
Grade 4 | Tennessee Academic Standards for Mathematics Correlation to *Eureka Math*[®]

About *Eureka Math*

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

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

Aligned

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

Data

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

Full Suite of Resources

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

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

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

Standards for Mathematical Practice

- MP.1**
Make sense of problems and persevere in solving them.

- MP.2**
Reason abstractly and quantitatively.

- MP.3**
Construct viable arguments and critique the reasoning of others.

- MP.4**
Model with mathematics.

- MP.5**
Use appropriate tools strategically.

- MP.6**
Attend to precision.

- MP.7**
Look for and make use of structure.

- MP.8**
Look for and express regularity in repeated reasoning.

Aligned Components of *Eureka Math*

Lessons in every module engage students in mathematical practices. These are designated in the Module Overview and labeled in lessons. For example:

A STORY OF UNITS Lesson 3 **4•1**

Problem 2: Add to make 10 of a unit and bundling up to 1 million.

MP.2

T: What would happen if we combined 2 groups of 5 hundreds? With your partner, draw place value disks to solve. Use the largest unit possible to express your answer.

Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones
				●●●●●		
				●●●●●		
				●●●●●		

S: 2 groups of 5 hundreds equals 10 hundreds.
→ It would make 10 hundreds, which can be bundled to make 1 thousand.

T: Now, solve for 5 thousands plus 5 thousands. Bundle in order to express your answer using the largest unit possible.

Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones
			●●●●●			
			●●●●●			
			●●●●●			

S: 5 thousands plus 5 thousands equals 10 thousands. We can bundle 10 thousands to make 1 ten thousand.

T: Solve for 4 ten thousands plus 6 ten thousands. Express your answer using the largest unit possible.

S: 4 ten thousands plus 6 ten thousands equals 10 ten thousands. We can bundle 10 ten thousands to make 1 hundred thousand.

Operations and Algebraic Thinking

4.OA.A Use the four operations with whole numbers to solve problems.

Tennessee Academic Standards for Mathematics	Aligned Components of <i>Eureka Math</i>
<p>4.OA.A.1</p> <p>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 much as 5). Represent verbal/written statements of multiplicative comparisons as multiplication equations.</p>	<p>G4 M1 Lesson 1: Interpret a multiplication equation as a comparison.</p> <p>G4 M1 Lesson 2: Recognize a digit represents 10 times the value of what it represents in the place to its right.</p> <p>G4 M3 Lesson 2: Solve multiplicative comparison word problems by applying the area and perimeter formulas.</p> <p>G4 M3 Topic D: Multiplication Word Problems</p> <p>G4 M7 Lesson 4: Solve multiplicative comparison word problems using measurement conversion tables.</p>
<p>4.OA.A.2</p> <p>Multiply or divide to solve contextual problems involving multiplicative comparison, and distinguish multiplicative comparison from additive comparison.</p>	<p>G4 M3 Lesson 2: Solve multiplicative comparison word problems by applying the area and perimeter formulas.</p> <p>G4 M3 Lesson 3: Demonstrate understanding of area and perimeter formulas by solving multi-step real-world problems.</p> <p>G4 M3 Lesson 11: Connect the area model and the partial products method to the standard algorithm.</p> <p>G4 M3 Topic D: Multiplication Word Problems</p> <p>G4 M3 Lesson 26: Divide multiples of 10, 100, and 1,000 by single-digit numbers.</p> <p>G4 M7 Lesson 4: Solve multiplicative comparison word problems using measurement conversion tables.</p> <p>G4 M7 Lesson 5: Share and critique peer strategies.</p> <p>G4 M7 Lesson 8: Solve problems involving mixed units of weight.</p> <p>G4 M7 Lesson 10: Solve multi-step measurement word problems.</p>

