
Grade 4 | North Carolina Standard Course of Study–Mathematics Correlation to *Eureka Math*²

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 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 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 Math*² 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 Math*² 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.

Standards for Mathematical Practice

Aligned Components of *Eureka Math*²

<p>MP.1 Make sense of problems and persevere in solving them.</p>	<p>Lessons in every module engage students in mathematical practices. These are indicated in margin notes included with every lesson.</p>
<p>MP.2 Reason abstractly and quantitatively.</p>	<p>Lessons in every module engage students in mathematical practices. These are indicated in margin notes included with every lesson.</p>
<p>MP.3 Construct viable arguments and critique the reasoning of others.</p>	<p>Lessons in every module engage students in mathematical practices. These are indicated in margin notes included with every lesson.</p>
<p>MP.4 Model with mathematics.</p>	<p>Lessons in every module engage students in mathematical practices. These are indicated in margin notes included with every lesson.</p>
<p>MP.5 Use appropriate tools strategically.</p>	<p>Lessons in every module engage students in mathematical practices. These are indicated in margin notes included with every lesson.</p>
<p>MP.6 Attend to precision.</p>	<p>Lessons in every module engage students in mathematical practices. These are indicated in margin notes included with every lesson.</p>
<p>MP.7 Look for and make use of structure.</p>	<p>Lessons in every module engage students in mathematical practices. These are indicated in margin notes included with every lesson.</p>
<p>MP.8 Look for and express regularity in repeated reasoning.</p>	<p>Lessons in every module engage students in mathematical practices. These are indicated in margin notes included with every lesson.</p>

Operations and Algebraic Thinking

Represent and solve problems involving multiplication and division.

North Carolina Standard Course of Study–Mathematics	Aligned Components of <i>Eureka Math</i> ²
<p>NC.4.OA.1</p> <p>Interpret a multiplication equation as a comparison. Multiply or divide to solve word problems involving multiplicative comparisons using models and equations with a symbol for the unknown number. Distinguish multiplicative comparison from additive comparison.</p>	<p>4 M1 Topic A: Multiplication as Multiplicative Comparison</p> <p>4 M1 Lesson 6: Demonstrate that a digit represents 10 times the value of what it represents in the place to its right.</p> <p>4 M2 Lesson 9: Solve multiplication word problems.</p> <p>4 M2 Lesson 20: Solve word problems involving additive and multiplicative comparisons.</p>

Operations and Algebraic Thinking

Use the four operations with whole numbers to solve problems.

North Carolina Standard Course of Study–Mathematics	Aligned Components of <i>Eureka Math</i> ²
<p>NC.4.OA.3</p> <p>Solve two-step word problems involving the four operations with whole numbers.</p> <ul style="list-style-type: none"> • Use estimation strategies to assess reasonableness of answers. • Interpret remainders in word problems. • Represent problems using equations with a letter standing for the unknown quantity. 	<p>4 M1 Lesson 15: Apply estimation to real-world situations by using rounding.</p> <p>4 M1 Lesson 16: Add by using the standard algorithm.</p> <p>4 M1 Lesson 17: Solve multi-step addition word problems by using the standard algorithm.</p> <p>4 M1 Lesson 21: Solve two-step word problems by using addition and subtraction.</p> <p>4 M1 Lesson 22: Solve multi-step word problems by using addition and subtraction.</p> <p>4 M3 Topic F: Remainders, Estimating, and Problem Solving</p>

Operations and Algebraic Thinking

Gain familiarity with factors and multiples.

