## Grade 5 | Alabama Standards for Mathematical Content Correlation to Eureka Math ${ }^{\mathbf{2 ®}}$

When the original Eureka Math ${ }^{\circledR}$ curriculum was released, it quickly became the most widely used K-5 mathematics curriculum in the country. Now, the Great Minds ${ }^{\circledR}$ teacher-writers have created Eureka Math ${ }^{2 ®}$, 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 Math ${ }^{2}$ 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 Math ${ }^{2}$ employs streamlined materials that allow teachers to plan more efficiently and focus their energy on delivering highquality 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 Math ${ }^{2}$ 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.

## Aligned Components of Eureka Math ${ }^{2}$



## Operations and Algebraic Thinking

## Write and interpret numerical expressions.

## Alabama Standards for <br> Mathematical Content

## Aligned Components of Eureka Math ${ }^{2}$

## 5.OA. 1

Write, explain, and evaluate simple numerical expressions involving the four operations to solve up to two-step problems. Include expressions involving parentheses, brackets, or braces, using commutative, associative, and distributive properties.

5 M1 Lesson 7: Multiply by using familiar methods.
5 M1 Lesson 8: Multiply two- and three-digit numbers by two-digit numbers by using the distributive property.

5 M1 Topic D: Multi-Step Problems with Whole Numbers
5 M3 Lesson 12: Divide a nonzero whole number by a unit fraction to find the number of groups.
5 M3 Lesson 16: Reason about the size of quotients of whole numbers and unit fractions and quotients of unit fractions and whole numbers.

5 M3 Lesson 18: Compare and evaluate expressions with parentheses.
5 M3 Lesson 22: Evaluate expressions involving nested grouping symbols.
5 M4 Lesson 29: Interpret, evaluate, and compare numerical expressions involving decimals.
5 M4 Lesson 30: Create and solve real-world problems for given numerical expressions involving decimals.

Operations and Algebraic Thinking

## Analyze patterns and relationships.

## Alabama Standards for Mathematical Content

## 5.OA. 2

Generate two numerical patterns using two given rules and complete an input/output table for the data.

## Alabama Standards for Mathematical Content

## Aligned Components of Eureka Math²

## 5.OA.2.a

Use data from an input/output table to identify apparent relationships between corresponding terms.

|  | in number patterns. <br> 5 M6 Lesson 11: Draw lines in the coordinate plane and identify points on the lines. <br> 5 M6 Lesson 20: Reason about patterns in real-world situations. |
| :---: | :---: |
| 5.OA.2.b <br> Form ordered pairs from values in an input/output table. | 5 M6 Lesson 7: Generate number patterns to form ordered pairs. <br> 5 M6 Lesson 8: Identify addition and subtraction relationships between corresponding terms in number patterns. <br> 5 M6 Lesson 9: Identify multiplication and division relationships between corresponding terms in number patterns. <br> 5 M6 Lesson 11: Draw lines in the coordinate plane and identify points on the lines. <br> 5 M6 Lesson 20: Reason about patterns in real-world situations. |
| 5.OA.2.c <br> Graph ordered pairs from an input/output table on a coordinate plane. | 5 M6 Lesson 7: Generate number patterns to form ordered pairs. <br> 5 M6 Lesson 8: Identify addition and subtraction relationships between corresponding terms in number patterns. <br> 5 M6 Lesson 9: Identify multiplication and division relationships between corresponding terms in number patterns. <br> 5 M6 Lesson 11: Draw lines in the coordinate plane and identify points on the lines. <br> 5 M6 Lesson 20: Reason about patterns in real-world situations. |

Operations with Numbers: Base Ten Understand the place value system.

## Alabama Standards for Mathematical Content

## Aligned Components of Eureka Math ${ }^{2}$

## 5.NBT. 3

Using models and quantitative reasoning, explain that in a multi-digit number, including decimals, a digit in any place represents ten times what it represents in the place to its right and $\frac{1}{10}$ of what it represents in the place to its left.

## 5.NBT.3.a

Explain patterns in the number of zeros of the product when multiplying a number by powers of 10 , using whole-number exponents to denote powers of 10 .

5 M1 Lesson 1: Relate adjacent place value units by using place value understanding.
5 M1 Lesson 2: Multiply and divide by 10, 100, and 1,000 and identify patterns in the products and quotients.