**Tennessee Academic Standards
for Mathematics**

Aligned Components of *Eureka Math*

<p>4.OA.A.3</p> <p>Solve multi-step contextual problems (posed with whole numbers and having whole-number answers using the four operations) including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity.</p>	<p>G4 M1 Topic D: Multi-Digit Whole Number Addition</p> <p>G4 M1 Topic E: Multi-Digit Whole Number Subtraction</p> <p>G4 M1 Topic F: Addition and Subtraction Word Problems</p> <p>G4 M3 Topic D: Multiplication Word Problems</p> <p>G4 M3 Lesson 29: Represent numerically four-digit dividend division with divisors of 2, 3, 4, and 5, decomposing a remainder up to three times.</p> <p>G4 M3 Lesson 31: Interpret division word problems as either number of groups unknown or group size unknown.</p> <p>G4 M7 Lesson 6: Solve problems involving mixed units of capacity.</p> <p>G4 M7 Lesson 8: Solve problems involving mixed units of weight.</p> <p>G4 M7 Lesson 9: Solve problems involving mixed units of time.</p> <p>G4 M7 Lesson 10: Solve multi-step measurement word problems.</p> <p>G4 M7 Lesson 11: Solve multi-step measurement word problems.</p> <p>G4 M7 Lesson 14: Solve multi-step word problems involving converting mixed number measurements to a single unit.</p> <p>G4 M7 Lesson 15: Create and determine the area of composite figures.</p>
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Operations and Algebraic Thinking

4.OA.B Gain familiarity with factors and multiples.

Tennessee Academic Standards for Mathematics

Aligned Components of *Eureka Math*

<p>4.OA.B.4</p> <p>Find factor pairs for whole numbers in the range 1–100 using models. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number is prime or composite and whether the given number is a multiple of a given one-digit number.</p>	<p>G4 M3 Topic F: Reasoning with Divisibility</p> <p>G4 M7 Lesson 18: Practice and solidify Grade 4 vocabulary.</p>
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Operations and Algebraic Thinking

4.OA.C Generate and analyze patterns.

Tennessee Academic Standards for Mathematics

Aligned Components of *Eureka Math*

<p>4.OA.C.5</p> <p>Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself.</p>	<p>G4 M1 Lesson 6: Find 1, 10, and 100 thousand more and less than a given number.</p> <p>G4 M3 Lesson 23: Use division and the associative property to test for factors and observe patterns.</p> <p>G4 M3 Lesson 24: Determine if a whole number is a multiple of another number.</p> <p>G4 M3 Lesson 25: Explore properties of prime and composite numbers to 100 by using multiples.</p> <p>G4 M5 Topic H: Exploring a Fraction Pattern</p> <p>G6 M2 Lesson 16: Even and Odd Numbers</p>
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Number and Operations in Base Ten

4.NBT.A Generalize place value understanding for multi-digit whole numbers.

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<p>4.NBT.A.1</p> <p>Recognize that in a multi-digit whole number (less than or equal to 1,000,000), a digit in one place represents 10 times as much as it represents in the place to its right.</p>	<p>G4 M1 Lesson 1: Interpret a multiplication equation as a comparison.</p> <p>G4 M1 Lesson 2: Recognize a digit represents 10 times the value of what it represents in the place to its right.</p> <p>G4 M1 Lesson 3: Name numbers within 1 million by building understanding of the place value chart and placement of commas for naming base thousand units.</p> <p>G4 M3 Topic B: Multiplication by 10, 100, and 1,000</p>
<p>4.NBT.A.2</p> <p>Read and write multi-digit whole numbers (less than or equal to 1,000,000) using standard form, word form, and expanded notation (e.g., the expanded notation of 4,256 is written as $(4 \times 1000) + (2 \times 100) + (5 \times 10) + (6 \times 1)$). Compare two multi-digit numbers based on meanings of the digits in each place and use the symbols $>$, $=$, and $<$ to show the relationship.</p>	<p>G4 M1 Lesson 2: Recognize a digit represents 10 times the value of what it represents in the place to its right.</p> <p>G4 M1 Lesson 3: Name numbers within 1 million by building understanding of the place value chart and placement of commas for naming base thousand units.</p> <p>G4 M1 Lesson 4: Read and write multi-digit numbers using base ten numerals, number names, and expanded form.</p> <p>G4 M1 Lesson 5: Compare numbers based on meanings of the digits, using $>$, $<$, or $=$ to record the comparison.</p> <p>G4 M7 Lesson 17: Practice and solidify Grade 4 fluency.</p> <p><i>Supplemental material is necessary to address expanded notation.</i></p>
<p>4.NBT.A.3</p> <p>Round multi-digit whole numbers to any place (up to and including the hundred-thousand place) using understanding of place value and use a number line to explain how the number was rounded.</p>	<p>G4 M1 Topic C: Rounding Multi-Digit Whole Numbers</p>

