Grade 4 | 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.

Student Mathematical Practices	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.

Operations and Algebraic Thinking

Solve problems with whole numbers using the four operations.

Alabama Standards for Mathematical Content	Aligned Components of *Eureka Math²*
4.OA.1 Interpret and write equations for multiplicative comparisons.	4 M1 Topic A: Multiplication as Multiplicative Comparison 4 M1 Lesson 6: Demonstrate that a digit represents 10 times the value of what it represents in the place to its right.
4.OA.2 Solve word problems involving multiplicative comparison using drawings and write equations to represent the problem, using a symbol for the unknown number.	4 M1 Topic A: Multiplication as Multiplicative Comparison 4 M2 Lesson 9: Solve multiplication word problems. 4 M2 Lesson 20: Solve word problems involving additive and multiplicative comparisons.
4.OA.3 Determine and justify solutions for multi-step word problems, including problems where remainders must be interpreted.	*This standard is fully addressed by the lessons aligned to its subsections.*
4.OA.3.a Write equations to show solutions for multi-step word problems with a letter standing for the unknown quantity.	4 M1 Lesson 15: Apply estimation to real-world situations by using rounding. 4 M1 Lesson 16: Add by using the standard algorithm. 4 M1 Lesson 17: Solve multi-step addition word problems by using the standard algorithm. 4 M1 Lesson 21: Solve two-step word problems by using addition and subtraction. 4 M1 Lesson 22: Solve multi-step word problems by using addition and subtraction. 4 M3 Topic F: Remainders, Estimating, and Problem Solving

Alabama Standards for Mathematical Content	Aligned Components of *Eureka Math²*
4.OA.3.b Determine reasonableness of answers for multi-step word problems, using mental computation and estimation strategies including rounding.	4 M1 Lesson 15: Apply estimation to real-world situations by using rounding. 4 M1 Lesson 16: Add by using the standard algorithm. 4 M1 Lesson 17: Solve multi-step addition word problems by using the standard algorithm. 4 M1 Lesson 21: Solve two-step word problems by using addition and subtraction. 4 M1 Lesson 22: Solve multi-step word problems by using addition and subtraction. 4 M3 Topic F: Remainders, Estimating, and Problem Solving

Operations and Algebraic Thinking

Gain familiarity with factors and multiples.

Alabama Standards for Mathematical Content	Aligned Components of *Eureka Math²*
4.OA.4 For whole numbers in the range 1 to 100, find all factor pairs, identifying a number as a multiple of each of its factors.	*This standard is fully addressed by the lessons aligned to its subsections.*
4.OA.4.a Determine whether a whole number in the range 1 to 100 is a multiple of a given one-digit number.	4 M2 Lesson 23: Determine whether a whole number is a multiple of another number. 4 M2 Lesson 24: Recognize that a number is a multiple of each of its factors. 4 M2 Lesson 25: Explore properties of prime and composite numbers up to 100 by using multiples.
4.OA.4.b Determine whether a whole number in the range 1 to 100 is prime or composite.	4 M2 Lesson 21: Find factor pairs for numbers up to 100 and use factors to identify numbers as prime or composite. 4 M2 Lesson 22: Use division and the associative property of multiplication to find factors. 4 M2 Lesson 23: Determine whether a whole number is a multiple of another number. 4 M2 Lesson 24: Recognize that a number is a multiple of each of its factors. 4 M2 Lesson 25: Explore properties of prime and composite numbers up to 100 by using multiples.

Operations and Algebraic Thinking

Generate and analyze patterns.

Alabama Standards for Mathematical Content	Aligned Components of *Eureka Math²*
4.OA.5 Generate and analyze a number or shape pattern that follows a given rule.	4 M2 Lesson 26: Use relationships within a pattern to find an unknown term in the sequence.

Operations with Numbers: Base Ten

Generalize place value understanding for multi-digit whole numbers.