5 M4 Lesson 1: Model and relate decimal place value units to thousandths.
5 M4 Lesson 2: Represent thousandths as a place value unit.
5 M4 Lesson 3: Represent decimal numbers to the thousandths place in different forms.
5 M4 Lesson 4: Relate the values of digits in a decimal number by using place value understanding.

5 M1 Lesson 2: Multiply and divide by 10, 100, and 1,000 and identify patterns in the products and quotients.

5 M1 Lesson 3: Use exponents to multiply and divide by powers of 10.
5 M1 Lesson 4: Estimate products and quotients by using powers of 10 and their multiples.
5 M4 Lesson 5: Multiply and divide decimal numbers by powers of 10.

## 5.NBT.3.b

Explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10 , using whole-number exponents to denote powers of 10 .

## 5.NBT. 4

Read, write, and compare decimals to thousandths.

5 M4 Lesson 5: Multiply and divide decimal numbers by powers of 10 .

This standard is fully addressed by the lessons aligned to its subsections.

## Alabama Standards for Mathematical Content

## Aligned Components of Eureka Math ${ }^{2}$

|  | 5 M4 Lesson 1: Model and relate decimal place value units to thousandths. |
| :---: | :---: |
| Read and write decimals to thousandths using base-ten numerals, number names, and expanded form. | 5 M4 Lesson 2: Represent thousandths as a place value unit. <br> 5 M4 Lesson 3: Represent decimal numbers to the thousandths place in different forms. |
| 5.NBT.4.b | 5 M4 Lesson 6: Compare decimal numbers to the thousandths place. |
| Compare two decimals to thousandths based on the meaning of the digits in each place, using >, =, and < to record the results of comparisons. |  |
| 5.NBT. 5 | 5 M4 Lesson 7: Round decimal numbers to the nearest one, tenth, or hundredth. |
| Use place value understanding to round decimals to thousandths. | 5 M4 Lesson 8: Round decimal numbers to any place value unit. |

Operations with Numbers: Base Ten

## Perform operations with multi-digit whole numbers and decimals to hundredths.

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## Aligned Components of Eureka Math ${ }^{2}$

## 5.NBT. 6

Fluently multiply multi-digit whole numbers using the standard algorithm.

5 M1 Topic B: Multiplication of Whole Numbers

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## Aligned Components of Eureka Math ${ }^{2}$

## 5.NBT. 7

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 up to four-digit dividends and two-digit divisors. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

## 5.NBT. 8

Add, subtract, multiply, and divide decimals to hundredths using strategies based on place value, properties of operations, and/or the relationships between addition/subtraction and multiplication/division; relate the strategy to a written method, and explain the reasoning used.

## 5.NBT.8.a

Use concrete models and drawings to solve problems with decimals to hundredths.

## 5.NBT.8.b

Solve problems in a real-world context with decimals to hundredths.

## 5 M1 Topic C: Division of Whole Numbers

This standard is fully addressed by the lessons aligned to its subsections.

## 5 M4 Topic B: Addition and Subtraction of Decimal Numbers

5 M4 Topic C: Multiplication of Decimal Numbers
5 M4 Topic D: Division of Decimal Numbers

5 M4 Topic B: Addition and Subtraction of Decimal Numbers
5 M4 Topic C: Multiplication of Decimal Numbers
5 M4 Topic D: Division of Decimal Numbers

## Operations with Numbers: Fractions

## Use equivalent fractions as a strategy to add and subtract fractions.

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## Aligned Components of Eureka Math²

## 5.NF. 9

Model and solve real-word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally, and assess the reasonableness of answers.

## 5.NF. 10

Add and subtract fractions and mixed numbers with unlike denominators using fraction equivalence to calculate a sum or difference of fractions or mixed numbers with like denominators.

5 M2 Topic C: Addition and Subtraction of Fractions, Whole Numbers, and Mixed Numbers
5 M2 Lesson 17: Solve problems by equally redistributing a total amount.

5 M2 Topic B: Addition and Subtraction of Fractions by Making Like Units
5 M2 Topic C: Addition and Subtraction of Fractions, Whole Numbers, and Mixed Numbers

## Operations with Numbers: Fractions

## Apply and extend previous understandings of multiplication and division to multiply and divide fractions.

## Alabama Standards for Mathematical Content

Aligned Components of Eureka Math ${ }^{2}$

## 5.NF. 11

Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers.