Number and Operations in Base Ten

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

Tennessee Academic Standards for Mathematics	Aligned Components of <i>Eureka Math</i>
<p>4.NBT.B.4</p> <p>Fluently add and subtract within 1,000,000 using efficient strategies and algorithms.</p>	<p>G4 M1 Lesson 11: Use place value understanding to fluently add multi-digit whole numbers using the standard addition algorithm, and apply the algorithm to solve word problems using tape diagrams.</p> <p>G4 M1 Lesson 13: Use place value understanding to decompose to smaller units once using the standard subtraction algorithm, and apply the algorithm to solve word problems using tape diagrams.</p> <p>G4 M1 Lesson 14: Use place value understanding to decompose to smaller units up to three times using the standard subtraction algorithm, and apply the algorithm to solve word problems using tape diagrams.</p> <p>G4 M1 Lesson 15: Use place value understanding to fluently decompose to smaller units multiple times in any place using the standard subtraction algorithm, and apply the algorithm to solve word problems using tape diagrams.</p> <p>G4 M7 Lesson 17: Practice and solidify Grade 4 fluency.</p>
<p>4.NBT.B.5</p> <p>Multiply a whole number of up to four digits by a one-digit whole number and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.</p>	<p>G4 M3 Topic B: Multiplication by 10, 100, and 1,000</p> <p>G4 M3 Topic C: Multiplication of up to Four Digits by Single-Digit Numbers</p> <p>G4 M3 Topic D: Multiplication Word Problems</p> <p>G4 M3 Topic H: Multiplication of Two-Digit by Two-Digit Numbers</p> <p>G4 M7 Lesson 17: Practice and solidify Grade 4 fluency.</p>

**Tennessee Academic Standards
for Mathematics**

Aligned Components of *Eureka Math*

<p>4.NBT.B.6</p> <p>Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.</p>	<p>G4 M3 Topic E: Division of Tens and Ones with Successive Remainders</p> <p>G4 M3 Lesson 26: Divide multiples of 10, 100, and 1,000 by single-digit numbers.</p> <p>G4 M3 Lesson 27: Represent and solve division problems with up to a three-digit dividend numerically and with place value disks requiring decomposing a remainder in the hundreds place.</p> <p>G4 M3 Lesson 28: Represent and solve three-digit dividend division with divisors of 2, 3, 4, and 5 numerically.</p> <p>G4 M3 Lesson 29: Represent numerically four-digit dividend division with divisors of 2, 3, 4, and 5, decomposing a remainder up to three times.</p> <p>G4 M3 Lesson 30: Solve division problems with a zero in the dividend or with a zero in the quotient.</p> <p>G4 M3 Lesson 32: Interpret and find whole number quotients and remainders to solve one-step division word problems with larger divisors of 6, 7, 8, and 9.</p> <p>G4 M3 Lesson 33: Explain the connection of the area model of division to the long division algorithm for three- and four-digit dividends.</p> <p>G4 M7 Lesson 17: Practice and solidify Grade 4 fluency.</p>
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Number and Operations—Fractions

4.NF.A Extend understanding of fraction equivalence and comparison.

