Grade 4 | Arkansas Mathematics Standards Correlation to *Eureka Math*®

About *Eureka Math*

Created by Great Minds®, a mission-driven Public Benefit Corporation, *Eureka Math*® helps teachers deliver unparalleled math instruction that provides students with a deep understanding and fluency in math. Crafted by teachers and math scholars, the curriculum carefully sequences the mathematical progressions to maximize coherence from Prekindergarten through Precalculus—a principle tested and proven to be essential in students' mastery of math.

Teachers and students using *Eureka Math* find the trademark "Aha!" moments in *Eureka Math* to be a source of joy and inspiration, lesson after lesson, year after year.

Aligned

Great Minds offers detailed analyses that demonstrate how each grade of *Eureka Math* aligns with specific state standards. Access these free alignment studies at greatminds.org/state-studies.

Data

Schools and districts nationwide are experiencing student growth and impressive test scores after using *Eureka Math*. See their stories and data at greatminds.org/data.

Full Suite of Resources

Great Minds offers the *Eureka Math* curriculum as PDF downloads for free, noncommercial use. Access the free PDFs at greatminds.org/math/curriculum.

The teacher–writers who created the curriculum have also developed essential resources, available only from Great Minds, including the following:

- Printed material in English and Spanish
- Digital resources
- Professional development
- Classroom tools and manipulatives
- Teacher support materials
- Parent resources

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

Number & Place Value
Place Value
Students understand the base ten place value system.

Arkansas Mathematics Standards	Aligned Components of *Eureka Math*
4.NPV.1 Recognize that a digit in a given place represents ten times what it represents in the place to its right.	G4 M1 Lesson 1: Interpret a multiplication equation as a comparison. G4 M1 Lesson 2: Recognize a digit represents 10 times the value of what it represents in the place to its right. G4 M1 Lesson 3: Name numbers within 1 million by building understanding of the place value chart and placement of commas for naming base thousand units. G4 M3 Topic B: Multiplication by 10, 100, and 1,000
4.NPV.2 Read and write whole numbers up to 1,000,000 using base ten numerals, word form, and a variety of expanded forms.	G4 M1 Lesson 2: Recognize a digit represents 10 times the value of what it represents in the place to its right. G4 M1 Lesson 3: Name numbers within 1 million by building understanding of the place value chart and placement of commas for naming base thousand units. G4 M1 Lesson 4: Read and write multi-digit numbers using base ten numerals, number names, and expanded form. G4 M1 Lesson 5: Compare numbers based on meanings of the digits, using >, <, or = to record the comparison. G4 M7 Lesson 17: Practice and solidify Grade 4 fluency.
4.NPV.3 Use place value understanding to round five-digit and six-digit whole numbers to any place.	G4 M1 Topic C: Rounding Multi-Digit Whole Numbers

Number & Place Value

Comparison

Students use place value understanding to compare numbers.

Arkansas Mathematics Standards	Aligned Components of *Eureka Math*
4.NPV.4 Compare two five-digit whole numbers and six-digit whole numbers, using symbols ($<, =, >$) to record the results of comparisons.	G4 M1 Lesson 2: Recognize a digit represents 10 times the value of what it represents in the place to its right. G4 M1 Lesson 3: Name numbers within 1 million by building understanding of the place value chart and placement of commas for naming base thousand units. G4 M1 Lesson 4: Read and write multi-digit numbers using base ten numerals, number names, and expanded form. G4 M1 Lesson 5: Compare numbers based on meanings of the digits, using $>$, $<$, or $=$ to record the comparison. G4 M7 Lesson 17: Practice and solidify Grade 4 fluency.
4.NPV.5 Compare two fractions with different numerators and different denominators using symbols ($<, =, >$) to record the results of comparisons (e.g., by creating common denominators or numerators or by comparing to a benchmark of $0, \frac{1}{2}, 1$).	G4 M5 Topic C: Fraction Comparison G4 M5 Lesson 26: Compare fractions greater than 1 by reasoning using benchmark fractions. G4 M5 Lesson 27: Compare fractions greater than 1 by creating common numerators or denominators. G4 M5 Lesson 28: Solve word problems with line plots.
4.NPV.6 Compare two decimals to the hundredths place, using symbols ($<, =, >$) to record the results of comparisons.	G4 M6 Topic C: Decimal Comparison

Number & Place Value
Fraction Foundations
Students develop a conceptual understanding of fractions.