## Alabama Standards for Mathematical Content

## Aligned Components of Eureka Math ${ }^{2}$

| 5.NF.11.a | 5 M2 Topic A: Fractions and Division |
| :---: | :---: |
| Model and interpret a fraction as division of the numerator by the denominator $\left(\frac{a}{b}=a \div b\right)$. |  |
| 5.NF.11.b | 5 M2 Topic A: Fractions and Division |
| Use visual fraction models, drawings, or equations to represent word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers. |  |
| 5.NF. 12 | This standard is fully addressed by the lessons aligned to its subsections. |
| Apply and extend previous understandings of multiplication to find the product of a fraction times a whole number or a fraction times a fraction. |  |
| 5.NF.12.a | 5 M3 Topic A: Multiplication of a Whole Number by a Fraction |
| Use a visual fraction model (area model, set model, or linear model) to show $\frac{a}{b} \times q$ and create a story context for this equation to interpret the product as $a$ parts of a partition of $q$ into $b$ equal parts. | 5 M3 Lesson 7: Multiply fractions less than 1 by unit fractions pictorially. <br> 5 M3 Lesson 8: Multiply fractions less than 1 pictorially. <br> 5 M3 Lesson 11: Multiply fractions. |
| 5.NF.12.b | 5 M3 Topic A: Multiplication of a Whole Number by a Fraction |
| Use a visual fraction model (area model, set model, or linear model) to show $\frac{a}{b} \times \frac{c}{d}$ and create a story context for this equation to interpret the product. | 5 M3 Lesson 7: Multiply fractions less than 1 by unit fractions pictorially. <br> 5 M3 Lesson 8: Multiply fractions less than 1 pictorially. <br> 5 M3 Lesson 11: Multiply fractions. |

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## Aligned Components of Eureka Math ${ }^{2}$

## 5.NF.12.c

Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas.

5 M5 Lesson 8: Find areas of square tiles with fraction side lengths by relating the tile to a unit square.
5 M5 Lesson 9: Organize, count, and represent a collection of square tiles.
5 M5 Lesson 10: Find the area of a rectangle with fraction side lengths by relating the rectangle to a unit square.

5 M5 Lesson 11: Find areas of rectangles with fraction side lengths by using multiplication.
5 M5 Lesson 12: Multiply mixed numbers.
5 M5 Lesson 13: Solve mathematical problems involving areas of composite figures with mixed-number side lengths.

5 M5 Lesson 14: Solve real-world problems involving areas of composite figures with mixed-number side lengths.

5 M6 Lesson 15: Use the coordinate plane to reason about perimeters and areas of rectangles.

## 5.NF.12.d

Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths to show that the area is the same as would be found by multiplying the side lengths.

5 M5 Lesson 8: Find areas of square tiles with fraction side lengths by relating the tile to a unit square.
5 M5 Lesson 9: Organize, count, and represent a collection of square tiles.
5 M5 Lesson 10: Find the area of a rectangle with fraction side lengths by relating the rectangle to a unit square.

5 M5 Lesson 11: Find areas of rectangles with fraction side lengths by using multiplication.
5 M5 Lesson 12: Multiply mixed numbers.
5 M5 Lesson 13: Solve mathematical problems involving areas of composite figures with mixed-number side lengths.

5 M5 Lesson 14: Solve real-world problems involving areas of composite figures with mixed-number side lengths.

5 M6 Lesson 15: Use the coordinate plane to reason about perimeters and areas of rectangles.

## Alabama Standards for Mathematical Content

## Aligned Components of Eureka Math ${ }^{2}$

## 5.NF. 13

Interpret multiplication as scaling (resizing).

## 5.NF.13.a

Compare the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication.

## 5.NF.13.b

Explain why multiplying a given number by a fraction greater than 1 results in a product greater than the given number and relate the principle of fraction equivalence.

## 5.NF.13.c

Explain why multiplying a given number by a fraction less than 1 results in a product smaller than the given number and relate the principle of fraction equivalence.

This standard is fully addressed by the lessons aligned to its subsections.

5 M3 Lesson 3: Multiply a whole number by a fraction less than 1.
5 M3 Lesson 4: Multiply a whole number by a fraction.
5 M3 Topic B: Multiplication of Fractions

5 M3 Lesson 4: Multiply a whole number by a fraction.
5 M3 Lesson 5: Convert larger customary measurement units to smaller measurement units.
5 M3 Lesson 6: Convert smaller customary measurement units to larger measurement units.
5 M3 Lesson 10: Multiply fractions greater than 1 by fractions.
5 M3 Lesson 11: Multiply fractions.