North Carolina Standard Course of Study–Mathematics

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<p>NC.4.OA.4</p> <p>Find all factor pairs for whole numbers up to and including 50 to:</p> <ul style="list-style-type: none">• Recognize that a whole number is a multiple of each of its factors.• Determine whether a given whole number is a multiple of a given one-digit number.• Determine if the number is prime or composite.	<p>4 M2 Lesson 21: Find factor pairs for numbers up to 100 and use factors to identify numbers as prime or composite.</p> <p>4 M2 Lesson 22: Use division and the associative property of multiplication to find factors.</p> <p>4 M2 Lesson 23: Determine whether a whole number is a multiple of another number.</p> <p>4 M2 Lesson 24: Recognize that a number is a multiple of each of its factors.</p> <p>4 M2 Lesson 25: Explore properties of prime and composite numbers up to 100 by using multiples.</p>
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Operations and Algebraic Thinking

Generate and analyze patterns.

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<p>NC.4.OA.5</p> <p>Generate and analyze a number or shape pattern that follows a given rule.</p>	<p>4 M2 Lesson 26: Use relationships within a pattern to find an unknown term in the sequence.</p>
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Number and Operations in Base Ten

Generalize place value understanding for multi-digit whole numbers.

North Carolina Standard Course of Study–Mathematics	Aligned Components of <i>Eureka Math</i> ²
<p>NC.4.NBT.1</p> <p>Explain that in a multi-digit whole number, a digit in one place represents 10 times as much as it represents in the place to its right, up to 100,000.</p>	<p>4 M1 Lesson 6: Demonstrate that a digit represents 10 times the value of what it represents in the place to its right.</p>
<p>NC.4.NBT.2</p> <p>Read and write multi-digit whole numbers up to and including 100,000 using numerals, number names, and expanded form.</p>	<p>4 M1 Lesson 5: Organize, count, and represent a collection of objects.</p> <p>4 M1 Lesson 7: Write numbers to 1,000,000 in unit form and expanded form by using place value structure.</p> <p>4 M1 Lesson 8: Write numbers to 1,000,000 in standard form and word form.</p> <p>4 M1 Lesson 9: Compare numbers within 1,000,000 by using $>$, $=$, and $<$.</p> <p>4 M1 Lesson 10: Name numbers by using place value understanding.</p> <p>4 M1 Lesson 11: Find 1, 10, and 100 thousand more than and less than a given number.</p>
<p>NC.4.NBT.7</p> <p>Compare two multi-digit numbers up to and including 100,000 based on the values of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons.</p>	<p>4 M1 Lesson 5: Organize, count, and represent a collection of objects.</p> <p>4 M1 Lesson 7: Write numbers to 1,000,000 in unit form and expanded form by using place value structure.</p> <p>4 M1 Lesson 8: Write numbers to 1,000,000 in standard form and word form.</p> <p>4 M1 Lesson 9: Compare numbers within 1,000,000 by using $>$, $=$, and $<$.</p> <p>4 M1 Lesson 10: Name numbers by using place value understanding.</p> <p>4 M1 Lesson 11: Find 1, 10, and 100 thousand more than and less than a given number.</p>

Number and Operations in Base Ten

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

North Carolina Standard Course of Study–Mathematics	Aligned Components of <i>Eureka Math</i> ²
<p>NC.4.NBT.4</p> <p>Add and subtract multi-digit whole numbers up to and including 100,000 using the standard algorithm with place value understanding.</p>	<p>4 M1 Topic D: Multi-Digit Whole Number Addition and Subtraction</p>
<p>NC.4.NBT.5</p> <p>Multiply a whole number of up to three digits by a one-digit whole number, and multiply up to two two-digit numbers with place value understanding using area models, partial products, and the properties of operations. Use models to make connections and develop the algorithm.</p>	<p>4 M2 Lesson 1: Multiply multiples of 10 by one-digit numbers by using the associative property of multiplication.</p> <p>4 M2 Topic B: Multiplication of Tens and Ones by One-Digit Numbers</p> <p>4 M3 Lesson 2: Multiply by multiples of 100 and 1,000.</p> <p>4 M3 Lesson 3: Multiply a two-digit multiple of 10 by a two-digit multiple of 10.</p> <p>4 M3 Topic C: Multiplication of up to Four-Digit Numbers by One-Digit Numbers</p> <p>4 M3 Topic D: Multiplication of Two-Digit Numbers by Two-Digit Numbers</p>
<p>NC.4.NBT.6</p> <p>Find whole-number quotients and remainders with up to three-digit dividends and one-digit divisors with place value understanding using rectangular arrays, area models, repeated subtraction, partial quotients, properties of operations, and/or the relationship between multiplication and division.</p>	<p>4 M2 Lesson 2: Divide two- and three-digit multiples of 10 by one-digit numbers.</p> <p>4 M2 Topic C: Division of Tens and Ones by One-Digit Numbers</p> <p>4 M3 Lesson 1: Divide multiples of 100 and 1,000.</p> <p>4 M3 Topic B: Division of Thousands, Hundreds, Tens, and Ones</p> <p>4 M3 Lesson 21: Find whole-number quotients and remainders.</p> <p>4 M3 Lesson 22: Represent, estimate, and solve division word problems.</p>