Tennessee Academic Standards for Mathematics	Aligned Components of <i>Eureka Math</i>
<p>4.NF.A.1</p> <p>Explain why a fraction $\frac{a}{b}$ is equivalent to a fraction $\frac{a \times n}{b \times n}$ or $\frac{a \div n}{b \div n}$ 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.</p>	<p>G4 M5 Lesson 5: Decompose unit fractions using area models to show equivalence.</p> <p>G4 M5 Lesson 6: Decompose fractions using area models to show equivalence.</p> <p>G4 M5 Topic B: Fraction Equivalence Using Multiplication and Division</p> <p>G4 M5 Lesson 20: Use visual models to add two fractions with related units using the denominators 2, 3, 4, 5, 6, 8, 10, and 12.</p> <p>G4 M5 Lesson 21: Use visual models to add two fractions with related units using the denominators 2, 3, 4, 5, 6, 8, 10, and 12.</p> <p>G4 M6 Lesson 5: Model the equivalence of tenths and hundredths using the area model and place value disks.</p> <p>G4 M6 Lesson 8: Use understanding of fraction equivalence to investigate decimal numbers on the place value chart expressed in different units.</p> <p>G5 M3 Lesson 1: Make equivalent fractions with the number line, the area model, and numbers.</p>
<p>4.NF.A.2</p> <p>Compare two fractions with different numerators and different denominators by creating common denominators or common numerators or by comparing to a benchmark such as 0 or $\frac{1}{2}$ or 1. Recognize that comparisons are valid only when the two fractions refer to the same whole. Use the symbols $>$, $=$, or $<$ to show the relationship and justify the conclusions.</p>	<p>G4 M5 Topic C: Fraction Comparison</p> <p>G4 M5 Lesson 26: Compare fractions greater than 1 by reasoning using benchmark fractions.</p> <p>G4 M5 Lesson 27: Compare fractions greater than 1 by creating common numerators or denominators.</p> <p>G4 M5 Lesson 28: Solve word problems with line plots.</p>

Number and Operations – Fractions

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

Tennessee Academic Standards for Mathematics

Aligned Components of *Eureka Math*

<p>4.NF.B.3</p> <p>Understand a fraction $\frac{a}{b}$ with $a > 1$ as a sum of fractions $\frac{1}{b}$.</p>	<p>G4 M5 Lesson 1: Decompose fractions as a sum of unit fractions using tape diagrams.</p> <p>G4 M5 Lesson 2: Decompose fractions as a sum of unit fractions using tape diagrams.</p> <p>G4 M5 Lesson 4: Decompose fractions into sums of smaller unit fractions using tape diagrams.</p> <p>G4 M5 Lesson 5: Decompose unit fractions using area models to show equivalence.</p> <p>G4 M5 Lesson 6: Decompose fractions using area models to show equivalence.</p> <p>G4 M5 Topic D: Fraction Addition and Subtraction</p> <p>G4 M5 Lesson 22: Add a fraction less than 1 to, or subtract a fraction less than 1 from, a whole number using decomposition and visual models.</p> <p>G4 M5 Lesson 24: Decompose and compose fractions greater than 1 to express them in various forms.</p> <p>G4 M5 Lesson 28: Solve word problems with line plots.</p> <p>G4 M5 Topic F: Addition and Subtraction of Fractions by Decomposition</p>
<p>4.NF.B.3a</p> <p>Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.</p>	<p>G4 M5 Lesson 16: Use visual models to add and subtract two fractions with the same units.</p> <p>G4 M5 Lesson 17: Use visual models to add and subtract two fractions with the same units, including subtracting from one whole.</p> <p>G4 M5 Lesson 18: Add and subtract more than two fractions.</p> <p>G4 M5 Lesson 20: Use visual models to add two fractions with related units using the denominators 2, 3, 4, 5, 6, 8, 10, and 12.</p> <p>G4 M5 Lesson 21: Use visual models to add two fractions with related units using the denominators 2, 3, 4, 5, 6, 8, 10, and 12.</p> <p>G4 M5 Lesson 22: Add a fraction less than 1 to, or subtract a fraction less than 1 from, a whole number using decomposition and visual models.</p>