Alabama Standards for Mathematical Content	Aligned Components of *Eureka Math²*
4.NBT.6 Using models and quantitative reasoning, explain that in a multi-digit whole number, a digit in any place represents ten times what it represents in the place to its right.	4 M1 Lesson 6: Demonstrate that a digit represents 10 times the value of what it represents in the place to its right.
4.NBT.7 Read and write multi-digit whole numbers using standard form, word form, and expanded form.	4 M1 Lesson 5: Organize, count, and represent a collection of objects. 4 M1 Lesson 7: Write numbers to $1{,}000{,}000$ in unit form and expanded form by using place value structure. 4 M1 Lesson 8: Write numbers to $1{,}000{,}000$ in standard form and word form. 4 M1 Lesson 10: Name numbers by using place value understanding. 4 M1 Lesson 11: Find 1, 10, and 100 thousand more than and less than a given number.

Alabama Standards for Mathematical Content	Aligned Components of *Eureka Math²*
4.NBT.8 Use place value understanding to compare two multi-digit numbers using $>$, $=$, and $<$ symbols.	4 M1 Lesson 9: Compare numbers within $1{,}000{,}000$ by using $>$, $=$, and $<$.
4.NBT.9 Round multi-digit whole numbers to any place using place value understanding.	4 M1 Lesson 12: Round to the nearest thousand. 4 M1 Lesson 13: Round to the nearest ten thousand and hundred thousand. 4 M1 Lesson 14: Round multi-digit numbers to any place. 4 M1 Lesson 15: Apply estimation to real-world situations by using rounding.

Operations with Numbers: Base Ten

Use place value understanding and properties of operations to perform multi-digit arithmetic with whole numbers.

Alabama Standards for Mathematical Content	Aligned Components of *Eureka Math²*
4.NBT.10 Use place value strategies to fluently add and subtract multi-digit whole numbers and connect strategies to the standard algorithm.	4 M1 Topic D: Multi-Digit Whole Number Addition and Subtraction
4.NBT.11 Find the product of two factors (up to four digits by a one-digit number and two two-digit numbers), using strategies based on place value and the properties of operations.	*This standard is fully addressed by the lessons aligned to its subsection.*

Alabama Standards for Mathematical Content	Aligned Components of *Eureka Math²*
4.NBT.11.a Illustrate and explain the product of two factors using equations, rectangular arrays, and area models.	4 M2 Lesson 1: Multiply multiples of 10 by one-digit numbers by using the associative property of multiplication. 4 M2 Topic B: Multiplication of Tens and Ones by One-Digit Numbers 4 M3 Lesson 2: Multiply by multiples of 100 and 1,000. 4 M3 Lesson 3: Multiply a two-digit multiple of 10 by a two-digit multiple of 10. 4 M3 Topic C: Multiplication of up to Four-Digit Numbers by One-Digit Numbers 4 M3 Topic D: Multiplication of Two-Digit Numbers by Two-Digit Numbers
4.NBT.12 Use strategies based on place value, properties of operations, and/or the relationship between multiplication and division to find whole-number quotients and remainders with one-digit divisors and up to four-digit dividends.	*This standard is fully addressed by the lessons aligned to its subsection.*
4.NBT.12.a Illustrate and/or explain quotients using equations, rectangular arrays, and/or area models.	4 M2 Lesson 2: Divide two- and three-digit multiples of 10 by one-digit numbers. 4 M2 Topic C: Division of Tens and Ones by One-Digit Numbers 4 M3 Lesson 1: Divide multiples of 100 and 1,000. 4 M3 Topic B: Division of Thousands, Hundreds, Tens, and Ones 4 M3 Lesson 21: Find whole-number quotients and remainders. 4 M3 Lesson 22: Represent, estimate, and solve division word problems.

Operations with Numbers: Fractions

Extend understanding of fraction equivalence and ordering.