Arkansas Mathematics Standards	Aligned Components of *Eureka Math*
4.NPV.7 Decompose fractions, including fractions greater than one and mixed numbers, into unit fractions, using concrete models, drawings, and/or the number line.	G4 M5 Lesson 1: Decompose fractions as a sum of unit fractions using tape diagrams. G4 M5 Lesson 2: Decompose fractions as a sum of unit fractions using tape diagrams. G4 M5 Lesson 4: Decompose fractions into sums of smaller unit fractions using tape diagrams. G4 M5 Lesson 5: Decompose unit fractions using area models to show equivalence. G4 M5 Lesson 6: Decompose fractions using area models to show equivalence.

Number & Place Value
Equivalent Fractions
Students develop and apply equivalent fraction understanding.

Arkansas Mathematics Standards	Aligned Components of *Eureka Math*
4.NPV.8 Explain why a fraction $\frac{a}{b}$ is equivalent to a fraction $\frac{(n \cdot a)}{(n \cdot b)}$, using visual fraction models, generating equivalent fractions using the principle $\frac{a}{b} = \frac{n \times a}{n \times b}$.	G4 M5 Lesson 5: Decompose unit fractions using area models to show equivalence. G4 M5 Lesson 6: Decompose fractions using area models to show equivalence. G4 M5 Topic B: Fraction Equivalence Using Multiplication and Division G4 M5 Lesson 20: Use visual models to add two fractions with related units using the denominators 2, 3, 4, 5, 6, 8, 10, and 12. G4 M5 Lesson 21: Use visual models to add two fractions with related units using the denominators 2, 3, 4, 5, 6, 8, 10, and 12. G4 M6 Lesson 5: Model the equivalence of tenths and hundredths using the area model and place value disks. G4 M6 Lesson 8: Use understanding of fraction equivalence to investigate decimal numbers on the place value chart expressed in different units. G5 M3 Lesson 1: Make equivalent fractions with the number line, the area model, and numbers.

Arkansas Mathematics Standards	Aligned Components of *Eureka Math*
4.NPV.9 Add two fractions with denominators of 10 and 100 by expressing the denominator of 10 as an equivalent fraction with a denominator of 100.	G4 M6 Topic D: Addition with Tenths and Hundredths
4.NPV.10 Apply decimal notation for fractions with denominators 10 or 100.	G4 M6 Topic A: Exploration of Tenths G4 M6 Lesson 4: Use meters to model the decomposition of one whole into hundredths. Represent and count hundredths. G4 M6 Lesson 5: Model the equivalence of tenths and hundredths using the area model and place value disks. G4 M6 Lesson 6: Use the area model and number line to represent mixed numbers with units of ones, tenths, and hundredths in fraction and decimal forms. G4 M6 Lesson 7: Model mixed numbers with units of hundreds, tens, ones, tenths, and hundredths in expanded form and on the place value chart. G4 M6 Lesson 12: Apply understanding of fraction equivalence to add tenths and hundredths. G4 M6 Lesson 13: Add decimal numbers by converting to fraction form. G4 M6 Lesson 15: Express money amounts given in various forms as decimal numbers. G4 M7 Lesson 17: Practice and solidify Grade 4 fluency.

Computation & Algebraic Reasoning

Operations & Properties

Students perform operations, using place value understanding and properties of operations.

