 25: Applications of Volume</p>

## Geometry & Measurement

### Cross Sections

Students describe cross sections of three-dimensional figures.

Arkansas Mathematics Standards	Aligned Components of <i>Eureka Math</i> <sup>2</sup>
<p><b>8.GM.2</b></p> <p>Describe the two-dimensional figure that results from slicing a three-dimensional figure parallel and perpendicular to the base.</p>	<p>7 M4 Lesson 22: Understanding Planes and Cross Sections</p> <p>7 M4 Lesson 23: Cross Section Scavenger Hunt</p>

## Geometry & Measurement

### Pythagorean Theorem

Students explore right triangles and apply the Pythagorean Theorem.

Arkansas Mathematics Standards	Aligned Components of <i>Eureka Math</i> <sup>2</sup>
<p><b>8.GM.3</b></p> <p>Model or explain an informal proof of the Pythagorean Theorem and its converse.</p>	<p>8 M2 Lesson 17: Proving the Pythagorean Theorem</p> <p>8 M2 Lesson 18: Proving the Converse of the Pythagorean Theorem</p> <p>8 M2 Lesson 19: Using the Pythagorean Theorem and Its Converse</p>
<p><b>8.GM.4</b></p> <p>Apply the Pythagorean Theorem to determine unknown side lengths in right triangles.</p>	<p>8 M1 Lesson 18: The Pythagorean Theorem</p> <p>8 M1 Lesson 19: Using the Pythagorean Theorem</p> <p>8 M1 Lesson 20: Square Roots</p> <p>8 M2 Lesson 19: Using the Pythagorean Theorem and Its Converse</p> <p>8 M2 Lesson 21: Applying the Pythagorean Theorem</p> <p>8 M2 Lesson 22: On the Right Path</p> <p>8 M3 Lesson 16: Similar Right Triangles</p>
<p><b>8.GM.5</b></p> <p>Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.</p>	<p>8 M2 Lesson 20: Distance in the Coordinate Plane</p> <p>8 M2 Lesson 22: On the Right Path</p>

## Geometry & Measurement

### Transformations & Congruence on a Coordinate Plane

Students use concrete models, diagrams, or geometry to understand congruence and similarity.

Arkansas Mathematics Standards	Aligned Components of <i>Eureka Math</i> <sup>2</sup>
<p><b>8.GM.6</b></p> <p>Given a figure, draw a congruent figure on a coordinate plane resulting from a rotation, reflection, or translation.</p>	<p>8 M3 Lesson 11: Similar Figures</p> <p>8 M3 Lesson 12: Exploring Angles in Similar Triangles</p> <p>8 M3 Lesson 13: Similar Triangles</p> <p>8 M3 Lesson 17: Similar Triangles on a Line</p>
<p><b>8.GM.7</b></p> <p>Identify a single transformation used to transform one figure onto another on a coordinate plane.</p>	<p>8 M3 Lesson 11: Similar Figures</p> <p>8 M3 Lesson 12: Exploring Angles in Similar Triangles</p> <p>8 M3 Lesson 13: Similar Triangles</p> <p>8 M3 Lesson 17: Similar Triangles on a Line</p>
<p><b>8.GM.8</b></p> <p>Given two congruent figures, describe a sequence of transformations that maps one figure to another.</p>	<p>8 M3 Lesson 11: Similar Figures</p> <p>8 M3 Lesson 12: Exploring Angles in Similar Triangles</p> <p>8 M3 Lesson 13: Similar Triangles</p> <p>8 M3 Lesson 17: Similar Triangles on a Line</p>
<p><b>8.GM.9</b></p> <p>Perform a given sequence of transformations of a figure on the coordinate plane, including rotations, reflections, translations, and dilations.</p>	<p>8 M2 Lesson 4: Translations and Reflections on the Coordinate Plane</p> <p>8 M2 Lesson 6: Rotations on the Coordinate Plane</p> <p>8 M2 Lesson 9: Ordering Sequences of Rigid Motions</p> <p>8 M3 Lesson 1: Exploring Dilations</p> <p>8 M3 Lesson 2: Enlargements</p> <p>8 M3 Lesson 3: Reductions and More Enlargements</p> <p>8 M3 Lesson 4: Using Lined Paper to Explore Dilations</p> <p>8 M3 Lesson 5: Figures and Dilations</p> <p>8 M3 Lesson 6: The Shadowy Hand</p>

