# Grade 4 | South Carolina College and Career Ready Standards for Mathematics Correlation to *Eureka Math²*™

When the original *Eureka Math*® curriculum was released, it quickly became the most widely used K–5 mathematics curriculum in the country. Now, the Great Minds® teacher–writers have created *Eureka Math²*™, a groundbreaking new curriculum that helps teachers deliver exponentially better math instruction while still providing students with the same deep understanding of and fluency in math. *Eureka Math²* carefully sequences mathematical content to maximize vertical alignment—a principle tested and proven to be essential in students' mastery of math—from kindergarten through high school.

While this innovative new curriculum includes all the trademark *Eureka Math* aha moments that have been delighting students and teachers for years, it also boasts these exciting new features:

## Teachability

*Eureka Math²* employs streamlined materials that allow teachers to plan more efficiently and focus their energy on delivering high-quality instruction that meets the individual needs of their students. Differentiation suggestions, slide decks, digital interactives, and multiple forms of assessment are just a few of the resources built right into the teacher materials.

## Accessibility

*Eureka Math²* incorporates Universal Design for Learning principles so all learners can access the mathematics and take on challenging math concepts. Student supports are built into the instructional design and are clearly identified in the *Teach* book. Further, the curriculum carries a focus on readability. By eliminating unnecessary words and using simple, clear sentences, the *Eureka Math²* teacher–writers have created one of the most readable mathematics curricula on the market. The curriculum's readability and accessibility help all students see themselves as mathematical thinkers and doers who are fully capable of owning their mathematics learning.

## Digital Engagement

The digital elements of *Eureka Math²* add to students' engagement with the math. The curriculum provides teachers with digital slides for each lesson. In addition, each grade level includes wordless videos that spark students' interest and curiosity. Students at all levels work through mathematical explorations that help lead to their own mathematical discoveries. Digital lessons and videos provide opportunities for students to wonder, explore, and make sense of mathematics, which contributes to the development of a strong, positive mathematical identity.

| Standards for Mathematical Practice | Aligned Components of *Eureka Math²* |
| --- | --- |
| **MP.1**<br><br>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**<br><br>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**<br><br>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**<br><br>Model with mathematics. | Lessons in every module engage students in mathematical practices. These are indicated in margin notes included with every lesson. |
| **MP.5**<br><br>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**<br><br>Attend to precision. | Lessons in every module engage students in mathematical practices. These are indicated in margin notes included with every lesson. |
| **MP.7**<br><br>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**<br><br>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. |

## Number Sense and Base Ten
**4.NSBT Number Sense and Base Ten**

| South Carolina College and Career Ready Standards for Mathematics | Aligned Components of *Eureka Math²* |
|---|---|
| **4.NSBT.1**<br><br>Understand that, in a multi-digit whole number, a digit represents ten times what the same digit 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.NSBT.2**<br><br>Recognize math periods and number patterns within each period to read and write in standard form large numbers through 999,999,999. | 4 M1 Lesson 5: Organize, count, and represent a collection of objects.<br><br>4 M1 Lesson 7: Write numbers to 1,000,000 in unit form and expanded form by using place value structure.<br><br>4 M1 Lesson 8: Write numbers to 1,000,000 in standard form and word form.<br><br>4 M1 Lesson 10: Name numbers by using place value understanding.<br><br>4 M1 Lesson 11: Find 1, 10, and 100 thousand more than and less than a given number.<br><br>*Supplemental material is needed to address numbers greater than 1,000,000.* |
| **4.NSBT.3**<br><br>Use rounding as one form of estimation and round whole numbers to any given place value. | 4 M1 Lesson 12: Round to the nearest thousand.<br><br>4 M1 Lesson 13: Round to the nearest ten thousand and hundred thousand.<br><br>4 M1 Lesson 14: Round multi-digit numbers to any place.<br><br>4 M1 Lesson 15: Apply estimation to real-world situations by using rounding. |
| **4.NSBT.4**<br><br>Fluently add and subtract multi-digit whole numbers using strategies to include a standard algorithm. | 4 M1 Topic D: Multi-Digit Whole Number Addition and Subtraction |