Arkansas Mathematics Standards	Aligned Components of *Eureka Math*
4.CAR.1 Find the factor pairs for a given number in the range of 1–100, identifying whether a number is prime or composite; determine whether a given whole number in the range of 1–100 is a multiple of a given one-digit number.	G4 M3 Topic F: Reasoning with Divisibility G4 M7 Lesson 18: Practice and solidify Grade 4 vocabulary.
4.CAR.2 Use computational fluency to add and subtract whole numbers up to 1,000,000 by using strategies and algorithms, including the standard algorithm, with mastery by the end of fourth grade.	G4 M1 Lesson 11: Use place value understanding to fluently add multi-digit whole numbers using the standard addition algorithm, and apply the algorithm to solve word problems using tape diagrams. G4 M1 Lesson 13: Use place value understanding to decompose to smaller units once using the standard subtraction algorithm, and apply the algorithm to solve word problems using tape diagrams. G4 M1 Lesson 14: Use place value understanding to decompose to smaller units up to three times using the standard subtraction algorithm, and apply the algorithm to solve word problems using tape diagrams. G4 M1 Lesson 15: Use place value understanding to fluently decompose to smaller units multiple times in any place using the standard subtraction algorithm, and apply the algorithm to solve word problems using tape diagrams. G4 M7 Lesson 17: Practice and solidify Grade 4 fluency.
4.CAR.3 Use strategies based on place value and the properties of operations to multiply four-digit by one-digit whole numbers and two two-digit whole numbers.	G4 M3 Topic B: Multiplication by 10, 100, and 1,000 G4 M3 Topic C: Multiplication of up to Four Digits by Single-Digit Numbers G4 M3 Topic D: Multiplication Word Problems G4 M3 Topic H: Multiplication of Two-Digit by Two-Digit Numbers G4 M7 Lesson 17: Practice and solidify Grade 4 fluency.

Arkansas Mathematics Standards	Aligned Components of *Eureka Math*
4.CAR.4 Use strategies based on place value, the properties of operations, and the relationship between multiplication and division to divide whole numbers with four-digits by one-digit divisors; quotients should be with and without whole number remainders.	G4 M3 Topic E: Division of Tens and Ones with Successive Remainders G4 M3 Lesson 26: Divide multiples of 10, 100, and 1,000 by single-digit numbers. G4 M3 Lesson 27: Represent and solve division problems with up to a three-digit dividend numerically and with place value disks requiring decomposing a remainder in the hundreds place. G4 M3 Lesson 28: Represent and solve three-digit dividend division with divisors of 2, 3, 4, and 5 numerically. G4 M3 Lesson 29: Represent numerically four-digit dividend division with divisors of 2, 3, 4, and 5, decomposing a remainder up to three times. G4 M3 Lesson 30: Solve division problems with a zero in the dividend or with a zero in the quotient. G4 M3 Lesson 32: Interpret and find whole number quotients and remainders to solve one-step division word problems with larger divisors of 6, 7, 8, and 9. G4 M3 Lesson 33: Explain the connection of the area model of division to the long division algorithm for three- and four-digit dividends. G4 M7 Lesson 17: Practice and solidify Grade 4 fluency.
4.CAR.5 Add and subtract fractions, including mixed numbers, with like denominators, using visual fraction models and equations.	G4 M5 Topic D: Fraction Addition and Subtraction G4 M5 Lesson 22: Add a fraction less than 1 to, or subtract a fraction less than 1 from, a whole number using decomposition and visual models. G4 M5 Lesson 24: Decompose and compose fractions greater than 1 to express them in various forms. G4 M5 Topic F: Addition and Subtraction of Fractions by Decomposition

Arkansas Mathematics Standards	Aligned Components of *Eureka Math*
4.CAR.6 Multiply a fraction by a whole number using visual fraction models and equations.	G4 M5 Lesson 3: Decompose non-unit fractions and represent them as a whole number times a unit fraction using tape diagrams. G4 M5 Lesson 4: Decompose fractions into sums of smaller unit fractions using tape diagrams. G4 M5 Lesson 5: Decompose unit fractions using area models to show equivalence. G4 M5 Lesson 6: Decompose fractions using area models to show equivalence. G4 M5 Lesson 23: Add and multiply unit fractions to build fractions greater than 1 using visual models. G4 M5 Lesson 25: Decompose and compose fractions greater than 1 to express them in various forms. G4 M5 Topic G: Repeated Addition of Fractions as Multiplication G5 M3 Lesson 2: Make equivalent fractions with sums of fractions with like denominators.