**Tennessee Academic Standards
for Mathematics**

Aligned Components of *Eureka Math*

<p>4.NF.B.3b</p> <p>Decompose a fraction into a sum of fractions with the same denominator in more than one way (e.g., $\frac{3}{8} = \frac{1}{8} + \frac{1}{8} + \frac{1}{8}$; $\frac{3}{8} = \frac{1}{8} + \frac{2}{8}$; $2\frac{1}{8} = 1 + 1 + \frac{1}{8} = \frac{8}{8} + \frac{8}{8} + \frac{1}{8}$) recording each decomposition by an equation. Justify decompositions by using a visual fraction model.</p>	<p>G4 M5 Lesson 1: Decompose fractions as a sum of unit fractions using tape diagrams.</p> <p>G4 M5 Lesson 2: Decompose fractions as a sum of unit fractions using tape diagrams.</p> <p>G4 M5 Lesson 4: Decompose fractions into sums of smaller unit fractions using tape diagrams.</p> <p>G4 M5 Lesson 5: Decompose unit fractions using area models to show equivalence.</p> <p>G4 M5 Lesson 6: Decompose fractions using area models to show equivalence.</p> <p>G5 M3 Lesson 2: Make equivalent fractions with sums of fractions with like denominators.</p>
<p>4.NF.B.3c</p> <p>Add and subtract 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.</p>	<p>G4 M5 Lesson 24: Decompose and compose fractions greater than 1 to express them in various forms.</p> <p>G4 M5 Topic F: Addition and Subtraction of Fractions by Decomposition</p>
<p>4.NF.B.3d</p> <p>Solve contextual problems involving addition and subtraction of fractions referring to the same whole and having like denominators.</p>	<p>G4 M5 Lesson 19: Solve word problems involving addition and subtraction of fractions.</p> <p>G4 M5 Lesson 28: Solve word problems with line plots.</p>

**Tennessee Academic Standards
for Mathematics**

Aligned Components of *Eureka Math*

<p>4.NF.B.4</p> <p>Apply and extend understanding of multiplication as repeated addition to multiply a whole number by a fraction.</p>	<p>G4 M5 Lesson 3: Decompose non-unit fractions and represent them as a whole number times a unit fraction using tape diagrams.</p> <p>G4 M5 Lesson 4: Decompose fractions into sums of smaller unit fractions using tape diagrams.</p> <p>G4 M5 Lesson 5: Decompose unit fractions using area models to show equivalence.</p> <p>G4 M5 Lesson 6: Decompose fractions using area models to show equivalence.</p> <p>G4 M5 Lesson 23: Add and multiply unit fractions to build fractions greater than 1 using visual models.</p> <p>G4 M5 Lesson 25: Decompose and compose fractions greater than 1 to express them in various forms.</p> <p>G4 M5 Topic G: Repeated Addition of Fractions as Multiplication</p>
<p>4.NF.B.4a</p> <p>Understand a fraction $\frac{a}{b}$ as a multiple of $\frac{1}{b}$.</p>	<p>G4 M5 Lesson 3: Decompose non-unit fractions and represent them as a whole number times a unit fraction using tape diagrams.</p> <p>G4 M5 Lesson 4: Decompose fractions into sums of smaller unit fractions using tape diagrams.</p> <p>G4 M5 Lesson 5: Decompose unit fractions using area models to show equivalence.</p> <p>G4 M5 Lesson 6: Decompose fractions using area models to show equivalence.</p> <p>G4 M5 Lesson 35: Represent the multiplication of n times $\frac{a}{b}$ as $\frac{n \times a}{b}$ using the associative property and visual models.</p> <p>G5 M3 Lesson 2: Make equivalent fractions with sums of fractions with like denominators.</p>