Alabama Standards for Mathematical Content	Aligned Components of *Eureka Math²*
4.NF.13 Using area and length fraction models, explain why one fraction is equivalent to another, taking into account that the number and size of the parts differ even though the two fractions themselves are the same size.	*This standard is fully addressed by the lessons aligned to its subsection.*
4.NF.13.a Apply principles of fraction equivalence to recognize and generate equivalent fractions.	4 M4 Lesson 8: Generate equivalent fractions with smaller units for unit fractions. 4 M4 Lesson 9: Generate equivalent fractions with smaller units for non-unit fractions. 4 M4 Lesson 10: Generate equivalent fractions with larger units. 4 M4 Lesson 11: Represent equivalent fractions by using tape diagrams, number lines, and multiplication or division. 4 M4 Lesson 12: Generate equivalent fractions for fractions greater than 1 and generate equivalent mixed numbers.
4.NF.14 Compare two fractions with different numerators and different denominators using concrete models, benchmarks $(0, \frac{1}{2}, 1)$, common denominators, and/or common numerators, recording the comparisons with symbols $>$, $=$, or $<$, and justifying the conclusions.	*This standard is fully addressed by the lessons aligned to its subsection.*

Alabama Standards for Mathematical Content	Aligned Components of *Eureka Math²*
4.NF.14.a Explain that comparison of two fractions is valid only when the two fractions refer to the same whole.	4 M4 Topic C: Compare Fractions

Operations with Numbers: Fractions

Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.

Alabama Standards for Mathematical Content	Aligned Components of *Eureka Math²*
4.NF.15 Model and justify decompositions of fractions and explain addition and subtraction of fractions as joining or separating parts referring to the same whole.	*This standard is fully addressed by the lessons aligned to its subsections.*
4.NF.15.a Decompose a fraction as a sum of unit fractions and as a sum of fractions with the same denominator in more than one way using area models, length models, and equations.	4 M4 Topic A: Fraction Decomposition and Equivalence 4 M4 Lesson 7: Rename fractions as a sum of equivalent smaller unit fractions. 4 M4 Topic D: Add and Subtract Fractions

Alabama Standards for Mathematical Content	Aligned Components of *Eureka Math²*
4.NF.15.b Add and subtract fractions and mixed numbers with like denominators using fraction equivalence, properties of operations, and the relationship between addition and subtraction.	4 M4 Lesson 23: Add a fraction to a mixed number. 4 M4 Lesson 24: Add a mixed number to a mixed number. 4 M4 Lesson 25: Subtract a fraction from a mixed number, part 1. 4 M4 Lesson 26: Subtract a fraction from a mixed number, part 2. 4 M4 Lesson 27: Subtract a mixed number from a mixed number.
4.NF.15.c Solve word problems involving addition and subtraction of fractions and mixed numbers having like denominators, using drawings, visual fraction models, and equations to represent the problem.	4 M4 Lesson 18: Estimate sums and differences of fractions by using benchmarks. 4 M4 Lesson 20: Subtract a fraction from a whole number. 4 M4 Lesson 21: Solve addition and subtraction word problems and estimate the reasonableness of the answers. 4 M4 Lesson 24: Add a mixed number to a mixed number. 4 M4 Lesson 27: Subtract a mixed number from a mixed number. 4 M4 Lesson 28: Represent and solve word problems with mixed numbers by using drawings and equations.
4.NF.16 Apply and extend previous understandings of multiplication to multiply a whole number times a fraction.	*This standard is fully addressed by the lessons aligned to its subsections.*
4.NF.16.a Model and explain how a non-unit fraction can be represented by a whole number times the unit fraction.	4 M4 Lesson 31: Decompose non-unit fractions into a product of a whole number and a unit fraction.

Alabama Standards for Mathematical Content	Aligned Components of *Eureka Math²*
4.NF.16.b Extend previous understanding of multiplication to multiply a whole number times any fraction less than one.	4 M4 Lesson 32: Multiply a fraction by a whole number by using the associative property. 4 M4 Lesson 33: Solve word problems involving multiplication of a fraction by a whole number. 4 M4 Lesson 34: Multiply a mixed number by a whole number by using the distributive property.
4.NF.16.c Solve word problems involving multiplying a whole number times a fraction using visual fraction models and equations to represent the problem.	4 M4 Lesson 33: Solve word problems involving multiplication of a fraction by a whole number.