Computation & Algebraic Reasoning
Problem Solving
Students solve real-world problems.

Arkansas Mathematics Standards	Aligned Components of *Eureka Math*
4.CAR.7 Solve real-world problems involving multiplicative comparison, using drawings and/or equations with a symbol for the unknown number, and distinguish between multiplicative comparison and additive comparison.	G4 M1 Lesson 1: Interpret a multiplication equation as a comparison. G4 M1 Lesson 2: Recognize a digit represents 10 times the value of what it represents in the place to its right. G4 M3 Lesson 2: Solve multiplicative comparison word problems by applying the area and perimeter formulas. G4 M3 Lesson 3: Demonstrate understanding of area and perimeter formulas by solving multi-step real world problems. G4 M3 Lesson 11: Connect the area model and the partial products method to the standard algorithm. G4 M3 Topic D: Multiplication Word Problems

Arkansas Mathematics Standards	Aligned Components of *Eureka Math*
4.CAR.7 *continued*	G4 M3 Lesson 26: Divide multiples of 10, 100, and 1,000 by single-digit numbers. G4 M7 Lesson 4: Solve multiplicative comparison word problems using measurement conversion tables. G4 M7 Lesson 5: Share and critique peer strategies. G4 M7 Lesson 8: Solve problems involving mixed units of weight. G4 M7 Lesson 10: Solve multi-step measurement word problems.
4.CAR.8 Solve multi-step, real-world problems posed with whole numbers and having whole-number answers, using addition, subtraction, multiplication, and division; include problems in which remainders must be interpreted and represent these problems using equations with symbols standing for the unknown quantity.	G4 M1 Topic D: Multi-Digit Whole Number Addition G4 M1 Topic E: Multi-Digit Whole Number Subtraction G4 M1 Topic F: Addition and Subtraction Word Problems G4 M3 Topic D: Multiplication Word Problems G4 M3 Lesson 29: Represent numerically four-digit dividend division with divisors of 2, 3, 4, and 5, decomposing a remainder up to three times. G4 M3 Lesson 31: Interpret division word problems as either number of groups unknown or group size unknown. G4 M7 Lesson 6: Solve problems involving mixed units of capacity. G4 M7 Lesson 8: Solve problems involving mixed units of weight. G4 M7 Lesson 9: Solve problems involving mixed units of time. G4 M7 Lesson 10: Solve multi-step measurement word problems. G4 M7 Lesson 11: Solve multi-step measurement word problems. G4 M7 Lesson 14: Solve multi-step word problems involving converting mixed number measurements to a single unit. G4 M7 Lesson 15: Create and determine the area of composite figures.

Arkansas Mathematics Standards	Aligned Components of *Eureka Math*
4.CAR.9 Solve real-world problems involving the addition and subtraction of fractions; include mixed numbers with like denominators, using visual fraction models or equations.	G4 M5 Lesson 19: Solve word problems involving addition and subtraction of fractions. G4 M5 Lesson 28: Solve word problems with line plots.
4.CAR.10 Solve real-word problems involving the multiplication of a fraction by a whole number using visual fraction models or equations.	G4 M5 Topic G: Repeated Addition of Fractions as Multiplication

Computation & Algebraic Reasoning

Algebraic Concepts

Students develop and apply an understanding of foundational algebraic concepts.

Arkansas Mathematics Standards	Aligned Components of *Eureka Math*
4.CAR.11 Generate a number or shape pattern that follows a given rule, identifying apparent features of the pattern that are not explicit in the rule itself.	G4 M1 Lesson 6: Find 1, 10, and 100 thousand more and less than a given number. G4 M3 Lesson 23: Use division and the associative property to test for factors and observe patterns. G4 M3 Lesson 24: Determine if a whole number is a multiple of another number. G4 M3 Lesson 25: Explore properties of prime and composite numbers to 100 by using multiples. G4 M5 Topic H: Exploring a Fraction Pattern G6 M2 Lesson 16: Even and Odd Numbers

Geometry & Measurement
Shapes
Students expand knowledge of shapes by analyzing sides and angles.