Arkansas Mathematics Standards	Aligned Components of <i>Eureka Math</i> <sup>2</sup>
<p><b>8.GM.9</b> <i>continued</i></p>	<p>8 M3 Lesson 7: Dilations on a Grid</p> <p>8 M3 Lesson 8: Dilations on the Coordinate Plane</p> <p>8 M3 Lesson 9: Describing Dilations</p> <p>8 M3 Lesson 10: Sequencing Transformations</p> <p>8 M3 Lesson 16: Similar Right Triangles</p>
<p><b>8.GM.10</b></p> <p>Describe the effects of rotations, reflections, translations, and dilations on two-dimensional figures using coordinates.</p>	<p>8 M2 Lesson 4: Translations and Reflections on the Coordinate Plane</p> <p>8 M2 Lesson 6: Rotations on the Coordinate Plane</p> <p>8 M2 Lesson 9: Ordering Sequences of Rigid Motions</p> <p>8 M3 Lesson 1: Exploring Dilations</p> <p>8 M3 Lesson 2: Enlargements</p> <p>8 M3 Lesson 3: Reductions and More Enlargements</p> <p>8 M3 Lesson 4: Using Lined Paper to Explore Dilations</p> <p>8 M3 Lesson 5: Figures and Dilations</p> <p>8 M3 Lesson 6: The Shadowy Hand</p> <p>8 M3 Lesson 7: Dilations on a Grid</p> <p>8 M3 Lesson 8: Dilations on the Coordinate Plane</p> <p>8 M3 Lesson 9: Describing Dilations</p> <p>8 M3 Lesson 10: Sequencing Transformations</p> <p>8 M3 Lesson 16: Similar Right Triangles</p>
<p><b>8.GM.11</b></p> <p>Given two similar two-dimensional figures, describe a sequence of transformations that exhibits similarity, including rotations, reflections, translations, and dilations.</p>	<p>8 M3 Lesson 11: Similar Figures</p> <p>8 M3 Lesson 12: Exploring Angles in Similar Triangles</p> <p>8 M3 Lesson 13: Similar Triangles</p> <p>8 M3 Lesson 17: Similar Triangles on a Line</p>

## Statistics & Probability

### Bivariate Data

Students investigate patterns of association to bivariate data.

Arkansas Mathematics Standards	Aligned Components of <i>Eureka Math</i> <sup>2</sup>
<p><b>8.SP.1</b></p> <p>Construct scatter plots using bivariate data; determine if the data displays a linear or nonlinear pattern and positive, negative, or no association.</p>	<p>8 M6 Lesson 11: Scatter Plots</p> <p>8 M6 Lesson 12: Patterns in Scatter Plots</p>
<p><b>8.SP.2</b></p> <p>Construct straight lines to approximately fit data displaying a linear association when presented in scatter plots.</p>	<p>8 M6 Lesson 13: Informally Fitting a Line to Data</p> <p>8 M6 Lesson 15: Linear Models</p> <p>8 M6 Lesson 16: Using the Investigative Process</p> <p>8 M6 Lesson 17: Analyzing the Model</p>
<p><b>8.SP.3</b></p> <p>Construct and interpret a relative frequency table, using data from two categorical variables collected from the same subject.</p>	<p>8 M6 Lesson 18: Bivariate Categorical Data</p> <p>8 M6 Lesson 19: Association in Bivariate Categorical Data</p> <p>8 M6 Lesson 20: Analyzing Bivariate Categorical Data</p>

## Statistics & Probability

### Probability

Students understand theoretical and experimental probability for compound experiments using organized lists, tables, or tree diagrams.

Arkansas Mathematics Standards	Aligned Components of <i>Eureka Math</i> <sup>2</sup>
<p><b>8.SP.4</b></p> <p>Determine the sample space and use the sample space to determine the theoretical probability of a given set of outcomes for compound experiments, using organized lists, tables, or tree diagrams.</p>	<p>7 M6 Lesson 5: Multistage Experiments</p>
<p><b>8.SP.5</b></p> <p>Determine theoretical and experimental probabilities of compound experiments.</p>	<p>7 M6 Lesson 5: Multistage Experiments</p>
<p><b>8.SP.6</b></p> <p>Use theoretical probability of an event in a compound experiment to predict the number of times that event will occur for a large number of experiments.</p>	<p>7 M6 Lesson 9: Probability Simulations</p> <p>7 M6 Lesson 10: Simulations with Random Number Tables</p>