| South Carolina College and Career Ready Standards for Mathematics | Aligned Components of *Eureka Math²* |
|---|---|
| **4.NSBT.5**<br><br>Multiply up to a four-digit number by a one-digit number and multiply a two-digit number by a two-digit number using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using rectangular arrays, area models and/or equations. | 4 M2 Lesson 1: Multiply multiples of 10 by one-digit numbers by using the associative property of multiplication.<br>4 M2 Topic B: Multiplication of Tens and Ones by One-Digit Numbers<br>4 M3 Lesson 2: Multiply by multiples of 100 and 1,000.<br>4 M3 Lesson 3: Multiply a two-digit multiple of 10 by a two-digit multiple of 10.<br>4 M3 Topic C: Multiplication of up to Four-Digit Numbers by One-Digit Numbers<br>4 M3 Topic D: Multiplication of Two-Digit Numbers by Two-Digit Numbers |
| **4.NSBT.6**<br><br>Divide up to a four-digit dividend by a one-digit divisor using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. | 4 M2 Lesson 2: Divide two- and three-digit multiples of 10 by one-digit numbers.<br>4 M2 Topic C: Division of Tens and Ones by One-Digit Numbers<br>4 M3 Lesson 1: Divide multiples of 100 and 1,000.<br>4 M3 Topic B: Division of Thousands, Hundreds, Tens, and Ones<br>4 M3 Lesson 21: Find whole-number quotients and remainders.<br>4 M3 Lesson 22: Represent, estimate, and solve division word problems. |

# Number Sense and Operations—Fractions

**4.NSF Number Sense and Operations—Fractions**

| South Carolina College and Career Ready Standards for Mathematics | Aligned Components of *Eureka Math²* |
|---|---|
| **4.NSF.1**<br><br>Explain why a fraction (i.e., denominators 2, 3, 4, 5, 6, 8, 10, 12, 25, 100), $\frac{a}{b}$, is equivalent to a fraction, $\frac{n \times a}{n \times b}$, by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions. | 4 M4 Lesson 8: Generate equivalent fractions with smaller units for unit fractions.<br><br>4 M4 Lesson 9: Generate equivalent fractions with smaller units for non-unit fractions.<br><br>4 M4 Lesson 10: Generate equivalent fractions with larger units.<br><br>4 M4 Lesson 11: Represent equivalent fractions by using tape diagrams, number lines, and multiplication or division.<br><br>4 M4 Lesson 12: Generate equivalent fractions for fractions greater than 1 and generate equivalent mixed numbers. |
| **4.NSF.2**<br><br>Compare two given fractions (i.e., denominators 2, 3, 4, 5, 6, 8, 10, 12, 25, 100) by creating common denominators or numerators, or by comparing to a benchmark fraction such as $\frac{1}{2}$ and represent the comparison using the symbols >, =, or <. | 4 M4 Topic C: Compare Fractions |
| **4.NSF.3**<br><br>Develop an understanding of addition and subtraction of fractions (i.e., denominators 2, 3, 4, 5, 6, 8, 10, 12, 25, 100) based on unit fractions. | *This standard is fully addressed by the lessons aligned to its subsections.* |