Number and Operations—Fractions

Extend understanding of fractions.

North Carolina Standard Course of Study–Mathematics

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<p>NC.4.NF.1</p> <p>Explain why a fraction is equivalent to another fraction by using area and length fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size.</p>	<p>4 M4 Lesson 8: Generate equivalent fractions with smaller units for unit fractions.</p> <p>4 M4 Lesson 9: Generate equivalent fractions with smaller units for non-unit fractions.</p> <p>4 M4 Lesson 10: Generate equivalent fractions with larger units.</p> <p>4 M4 Lesson 11: Represent equivalent fractions by using tape diagrams, number lines, and multiplication or division.</p> <p>4 M4 Lesson 12: Generate equivalent fractions for fractions greater than 1 and generate equivalent mixed numbers.</p>
<p>NC.4.NF.2</p> <p>Compare two fractions with different numerators and different denominators, using the denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols $>$, $=$, or $<$, and justify the conclusions by:</p> <ul style="list-style-type: none"> Reasoning about their size and using area and length models. Using benchmark fractions 0, $\frac{1}{2}$, and a whole. Comparing common numerator or common denominators. 	<p>4 M4 Topic C: Compare Fractions</p>

Number and Operations—Fractions

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

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<p>NC.4.NF.3</p> <p>Understand and justify decompositions of fractions with denominators of 2, 3, 4, 5, 6, 8, 10, 12, and 100.</p> <ul style="list-style-type: none"> • Understand addition and subtraction of fractions as joining and separating parts referring to the same whole. • Decompose a fraction into a sum of unit fractions and a sum of fractions with the same denominator in more than one way using area models, length models, and equations. • Add and subtract fractions, including mixed numbers with like denominators, by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction. • Solve word problems involving addition and subtraction of fractions, including mixed numbers by writing equations from a visual representation of the problem. 	<p>4 M4 Topic A: Fraction Decomposition and Equivalence</p> <p>4 M4 Lesson 7: Rename fractions as a sum of equivalent smaller unit fractions.</p> <p>4 M4 Topic D: Add and Subtract Fractions</p> <p>4 M4 Lesson 23: Add a fraction to a mixed number.</p> <p>4 M4 Lesson 24: Add a mixed number to a mixed number.</p> <p>4 M4 Lesson 25: Subtract a fraction from a mixed number, part 1.</p> <p>4 M4 Lesson 26: Subtract a fraction from a mixed number, part 2.</p> <p>4 M4 Lesson 27: Subtract a mixed number from a mixed number.</p> <p>4 M4 Lesson 28: Represent and solve word problems with mixed numbers by using drawings and equations.</p>

Number and Operations—Fractions

Use unit fractions to understand operations of fractions.

North Carolina Standard Course of Study—Mathematics	Aligned Components of <i>Eureka Math</i> ²
<p>NC.4.NF.4</p> <p>Apply and extend previous understandings of multiplication to:</p> <ul style="list-style-type: none">• Model and explain how fractions can be represented by multiplying a whole number by a unit fraction, using this understanding to multiply a whole number by any fraction less than one.• Solve word problems involving multiplication of a fraction by a whole number.	<p>4 M4 Topic F: Repeated Addition of Fractions as Multiplication</p>

Number and Operations—Fractions

Understand decimal notation for fractions, and compare decimal fractions.