Arkansas Mathematics Standards	Aligned Components of *Eureka Math*
4.GM.1 Identify angles as geometric shapes that are formed where two rays share a common endpoint, understanding that angles are measured with reference to a circle so that an angle that turns through a $\frac{1}{360}$ of a circle is called a "one-degree angle" and an angle that turns through n one-degree angles is said to have an angle measure of n degree.	G4 M4 Lesson 5: Use a circular protractor to understand a 1-degree angle as $\frac{1}{360}$ of a turn. Explore benchmark angles using the protractor. G4 M4 Lesson 8: Identify and measure angles as turns and recognize them in various contexts. G4 M7 Lesson 18: Practice and solidify Grade 4 vocabulary.
4.GM.2 Measure angles in whole-number degrees, using a protractor, drawing angles of specified measure.	G4 M4 Lesson 5: Use a circular protractor to understand a 1-degree angle as $\frac{1}{360}$ of a turn. Explore benchmark angles using the protractor. G4 M4 Lesson 6: Use varied protractors to distinguish angle measure from length measurement. G4 M4 Lesson 7: Measure and draw angles. Sketch given angle measures, and verify with a protractor. G4 M7 Lesson 16: Create and determine the area of composite figures. G4 M7 Lesson 17: Practice and solidify Grade 4 fluency. G4 M7 Lesson 18: Practice and solidify Grade 4 vocabulary.

Arkansas Mathematics Standards	Aligned Components of *Eureka Math*
4.GM.3 Solve real-word problems finding unknown angle measures, using addition and subtraction when an angle is decomposed into non-overlapping parts.	G4 M4 Topic C: Problem Solving with the Addition of Angle Measures G4 M7 Lesson 17: Practice and solidify Grade 4 fluency.
4.GM.4 Identify and draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines, identifying these in quadrilaterals and triangles.	G4 M4 Topic A: Lines and Angles G4 M4 Lesson 14: Define and construct triangles from given criteria. Explore symmetry in triangles. G4 M4 Lesson 15: Classify quadrilaterals based on parallel and perpendicular lines and the presence or absence of angles of a specified size. G4 M4 Lesson 16: Reason about attributes to construct quadrilaterals on square or triangular grid paper. G4 M7 Lesson 16: Create and determine the area of composite figures. G4 M7 Lesson 18: Practice and solidify Grade 4 vocabulary. G5 M6 Lesson 13: Construct parallel line segments on a rectangular grid. G5 M6 Lesson 15: Construct perpendicular line segments on a rectangular grid.
4.GM.5 Classify two-dimensional figures based on the presence or absence of parallel lines, perpendicular lines, or angles of a specified size, involving quadrilaterals and triangles.	G4 M4 Lesson 13: Analyze and classify triangles based on side length, angle measure, or both. G4 M4 Lesson 14: Define and construct triangles from given criteria. Explore symmetry in triangles. G4 M4 Lesson 15: Classify quadrilaterals based on parallel and perpendicular lines and the presence or absence of angles of a specified size. G4 M4 Lesson 16: Reason about attributes to construct quadrilaterals on square or triangular grid paper. G4 M7 Lesson 18: Practice and solidify Grade 4 vocabulary.

Arkansas Mathematics Standards	Aligned Components of *Eureka Math*
4.GM.6 Identify and/or draw lines of symmetry for a two-dimensional figure.	G4 M4 Lesson 12: Recognize lines of symmetry for given two-dimensional figures. Identify line-symmetric figures, and draw lines of symmetry. G4 M4 Lesson 13: Analyze and classify triangles based on side length, angle measure, or both. G4 M4 Lesson 14: Define and construct triangles from given criteria. Explore symmetry in triangles. G4 M7 Lesson 18: Practice and solidify Grade 4 vocabulary. G5 M6 Lesson 17: Draw symmetric figures using distance and angle measure from the line of symmetry.