| South Carolina College and Career Ready Standards for Mathematics | Aligned Components of *Eureka Math²* |
|---|---|
| **4.NSF.3.a**<br><br>Compose and decompose a fraction in more than one way, recording each composition and decomposition as an addition or subtraction equation; | 4 M4 Topic A: Fraction Decomposition and Equivalence<br><br>4 M4 Lesson 7: Rename fractions as a sum of equivalent smaller unit fractions.<br><br>4 M4 Topic D: Add and Subtract Fractions |
| **4.NSF.3.b**<br><br>Add and subtract mixed numbers with like denominators; | 4 M4 Lesson 23: Add a fraction to a mixed number.<br><br>4 M4 Lesson 24: Add a mixed number to a mixed number.<br><br>4 M4 Lesson 25: Subtract a fraction from a mixed number, part 1.<br><br>4 M4 Lesson 26: Subtract a fraction from a mixed number, part 2.<br><br>4 M4 Lesson 27: Subtract a mixed number from a mixed number. |
| **4.NSF.3.c**<br><br>Solve real-world problems involving addition and subtraction of fractions referring to the same whole and having like denominators. | 4 M4 Lesson 18: Estimate sums and differences of fractions by using benchmarks.<br><br>4 M4 Lesson 20: Subtract a fraction from a whole number.<br><br>4 M4 Lesson 21: Solve addition and subtraction word problems and estimate the reasonableness of the answers.<br><br>4 M4 Lesson 24: Add a mixed number to a mixed number.<br><br>4 M4 Lesson 27: Subtract a mixed number from a mixed number.<br><br>4 M4 Lesson 28: Represent and solve word problems with mixed numbers by using drawings and equations. |
| **4.NSF.4**<br><br>Apply and extend an understanding of multiplication by multiplying a whole number and a fraction (i.e., denominators 2, 3, 4, 5, 6, 8, 10, 12, 25, 100). | *This standard is fully addressed by the lessons aligned to its subsections.* |

| South Carolina College and Career Ready Standards for Mathematics | Aligned Components of *Eureka Math²* |
|---|---|
| **4.NSF.4.a**<br><br>Understand a fraction $\frac{a}{b}$ as a multiple of $\frac{1}{b}$; | 4 M4 Lesson 31: Decompose non-unit fractions into a product of a whole number and a unit fraction. |
| **4.NSF.4.b**<br><br>Understand a multiple of $\frac{a}{b}$ as a multiple of $\frac{1}{b}$, and use this understanding to multiply a fraction by a whole number; | 4 M4 Lesson 32: Multiply a fraction by a whole number by using the associative property.<br>4 M4 Lesson 33: Solve word problems involving multiplication of a fraction by a whole number.<br>4 M4 Lesson 34: Multiply a mixed number by a whole number by using the distributive property. |
| **4.NSF.4.c**<br><br>Solve real-world problems involving multiplication of a fraction by a whole number (i.e., use 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. |
| **4.NSF.5**<br><br>Express a fraction with a denominator of 10 as an equivalent fraction with a denominator of 100 and use this technique to add two fractions with respective denominators of 10 and 100. | 4 M5 Topic B: Tenths and Hundredths<br>4 M5 Topic D: Addition of Tenths and Hundredths |
| **4.NSF.6**<br><br>Write a fraction with a denominator of 10 or 100 using decimal notation, and read and write a decimal number as a fraction. | 4 M5 Topic A: Exploration of Tenths<br>4 M5 Topic B: Tenths and Hundredths |

| South Carolina College and Career Ready Standards for Mathematics | Aligned Components of *Eureka Math²* |
| --- | --- |
| **4.NSF.7**<br><br>Compare and order decimal numbers to hundredths, and justify using concrete and visual models. | 4 M5 Topic C: Comparison of Decimal Numbers |