**Tennessee Academic Standards
for Mathematics**

Aligned Components of *Eureka Math*

<p>4.NF.B.4b</p> <p>Understand a multiple of $\frac{a}{b}$ as a multiple of $\frac{1}{b}$ and use this understanding to multiply a whole number by a fraction.</p>	<p>G4 M5 Lesson 23: Add and multiply unit fractions to build fractions greater than 1 using visual models.</p> <p>G4 M5 Lesson 25: Decompose and compose fractions greater than 1 to express them in various forms.</p> <p>G4 M5 Lesson 35: Represent the multiplication of n times $\frac{a}{b}$ as $\frac{n \times a}{b}$ using the associative property and visual models.</p> <p>G4 M5 Lesson 36: Represent the multiplication of n times $\frac{a}{b}$ as $\frac{n \times a}{b}$ using the associative property and visual models.</p> <p>G4 M5 Lesson 37: Find the product of a whole number and a mixed number using the distributive property.</p> <p>G4 M5 Lesson 38: Find the product of a whole number and a mixed number using the distributive property.</p> <p>G5 M3 Lesson 2: Make equivalent fractions with sums of fractions with like denominators.</p>
<p>4.NF.B.4c</p> <p>Solve contextual problems involving multiplication of a whole number by a fraction (e.g., by using visual fraction models and equations to represent the problem).</p>	<p>G4 M5 Topic G: Repeated Addition of Fractions as Multiplication</p>

Number and Operations—Fractions

4.NF.C Understand decimal notation for fractions and compare decimal fractions.

Tennessee Academic Standards for Mathematics	Aligned Components of <i>Eureka Math</i>
<p>4.NF.C.5</p> <p>Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100.</p>	<p>G4 M6 Lesson 4: Use meters to model the decomposition of one whole into hundredths. Represent and count hundredths.</p> <p>G4 M6 Lesson 5: Model the equivalence of tenths and hundredths using the area model and place value disks.</p> <p>G4 M6 Lesson 8: Use understanding of fraction equivalence to investigate decimal numbers on the place value chart expressed in different units.</p> <p>G4 M6 Topic D: Addition with Tenths and Hundredths</p> <p>G4 M6 Lesson 15: Express money amounts given in various forms as decimal numbers.</p>
<p>4.NF.C.6</p> <p>Read and write decimal notation for fractions with denominators 10 or 100. Locate these decimals on a number line.</p>	<p>G4 M6 Topic A: Exploration of Tenths</p> <p>G4 M6 Lesson 4: Use meters to model the decomposition of one whole into hundredths. Represent and count hundredths.</p> <p>G4 M6 Lesson 5: Model the equivalence of tenths and hundredths using the area model and place value disks.</p> <p>G4 M6 Lesson 6: Use the area model and number line to represent mixed numbers with units of ones, tenths, and hundredths in fraction and decimal forms.</p> <p>G4 M6 Lesson 7: Model mixed numbers with units of hundreds, tens, ones, tenths, and hundredths in expanded form and on the place value chart.</p> <p>G4 M6 Lesson 12: Apply understanding of fraction equivalence to add tenths and hundredths.</p> <p>G4 M6 Lesson 13: Add decimal numbers by converting to fraction form.</p> <p>G4 M6 Lesson 15: Express money amounts given in various forms as decimal numbers.</p> <p>G4 M7 Lesson 17: Practice and solidify Grade 4 fluency.</p>

**Tennessee Academic Standards
for Mathematics**

Aligned Components of *Eureka Math*

<p>4.NF.C.7</p> <p>Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Use the symbols $>$, $=$, or $<$ to show the relationship and justify the conclusions.</p>	<p>G4 M6 Topic C: Decimal Comparison</p>
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Measurement and Data

4.MD.A Estimate and solve problems involving measurement.

**Tennessee Academic Standards
for Mathematics**

Aligned Components of *Eureka Math*

<p>4.MD.A.1</p> <p>Measure and estimate to determine relative sizes of measurement units within a single system of measurement involving length, liquid volume, and mass/weight of objects using customary and metric units.</p>	<p>G4 M2 Topic A: Metric Unit Conversions</p> <p>G4 M2 Lesson 4: Know and relate metric units to place value units in order to express measurements in different units.</p> <p>G4 M7 Lesson 1: Create conversion tables for length, weight, and capacity units using measurement tools, and use the tables to solve problems.</p> <p>G4 M7 Lesson 2: Create conversion tables for length, weight, and capacity units using measurement tools, and use the tables to solve problems.</p> <p>G4 M7 Lesson 3: Create conversion tables for units of time, and use the tables to solve problems.</p> <p>G4 M7 Lesson 5: Share and critique peer strategies.</p> <p>G4 M7 Lesson 6: Solve problems involving mixed units of capacity.</p> <p>G4 M7 Lesson 7: Solve problems involving mixed units of length.</p> <p>G4 M7 Lesson 8: Solve problems involving mixed units of weight.</p> <p>G4 M7 Lesson 9: Solve problems involving mixed units of time.</p>
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**Tennessee Academic Standards
for Mathematics**