5 M3 Lesson 1: Find fractions of a set with arrays.
5 M3 Lesson 2: Interpret fractions as division to find fractions of a set with tape diagrams and number lines.

5 M3 Lesson 4: Multiply a whole number by a fraction.
5 M3 Lesson 5: Convert larger customary measurement units to smaller measurement units.
5 M3 Lesson 6: Convert smaller customary measurement units to larger measurement units.
5 M3 Lesson 7: Multiply fractions less than 1 by unit fractions pictorially.
5 M3 Lesson 8: Multiply fractions less than 1 pictorially.
5 M3 Lesson 9: Multiply fractions by unit fractions by making simpler problems.
5 M3 Lesson 11: Multiply fractions.

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## Aligned Components of Eureka Math ${ }^{2}$

## 5.NF. 14

Model and solve real-world problems involving multiplication of fractions and mixed numbers using visual fraction models, drawings, or equations to represent the problem.

5 M3 Lesson 17: Solve word problems involving fractions with multiplication and division.
5 M3 Lesson 21: Solve multi-step word problems involving fractions.
5 M5 Lesson 14: Solve real-world problems involving areas of composite figures with mixed-number side lengths.

5 M5 Lesson 15: Solve multi-step word problems involving multiplication of mixed numbers.

This standard is fully addressed by the lessons aligned to its subsections.

5 M3 Lesson 12: Divide a nonzero whole number by a unit fraction to find the number of groups.
5 M3 Lesson 13: Divide a nonzero whole number by a unit fraction to find the size of the group.
5 M3 Lesson 14: Divide a unit fraction by a nonzero whole number. division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions and illustrate using visual fraction models, drawings, and equations to represent the problem.

5 M3 Lesson 15: Divide by whole numbers and unit fractions.
5 M3 Lesson 16: Reason about the size of quotients of whole numbers and unit fractions and quotients of unit fractions and whole numbers.

5 M3 Lesson 19: Create and solve one-step word problems involving fractions.

## 5.NF.15.b

Create a story context for a unit fraction divided by a whole number, and use a visual fraction model to show the quotient.

5 M3 Lesson 16: Reason about the size of quotients of whole numbers and unit fractions and quotients of unit fractions and whole numbers.

## Alabama Standards for Mathematical Content

## Aligned Components of Eureka Math ${ }^{2}$

## 5.NF.15.c

Create a story context for a whole number divided by a unit fraction, and use a visual fraction model to show the quotient.

5 M3 Lesson 16: Reason about the size of quotients of whole numbers and unit fractions and quotients of unit fractions and whole numbers.

## Data Analysis

## Represent and interpret data.

## Alabama Standards for Mathematical Content

## Aligned Components of Eureka Math ${ }^{2}$

## 5.DA. 16

Make a line plot to display a data set of measurements in fractions of a unit $\left(\frac{1}{2}, \frac{1}{4}, \frac{1}{8}\right)$.
5.DA.16.0

Add, subtract, multiply, and divide fractions to solve problems involving information presented in line plots.

This standard is fully addressed by the lessons aligned to its subsection.

5 M2 Topic D: Problem Solving and Line Plots with Fractional Measurements

## Measurement

## Convert like measurement units within a given measurement system.

## Alabama Standards for Mathematical Content

## Aligned Components of Eureka Math ${ }^{2}$

## 5.M. 17

Convert among different-sized standard measurement units within a given measurement system and use these conversions in solving multi-step, real-world problems.

5 M1 Lesson 5: Convert measurements and describe relationships between metric units.
5 M1 Lesson 6: Solve multi-step word problems by using metric measurement conversion.
5 M3 Lesson 5: Convert larger customary measurement units to smaller measurement units.
5 M3 Lesson 6: Convert smaller customary measurement units to larger measurement units.
5 M4 Lesson 26: Solve a real-world problem involving metric measurements.
5 M4 Lesson 27: Convert metric measurements involving decimals.
5 M4 Lesson 28: Convert customary measurements involving decimals.

## Measurement

Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.

## Alabama Standards for <br> Mathematical Content

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## 5.M. 18

Identify volume as an attribute of solid figures, and measure volumes by counting unit cubes, using cubic cm , cubic in, cubic ft , and improvised (non-standard) units.

[^0]
## Alabama Standards for Mathematical Content

## Aligned Components of Eureka Math ${ }^{2}$

## 5.M.18.a 5 M5 Lesson 16: Identify attributes and properties of right rectangular prisms <br> 5 M5 Lesson 16: Identify attributes and properties of right rectangular prisms.