North Carolina Standard Course of Study—Mathematics	Aligned Components of <i>Eureka Math</i> ²
<p>NC.4.NF.6</p> <p>Use decimal notation to represent fractions.</p> <ul style="list-style-type: none">• Express, model and explain the equivalence between fractions with denominators of 10 and 100.• Use equivalent fractions to add two fractions with denominators of 10 or 100.• Represent tenths and hundredths with models, making connections between fractions and decimals.	<p>4 M5 Topic A: Exploration of Tenths 4 M5 Topic B: Tenths and Hundredths 4 M5 Topic D: Addition of Tenths and Hundredths</p>

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<p>NC.4.NF.7</p> <p>Compare two decimals to hundredths by reasoning about their size using area and length models, and recording the results of comparisons with the symbols $>$, $=$, or $<$. Recognize that comparisons are valid only when the two decimals refer to the same whole.</p>	<p>4 M5 Topic C: Comparison of Decimal Numbers</p>
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Measurement and Data

Solve problems involving measurement.

North Carolina Standard Course of Study–Mathematics

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<p>NC.4.MD.1</p> <p>Know relative sizes of measurement units. Solve problems involving metric measurement.</p> <ul style="list-style-type: none"> • Measure to solve problems involving metric units: centimeter, meter, gram, kilogram, Liter, milliliter. • Add, subtract, multiply, and divide to solve one-step word problems involving whole-number measurements of length, mass, and capacity that are given in metric units. 	<p>4 M1 Topic E: Metric Measurement Conversion Tables</p> <p>4 M2 Lesson 17: Express measurements of length in terms of smaller units.</p> <p>4 M2 Lesson 20: Solve word problems involving additive and multiplicative comparisons.</p> <p>4 M3 Topic E: Problem Solving with Measurement</p> <p>4 M4 Lesson 18: Estimate sums and differences of fractions by using benchmarks.</p> <p>4 M4 Lesson 20: Subtract a fraction from a whole number.</p> <p>4 M4 Lesson 21: Solve addition and subtraction word problems and estimate the reasonableness of the answers.</p> <p>4 M4 Lesson 24: Add a mixed number to a mixed number.</p> <p>4 M4 Lesson 27: Subtract a mixed number from a mixed number.</p> <p>4 M4 Lesson 28: Represent and solve word problems with mixed numbers by using drawings and equations.</p>
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<p style="text-align: center;">North Carolina Standard Course of Study–Mathematics</p>	<p style="text-align: center;">Aligned Components of <i>Eureka Math</i>²</p>
<p>NC.4.MD.1 <i>continued</i></p>	<p>4 M4 Lesson 33: Solve word problems involving multiplication of a fraction by a whole number.</p> <p>4 M5 Lesson 14: Solve word problems with tenths and hundredths.</p>
<p>NC.4.MD.2</p> <p>Use multiplicative reasoning to convert metric measurements from a larger unit to a smaller unit using place value understanding, two-column tables, and length models.</p>	<p>4 M1 Topic E: Metric Measurement Conversion Tables</p> <p>4 M2 Lesson 17: Express measurements of length in terms of smaller units.</p> <p>4 M3 Topic E: Problem Solving with Measurement</p>
<p>NC.4.MD.8</p> <p>Solve word problems involving addition and subtraction of time intervals that cross the hour.</p>	<p><i>Supplemental material is necessary to address this standard.</i></p>

Measurement and Data

Solve problems involving area and perimeter.