Aligned Components of *Eureka Math*

<p>4.MD.A.1 <i>continued</i></p>	<p>G4 M7 Lesson 12: Use measurement tools to convert mixed number measurements to smaller units. G4 M7 Lesson 13: Use measurement tools to convert mixed number measurements to smaller units. G4 M7 Lesson 18: Practice and solidify Grade 4 vocabulary.</p>
<p>4.MD.A.2</p> <p>Solve one- or two-step real-world problems involving whole number measurements (including length, liquid volume, mass/weight, time, and money) with all four operations within a single system of measurement.</p>	<p>G4 M2 Topic A: Metric Unit Conversions G4 M2 Lesson 5: Use addition and subtraction to solve multi-step word problems involving length, mass, and capacity. G4 M5 Lesson 40: Solve word problems involving the multiplication of a whole number and a fraction including those involving line plots. G4 M6 Lesson 14: Solve word problems involving the addition of measurements in decimal form. G4 M6 Lesson 16: Solve word problems involving money. G4 M7 Topic B: Problem Solving with Measurement G4 M7 Lesson 14: Solve multi-step word problems involving converting mixed number measurements to a single unit.</p>
<p>4.MD.A.3</p> <p>Know and apply the area and perimeter formulas for rectangles in real-world and mathematical contexts.</p>	<p>G4 M3 Topic A: Multiplicative Comparison Word Problems G4 M7 Lesson 15: Create and determine the area of composite figures. G4 M7 Lesson 16: Create and determine the area of composite figures.</p>

Measurement and Data

4.MD.B Represent and interpret data.

Tennessee Academic Standards for Mathematics	Aligned Components of <i>Eureka Math</i>
<p>4.MD.B.4</p> <p>Make a line plot to display a data set of measurements in fractions of the same unit ($\frac{1}{2}$ or $\frac{1}{4}$ or $\frac{1}{8}$). Use operations on fractions for this grade to solve problems involving information presented in line plots.</p>	<p>G4 M5 Lesson 28: Solve word problems with line plots.</p> <p>G4 M5 Lesson 40: Solve word problems involving the multiplication of a whole number and a fraction including those involving line plots.</p> <p>G5 M4 Topic A: Line Plots of Fraction Measurements</p>

Measurement and Data

4.MD.C Geometric measurement: understand concepts of angle and measure angles.

Tennessee Academic Standards for Mathematics	Aligned Components of <i>Eureka Math</i>
<p>4.MD.C.5</p> <p>Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint; and understand concepts of angle measurement.</p>	<p>G4 M4 Lesson 5: Use a circular protractor to understand a 1-degree angle as $\frac{1}{360}$ of a turn. Explore benchmark angles using the protractor.</p> <p>G4 M4 Lesson 8: Identify and measure angles as turns and recognize them in various contexts.</p> <p>G4 M7 Lesson 18: Practice and solidify Grade 4 vocabulary.</p>
<p>4.MD.C.5a</p> <p>Understand that an angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle.</p>	<p>G4 M4 Lesson 6: Use varied protractors to distinguish angle measure from length measurement.</p>