Geometry & Measurement

Perimeter, Area, & Volume
Students calculate the perimeter of polygons, area of rectangles, and liquid volume.

Arkansas Mathematics Standards	Aligned Components of *Eureka Math*
4.GM.7 Apply the area and perimeter formulas for rectangles and figures composed of two or more rectangles in real-world situations.	G4 M3 Topic A: Multiplicative Comparison Word Problems G4 M7 Lesson 15: Create and determine the area of composite figures. G4 M7 Lesson 16: Create and determine the area of composite figures.

Geometry & Measurement

Time, Money, & Conversions
Students apply measurement knowledge to solve real-world problems.

Arkansas Mathematics Standards	Aligned Components of *Eureka Math*
4.GM.8 Convert measurements of length, weight/mass, and liquid volume within the same system of measurement, metric and customary, expressing measurements from a larger unit in terms of a smaller unit.	G4 M2 Topic A: Metric Unit Conversions G4 M2 Lesson 4: Know and relate metric units to place value units in order to express measurements in different units. G4 M7 Lesson 1: Create conversion tables for length, weight, and capacity units using measurement tools, and use the tables to solve problems. G4 M7 Lesson 2: Create conversion tables for length, weight, and capacity units using measurement tools, and use the tables to solve problems. G4 M7 Lesson 3: Create conversion tables for units of time, and use the tables to solve problems. G4 M7 Lesson 5: Share and critique peer strategies. G4 M7 Lesson 6: Solve problems involving mixed units of capacity. G4 M7 Lesson 7: Solve problems involving mixed units of length. G4 M7 Lesson 8: Solve problems involving mixed units of weight. G4 M7 Lesson 9: Solve problems involving mixed units of time.

Arkansas Mathematics Standards	Aligned Components of *Eureka Math*
4.GM.8 *continued*	G4 M7 Lesson 12: Use measurement tools to convert mixed number measurements to smaller units.
	G4 M7 Lesson 13: Use measurement tools to convert mixed number measurements to smaller units.
	G4 M7 Lesson 18: Practice and solidify Grade 4 vocabulary.
4.GM.9 Solve real-world problems involving time intervals that may cross the hour.	G4 M7 Lesson 9: Solve problems involving mixed units of time. *Supplemental material is necessary to fully address this standard.*
4.GM.10 Solve real-world problems involving addition and subtraction of money, including the ability to make change.	G4 M6 Lesson 16: Solve word problems involving money. *Supplemental material is necessary to address making change.*
4.GM.11 Solve real-world problems involving distances, liquid volume, and masses of objects, including problems that require expressing measurements given in a larger unit in terms of a smaller unit.	G4 M2 Topic A: Metric Unit Conversions G4 M2 Topic B: Application of Metric Unit Conversions G4 M5 Lesson 40: Solve word problems involving the multiplication of a whole number and a fraction including those involving line plots. G4 M6 Lesson 14: Solve word problems involving the addition of measurements in decimal form. G4 M6 Lesson 16: Solve word problems involving money. G4 M7 Topic B: Problem Solving with Measurement G4 M7 Lesson 14: Solve multi-step word problems involving converting mixed number measurements to a single unit.

Data Analysis
Charts, Graphs, & Tables
Students organize and analyze data.

Arkansas Mathematics Standards	Aligned Components of *Eureka Math*
4.DA.1 Collect and interpret data from observations, surveys, and experiments; represent data using frequency tables and scaled bar graphs.	*Supplemental material is necessary to address this standard.*
4.DA.2 Use a line plot to display a data set of measurements in fractions of a unit, solving problems involving addition and subtraction of fractions with like denominators using data presented in line plots.	G4 M5 Lesson 28: Solve word problems with line plots. G4 M5 Lesson 40: Solve word problems involving the multiplication of a whole number and a fraction including those involving line plots.