## Algebraic Thinking and Operations
**4.ATO Algebraic Thinking and Operations**

| South Carolina College and Career Ready Standards for Mathematics | Aligned Components of *Eureka Math²* |
| --- | --- |
| **4.ATO.1**<br><br>Interpret a multiplication equation as a comparison (e.g., interpret $35 = 5 \times 7$ as a statement that $35$ is $5$ times as many as $7$ and $7$ times as many as $5$.) Represent verbal statements of multiplicative comparisons as multiplication equations. | 4 M1 Topic A: Multiplication as Multiplicative Comparison<br><br>4 M1 Lesson 6: Demonstrate that a digit represents 10 times the value of what it represents in the place to its right. |
| **4.ATO.2**<br><br>Solve real-world problems using multiplication (product unknown) and division (group size unknown, number of groups unknown). | 4 M1 Topic A: Multiplication as Multiplicative Comparison<br><br>4 M2 Lesson 9: Solve multiplication word problems.<br><br>4 M2 Lesson 20: Solve word problems involving additive and multiplicative comparisons. |

| South Carolina College and Career Ready Standards for Mathematics | Aligned Components of *Eureka Math²* |
|---|---|
| **4.ATO.3**<br><br>Solve multi-step, real-world problems using the four operations. Represent the problem using an equation with a variable as the unknown quantity. | 4 M1 Lesson 15: Apply estimation to real-world situations by using rounding.<br><br>4 M1 Lesson 16: Add by using the standard algorithm.<br><br>4 M1 Lesson 17: Solve multi-step addition word problems by using the standard algorithm.<br><br>4 M1 Lesson 21: Solve two-step word problems by using addition and subtraction.<br><br>4 M1 Lesson 22: Solve multi-step word problems by using addition and subtraction.<br><br>4 M3 Topic F: Remainders, Estimating, and Problem Solving |
| **4.ATO.4**<br><br>Recognize that a whole number is a multiple of each of its factors. Find all factors for a whole number in the range 1–100 and determine whether the whole number 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.<br><br>4 M2 Lesson 22: Use division and the associative property of multiplication to find factors.<br><br>4 M2 Lesson 23: Determine whether a whole number is a multiple of another number.<br><br>4 M2 Lesson 24: Recognize that a number is a multiple of each of its factors.<br><br>4 M2 Lesson 25: Explore properties of prime and composite numbers up to 100 by using multiples. |
| **4.ATO.5**<br><br>Generate a number or shape pattern that follows a given rule and determine a term that appears later in the sequence. | 4 M2 Lesson 26: Use relationships within a pattern to find an unknown term in the sequence. |

## Geometry
**4.G Geometry**

| South Carolina College and Career Ready Standards for Mathematics | Aligned Components of *Eureka Math²* |
|---|---|
| **4.G.1**<br><br>Draw points, lines, line segments, rays, angles (i.e., right, acute, obtuse), and parallel and perpendicular lines. Identify these in two-dimensional figures. | 4 M6 Topic A: Lines and Angles<br><br>4 M6 Lesson 10: Use 180° protractors to measure angles.<br><br>4 M6 Lesson 11: Estimate and measure angles with a 180° protractor.<br><br>4 M6 Lesson 12: Use a protractor to draw angles up to 180°.<br><br>4 M6 Lesson 18: Analyze and classify triangles based on side length, angle measures, or both.<br><br>4 M6 Lesson 19: Construct and classify triangles based on given attributes.<br><br>4 M6 Lesson 20: Sort polygons based on a given rule. |
| **4.G.2**<br><br>Classify quadrilaterals based on the presence or absence of parallel or perpendicular lines. | 4 M6 Lesson 20: Sort polygons based on a given rule. |
| **4.G.3**<br><br>Recognize 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.<br><br>4 M6 Lesson 19: Construct and classify triangles based on given attributes. |
| **4.G.4**<br><br>Recognize 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. Identify line-symmetric figures and draw lines of symmetry. | 4 M6 Lesson 17: Recognize, identify, and draw lines of symmetry. |