North Carolina Standard Course of Study–Mathematics

Aligned Components of *Eureka Math*²

<p>NC.4.MD.3</p> <p>Solve problems with area and perimeter.</p> <ul style="list-style-type: none"> • Find areas of rectilinear figures with known side lengths. • Solve problems involving a fixed area and varying perimeters and a fixed perimeter and varying areas. • Apply the area and perimeter formulas for rectangles in real world and mathematical problems. 	<p>3 M4 Lesson 10: Compose large rectangles and reason about their areas.</p> <p>3 M4 Lesson 11: Decompose to find the total area of a rectangle.</p> <p>3 M4 Lesson 14: Reason to find the area of composite shapes by using grids.</p> <p>3 M4 Lesson 15: Reason to find the area of composite shapes by using rectangles.</p> <p>3 M4 Lesson 17: Apply area concepts to a real-world context.</p> <p>3 M4 Lesson 19: Apply area concepts to complete a multi-part task.</p> <p>4 M2 Lesson 3: Investigate and use a formula for the area of a rectangle.</p> <p>4 M2 Lesson 7: Multiply by using an area model and the distributive property.</p> <p>4 M2 Lesson 18: Investigate and use formulas for the perimeter of a rectangle.</p> <p>4 M2 Lesson 19: Apply area and perimeter formulas to solve problems.</p> <p>4 M2 Lesson 20: Solve word problems involving additive and multiplicative comparisons.</p>

Measurement and Data

Represent and interpret data.

North Carolina Standard Course of Study–Mathematics	Aligned Components of <i>Eureka Math</i> ²
<p>NC.4.MD.4</p> <p>Represent and interpret data using whole numbers.</p> <ul style="list-style-type: none"> • Collect data by asking a question that yields numerical data. • Make a representation of data and interpret data in a frequency table, scaled bar graph, and/or line plot. • Determine whether a survey question will yield categorical or numerical data. 	<p><i>Supplemental material is necessary to address this standard.</i></p>

Measurement and Data

Understand concepts of angle and measure angles.

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<p>NC.4.MD.6</p> <p>Develop an understanding of angles and angle measurement.</p> <ul style="list-style-type: none"> • Understand angles as geometric shapes that are formed wherever two rays share a common endpoint, and are measured in degrees. • Measure and sketch angles in whole-number degrees using a protractor. • Solve addition and subtraction problems to find unknown angles on a diagram in real-world and mathematical problems. 	<p>4 M6 Topic B: Angle Measurement</p> <p>4 M6 Topic C: Determine Unknown Angle Measures</p>

Geometry

Classify shapes based on lines and angles in two-dimensional figures.

North Carolina Standard Course of Study–Mathematics	Aligned Components of <i>Eureka Math</i> ²
<p>NC.4.G.1</p> <p>Draw and identify points, lines, line segments, rays, angles, and perpendicular and parallel lines.</p>	<p>4 M6 Topic A: Lines and Angles</p> <p>4 M6 Lesson 10: Use 180° protractors to measure angles.</p> <p>4 M6 Lesson 11: Estimate and measure angles with a 180° protractor.</p> <p>4 M6 Lesson 12: Use a protractor to draw angles up to 180°.</p> <p>4 M6 Lesson 18: Analyze and classify triangles based on side length, angle measures, or both.</p> <p>4 M6 Lesson 19: Construct and classify triangles based on given attributes.</p> <p>4 M6 Lesson 20: Sort polygons based on a given rule.</p>
<p>NC.4.G.2</p> <p>Classify quadrilaterals and triangles based on angle measure, side lengths, and the presence or absence of parallel or perpendicular lines.</p>	<p>4 M6 Lesson 18: Analyze and classify triangles based on side length, angle measures, or both.</p> <p>4 M6 Lesson 19: Construct and classify triangles based on given attributes.</p> <p>4 M6 Lesson 20: Sort polygons based on a given rule.</p>
<p>NC.4.G.3</p> <p>Recognize symmetry in a two-dimensional figure, and identify and draw lines of symmetry.</p>	<p>4 M6 Lesson 17: Recognize, identify, and draw lines of symmetry.</p>