Operations with Numbers: Fractions

Understand decimal notation for fractions, and compare decimal fractions.

Alabama Standards for Mathematical Content	Aligned Components of *Eureka Math²*
4.NF.17 Express, model, and explain the equivalence between fractions with denominators of 10 and 100.	4 M5 Topic B: Tenths and Hundredths
4.NF.17.a Use fraction equivalency to add two fractions with denominators of 10 and 100.	4 M5 Topic D: Addition of Tenths and Hundredths

Alabama Standards for Mathematical Content	Aligned Components of *Eureka Math²*
4.NF.18 Use models and decimal notation to represent fractions with denominators of 10 and 100.	4 M5 Topic A: Exploration of Tenths 4 M5 Topic B: Tenths and Hundredths
4.NF.19 Use visual models and reasoning to compare two decimals to hundredths (referring to the same whole), recording comparisons using symbols $>$, $=$, or $<$, and justifying the conclusions.	4 M5 Topic C: Comparison of Decimal Numbers

Data Analysis

Represent and interpret data.

Alabama Standards for Mathematical Content	Aligned Components of *Eureka Math²*
4.DA.20 Interpret data in graphs (picture, bar, and line plots) to solve problems using numbers and operations.	4 M4 Lesson 29: Solve problems by using data from a line plot. 4 M4 Lesson 30: Represent data on a line plot. *Supplemental material is necessary to address picture graphs and bar graphs.*
4.DA.20.a Create a line plot to display a data set of measurements in fractions of a unit $\left(\frac{1}{2}, \frac{1}{4}, \frac{1}{8}\right)$.	4 M4 Lesson 30: Represent data on a line plot.

Alabama Standards for Mathematical Content	Aligned Components of *Eureka Math²*
4.DA.20.b Solve problems involving addition and subtraction of fractions using information presented in line plots.	4 M4 Lesson 29: Solve problems by using data from a line plot. 4 M4 Lesson 30: Represent data on a line plot.

Measurement

Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.

Alabama Standards for Mathematical Content	Aligned Components of *Eureka Math²*
4.M.21 Select and use an appropriate unit of measurement for a given attribute (length, mass, liquid volume, time) within one system of units: metric—km, m, cm; kg, g, l, ml; customary—lb, oz; time—hr, min, sec.	*This standard is fully addressed by the lessons aligned to its subsection.*
4.M.21.a Within one system of units, express measurements of a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table.	4 M1 Topic E: Metric Measurement Conversion Tables 4 M2 Lesson 17: Express measurements of length in terms of smaller units. 4 M3 Topic E: Problem Solving with Measurement

Alabama Standards for Mathematical Content	Aligned Components of *Eureka Math²*
4.M.22 Use the four operations to solve measurement word problems with distance, intervals of time, liquid volume, mass of objects, and money.	*This standard is fully addressed by the lessons aligned to its subsections.*
4.M.22.a Solve measurement problems involving simple fractions or decimals.	4 M2 Lesson 17: Express measurements of length in terms of smaller units. 4 M2 Lesson 20: Solve word problems involving additive and multiplicative comparisons. 4 M3 Topic E: Problem Solving with Measurement 4 M4 Lesson 18: Estimate sums and differences of fractions by using benchmarks. 4 M4 Lesson 20: Subtract a fraction from a whole number. 4 M4 Lesson 21: Solve addition and subtraction word problems and estimate the reasonableness of the answers. 4 M4 Lesson 24: Add a mixed number to a mixed number. 4 M4 Lesson 27: Subtract a mixed number from a mixed number. 4 M4 Lesson 28: Represent and solve word problems with mixed numbers by using drawings and equations. 4 M4 Lesson 33: Solve word problems involving multiplication of a fraction by a whole number. 4 M5 Lesson 14: Solve word problems with tenths and hundredths.
4.M.22.b Solve measurement problems that require expressing measurements given in a larger unit in terms of a smaller unit.	4 M2 Lesson 17: Express measurements of length in terms of smaller units. 4 M2 Lesson 20: Solve word problems involving additive and multiplicative comparisons. 4 M3 Topic E: Problem Solving with Measurement