**Tennessee Academic Standards
for Mathematics**

Aligned Components of *Eureka Math*

<p>4.MD.C.5b</p> <p>Understand that an angle that turns through $\frac{1}{360}$ of a circle is called a “one-degree angle,” and can be used to measure angles. An angle that turns through n one-degree angles is said to have an angle measure of n degrees and represents a fractional portion of the circle.</p>	<p>G4 M7 Lesson 18: Practice and solidify Grade 4 vocabulary.</p>
<p>4.MD.C.6</p> <p>Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.</p>	<p>G4 M4 Lesson 5: Use a circular protractor to understand a 1-degree angle as $\frac{1}{360}$ of a turn. Explore benchmark angles using the protractor.</p> <p>G4 M4 Lesson 6: Use varied protractors to distinguish angle measure from length measurement.</p> <p>G4 M4 Lesson 7: Measure and draw angles. Sketch given angle measures, and verify with a protractor.</p> <p>G4 M7 Lesson 16: Create and determine the area of composite figures.</p> <p>G4 M7 Lesson 17: Practice and solidify Grade 4 fluency.</p> <p>G4 M7 Lesson 18: Practice and solidify Grade 4 vocabulary.</p>

**Tennessee Academic Standards
for Mathematics**

Aligned Components of *Eureka Math*

<p>4.MD.C.7</p> <p>Recognize angle measure as additive. When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts. Solve addition and subtraction problems to find unknown angles on a diagram in real-world and mathematical problems. (e.g., by using an equation with a symbol for the unknown angle measure).</p>	<p>G4 M4 Topic C: Problem Solving with the Addition of Angle Measures</p> <p>G4 M7 Lesson 17: Practice and solidify Grade 4 fluency.</p>
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Geometry

4.G.A Draw and identify lines and angles and classify shapes by properties of their lines and angles.

**Tennessee Academic Standards
for Mathematics**

Aligned Components of *Eureka Math*

<p>4.G.A.1</p> <p>Draw points, lines, line segments, rays, angles (right, acute, obtuse, straight, reflex), and perpendicular and parallel lines. Identify these in two-dimensional figures.</p>	<p>G4 M4 Topic A: Lines and Angles</p> <p>G4 M4 Lesson 14: Define and construct triangles from given criteria. Explore symmetry in triangles.</p> <p>G4 M4 Lesson 15: Classify quadrilaterals based on parallel and perpendicular lines and the presence or absence of angles of a specified size.</p> <p>G4 M4 Lesson 16: Reason about attributes to construct quadrilaterals on square or triangular grid paper.</p> <p>G4 M7 Lesson 16: Create and determine the area of composite figures.</p> <p>G4 M7 Lesson 18: Practice and solidify Grade 4 vocabulary.</p> <p>G5 M6 Lesson 13: Construct parallel line segments on a rectangular grid.</p> <p>G5 M6 Lesson 15: Construct perpendicular line segments on a rectangular grid.</p>
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<p>4.G.A.2</p>	<p>Classify 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. Classify triangles based on the measure of the angles as right, acute, or obtuse.</p>	<p>G4 M4 Lesson 13: Analyze and classify triangles based on side length, angle measure, or both.</p> <p>G4 M4 Lesson 14: Define and construct triangles from given criteria. Explore symmetry in triangles.</p> <p>G4 M4 Lesson 15: Classify quadrilaterals based on parallel and perpendicular lines and the presence or absence of angles of a specified size.</p> <p>G4 M4 Lesson 16: Reason about attributes to construct quadrilaterals on square or triangular grid paper.</p> <p>G4 M7 Lesson 18: Practice and solidify Grade 4 vocabulary.</p>
<p>4.G.A.3</p>	<p>Recognize and draw lines of symmetry for two-dimensional figures.</p>	<p>G4 M4 Lesson 12: Recognize lines of symmetry for given two-dimensional figures. Identify line-symmetric figures, and draw lines of symmetry.</p> <p>G4 M4 Lesson 13: Analyze and classify triangles based on side length, angle measure, or both.</p> <p>G4 M4 Lesson 14: Define and construct triangles from given criteria. Explore symmetry in triangles.</p> <p>G4 M7 Lesson 18: Practice and solidify Grade 4 vocabulary.</p> <p>G5 M6 Lesson 17: Draw symmetric figures using distance and angle measure from the line of symmetry.</p>