Pack a solid figure without gaps or overlaps using $n$ unit cubes to demonstrate volume as $n$ cubic units.

5 M5 Lesson 17: Find the volume of right rectangular prisms by packing with unit cubes and counting.
5 M5 Lesson 19: Compose and decompose right rectangular prisms to find their volume by using layers.

5 M5 Lesson 20: Interpret volume as filling.
5 M5 Lesson 21: Relate volumes of solids and liquid volume.

This standard is fully addressed by the lessons aligned to its subsections.
Relate volume to the operations of multiplication and addition, and solve real-world and mathematical problems involving volume.

## 5.M.19.a

Use the associative property of multiplication to find the volume of a right rectangular prism and relate it to packing the prism with unit cubes. Show that the volume can be determined by multiplying the three edge lengths or by multiplying the height by the area of the base.

## 5 M5 Lesson 22: Find the volumes of right rectangular prisms by using the area of the base.

5 M5 Lesson 23: Find the volumes of right rectangular prisms by multiplying the edge lengths.

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## 5.M.19.b

Apply the formulas $V=l \times w \times h$ and $V=B \times h$ for rectangular prisms to find volumes of right rectangular prisms with whole-number edge lengths in the context of solving real-world and mathematical problems.

## 5.M.19.c

Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the two parts, applying this technique to solve real-world problems.

5 M5 Lesson 22: Find the volumes of right rectangular prisms by using the area of the base.
5 M5 Lesson 23: Find the volumes of right rectangular prisms by multiplying the edge lengths.
5 M5 Lesson 25: Find the volumes of solid figures composed of right rectangular prisms.
5 M5 Lesson 26: Solve word problems involving perimeter, area, and volume.
5 M5 Lesson 27: Apply concepts and formulas of volume to design a sculpture by using right rectangular prisms, part 1.
5 M5 Lesson 28: Apply concepts and formulas of volume to design a sculpture by using right rectangular prisms, part 2.

5 M5 Lesson 24: Solve word problems involving volumes of right rectangular prisms.
5 M5 Lesson 25: Find the volumes of solid figures composed of right rectangular prisms.
5 M5 Lesson 26: Solve word problems involving perimeter, area, and volume.
5 M5 Lesson 27: Apply concepts and formulas of volume to design a sculpture by using right rectangular prisms, part 1.

5 M5 Lesson 28: Apply concepts and formulas of volume to design a sculpture by using right rectangular prisms, part 2.

## Geometry

## Graph points on the coordinate plane to solve real-world and mathematical problems.

## Alabama Standards for Mathematical Content

## 5.G.20

Graph points in the first quadrant of the coordinate plane, and interpret coordinate values of points to represent real-world and mathematical problems.

## Aligned Components of Eureka Math ${ }^{2}$

5 M6 Topic A: Coordinate Systems
5 M6 Lesson 5: Identify properties of horizontal and vertical lines.
5 M6 Lesson 6: Use properties of horizontal and vertical lines to solve problems.
5 M6 Lesson 7: Generate number patterns to form ordered pairs.
5 M6 Lesson 8: Identify addition and subtraction relationships between corresponding terms
in number patterns.
5 M6 Lesson 9: Identify multiplication and division relationships between corresponding terms
in number patterns.
5 M6 Topic C: Solve Mathematical Problems in the Coordinate Plane
5 M6 Lesson 16: Interpret graphs that represent real-world situations.
5 M6 Lesson 17: Plot data in the coordinate plane and analyze relationships.
5 M6 Lesson 18: Interpret line graphs.
5 M6 Lesson 20: Reason about patterns in real-world situations.

## Geometry

## Classify two-dimensional figures into categories based on their properties.

Alabama Standards for
Mathematical Content

## Aligned Components of Eureka Math ${ }^{2}$

5.G.21
Classify triangles according to side
length (isosceles, equilateral, scalene)
and angle measure (acute, obtuse, right,
equiangular).
5.G.22

Classify quadrilaterals in a hierarchy based on properties.

## 5.G.23

Explain that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category.

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.

5 M5 Topic A: Drawing, Analysis, and Classification of Two-Dimensional Figures
5 M6 Lesson 12: Graph and classify quadrilaterals in the coordinate plane.

5 M5 Topic A: Drawing, Analysis, and Classification of Two-Dimensional Figures


[^0]:    5 M5 Topic C: Volume Concepts