## Measurement and Data Analysis
**4.MDA Measurement and Data Analysis**

| South Carolina College and Career Ready Standards for Mathematics | Aligned Components of *Eureka Math²* |
|---|---|
| **4.MDA.1**<br><br>Convert measurements within a single system of measurement, customary (i.e., in., ft., yd., oz., lb., sec., min., hr.) or metric (i.e., cm, m, km, g, kg, mL, L) from a larger to a smaller unit. | 4 M1 Topic E: Metric Measurement Conversion Tables<br><br>4 M2 Lesson 17: Express measurements of length in terms of smaller units.<br><br>4 M3 Topic E: Problem Solving with Measurement |
| **4.MDA.2**<br><br>Solve real-world problems involving distance/length, intervals of time within 12 hours, liquid volume, mass, and money using the four operations. | 4 M2 Lesson 17: Express measurements of length in terms of smaller units.<br><br>4 M2 Lesson 20: Solve word problems involving additive and multiplicative comparisons.<br><br>4 M3 Topic E: Problem Solving with Measurement<br><br>4 M4 Lesson 18: Estimate sums and differences of fractions by using benchmarks.<br><br>4 M4 Lesson 20: Subtract a fraction from a whole number.<br><br>4 M4 Lesson 21: Solve addition and subtraction word problems and estimate the reasonableness of the answers.<br><br>4 M4 Lesson 24: Add a mixed number to a mixed number.<br><br>4 M4 Lesson 27: Subtract a mixed number from a mixed number.<br><br>4 M4 Lesson 28: Represent and solve word problems with mixed numbers by using drawings and equations.<br><br>4 M4 Lesson 33: Solve word problems involving multiplication of a fraction by a whole number.<br><br>4 M5 Lesson 14: Solve word problems with tenths and hundredths. |

| South Carolina College and Career Ready Standards for Mathematics | Aligned Components of *Eureka Math²* |
|---|---|
| **4.MDA.3**<br><br>Apply the area and perimeter formulas for rectangles. | 4 M2 Lesson 3: Investigate and use a formula for the area of a rectangle.<br>4 M2 Lesson 7: Multiply by using an area model and the distributive property.<br>4 M2 Lesson 18: Investigate and use formulas for the perimeter of a rectangle.<br>4 M2 Lesson 19: Apply area and perimeter formulas to solve problems.<br>4 M2 Lesson 20: Solve word problems involving additive and multiplicative comparisons. |
| **4.MDA.4**<br><br>Create a line plot to display a data set (i.e., generated by measuring length to the nearest quarter-inch and eighth-inch) and interpret the line plot. | 4 M4 Lesson 29: Solve problems by using data from a line plot.<br>4 M4 Lesson 30: Represent data on a line plot. |
| **4.MDA.5**<br><br>Understand the relationship of an angle measurement to a circle. | 4 M6 Lesson 7: Explore angles as fractional turns through a circle.<br>4 M6 Lesson 8: Use a circular protractor to recognize a $1°$ angle as a turn through $\frac{1}{360}$ of a circle.<br>4 M6 Lesson 9: Identify and measure angles as turns and recognize them in various contexts.<br>4 M6 Lesson 10: Use $180°$ protractors to measure angles.<br>4 M6 Lesson 11: Estimate and measure angles with a $180°$ protractor. |
| **4.MDA.6**<br><br>Measure and draw angles in whole number degrees using a protractor. | 4 M6 Lesson 8: Use a circular protractor to recognize a $1°$ angle as a turn through $\frac{1}{360}$ of a circle.<br>4 M6 Lesson 10: Use $180°$ protractors to measure angles.<br>4 M6 Lesson 11: Estimate and measure angles with a $180°$ protractor.<br>4 M6 Lesson 12: Use a protractor to draw angles up to $180°$. |

| South Carolina College and Career Ready Standards for Mathematics | Aligned Components of *Eureka Math²* |
|---|---|
| **4.MDA.7**<br><br>Solve addition and subtraction problems to find unknown angles in real-world and mathematical problems. | 4 M6 Topic C: Determine Unknown Angle Measures |
| **4.MDA.8**<br><br>Determine the value of a collection of coins and bills greater than $1.00. | 4 M5 Lesson 1: Organize, count, and represent a collection of money. |