Alabama Standards for Mathematical Content	Aligned Components of *Eureka Math²*
4.M.22.c Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.	4 M2 Lesson 17: Express measurements of length in terms of smaller units. 4 M2 Lesson 20: Solve word problems involving additive and multiplicative comparisons. 4 M3 Topic E: Problem Solving with Measurement 4 M4 Lesson 28: Represent and solve word problems with mixed numbers by using drawings and equations. 4 M5 Lesson 14: Solve word problems with tenths and hundredths.
4.M.23 Apply area and perimeter formulas for rectangles in real-world and mathematical situations.	4 M2 Lesson 3: Investigate and use a formula for the area of a rectangle. 4 M2 Lesson 7: Multiply by using an area model and the distributive property. 4 M2 Lesson 18: Investigate and use formulas for the perimeter of a rectangle. 4 M2 Lesson 19: Apply area and perimeter formulas to solve problems. 4 M2 Lesson 20: Solve word problems involving additive and multiplicative comparisons.

Measurement

Geometric measurement: understand concepts of angle and measure angles.

Alabama Standards for Mathematical Content	Aligned Components of *Eureka Math²*
4.M.24 Identify an angle as a geometric shape formed wherever two rays share a common endpoint.	4 M6 Lesson 7: Explore angles as fractional turns through a circle. 4 M6 Lesson 8: Use a circular protractor to recognize a 1° angle as a turn through $\frac{1}{360}$ of a circle. 4 M6 Lesson 9: Identify and measure angles as turns and recognize them in various contexts. 4 M6 Lesson 10: Use 180° protractors to measure angles. 4 M6 Lesson 11: Estimate and measure angles with a 180° protractor.

Alabama Standards for Mathematical Content	Aligned Components of *Eureka Math²*
4.M.25 Use a protractor to measure angles in whole-number degrees and sketch angles of specified measure.	4 M6 Topic B: Angle Measurement
4.M.26 Decompose an angle into non-overlapping parts to demonstrate that the angle measure of the whole is the sum of the angle measures of the parts.	*This standard is fully addressed by the lessons aligned to its subsection.*
4.M.26.a Solve addition and subtraction problems on a diagram to find unknown angles in real-world or mathematical problems.	4 M6 Topic C: Determine Unknown Angle Measures

Geometry

Draw and identify lines and angles, and identify shapes by properties of their lines and angles.

Alabama Standards for Mathematical Content	Aligned Components of *Eureka Math²*
4.G.27 Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines, and identify these in two-dimensional figures.	4 M6 Topic A: Lines and Angles 4 M6 Lesson 10: Use $180°$ protractors to measure angles. 4 M6 Lesson 11: Estimate and measure angles with a $180°$ protractor. 4 M6 Lesson 12: Use a protractor to draw angles up to $180°$. 4 M6 Lesson 18: Analyze and classify triangles based on side length, angle measures, or both. 4 M6 Lesson 19: Construct and classify triangles based on given attributes. 4 M6 Lesson 20: Sort polygons based on a given rule.

Alabama Standards for Mathematical Content	Aligned Components of *Eureka Math²*
4.G.28 Identify two-dimensional figures based on the presence or absence of parallel or perpendicular lines or the presence or absence of angles of a specified size.	4 M6 Lesson 18: Analyze and classify triangles based on side length, angle measures, or both. 4 M6 Lesson 19: Construct and classify triangles based on given attributes. 4 M6 Lesson 20: Sort polygons based on a given rule.
4.G.28.a Describe right triangles as a category, and identify right triangles.	4 M6 Lesson 18: Analyze and classify triangles based on side length, angle measures, or both. 4 M6 Lesson 19: Construct and classify triangles based on given attributes.
4.G.29 Define a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts.	*This standard is fully addressed by the lessons aligned to its subsection.*
4.G.29.a Identify line-symmetric figures and draw lines of symmetry.	4 M6 Lesson 17: Recognize, identify, and draw lines of symmetry.