
Grade 5 | Kentucky Mathematics Course Standards (2019) Correlation to *Eureka Math*²® (2027)

*Eureka Math*² is a research-proven math curriculum that empowers teachers to center instructional techniques on student success. Teachers can foster more “aha!” learning moments by providing the support needed for all learners to build a more confident math mindset.

This *Eureka Math*² edition builds on a strong foundation of effective instruction. It provides teachers with guidance on delivering rigorous instruction that honors student choice and encourages confident problem-solving.

*Eureka Math*² carefully sequences mathematical content to maximize vertical alignment from kindergarten through high school. This kind of sequencing has proven to be essential in students’ mastery of math.

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 into the teacher materials.

Accessibility

*Eureka Math*² incorporates Universal Design for Learning (UDL) principles so all learners can access the mathematics and take on challenging math concepts. UDL, Differentiation, and Multilingual Learner supports are built into the instructional design and are clearly identified in the *Teach* book.

The curriculum also carries a focus on readability. By eliminating unnecessary words and using 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.

Math Confidence

*Eureka Math*² fosters a classroom culture of learning by encouraging student-led discourse and cognitive engagement that results in confident learners. By leveraging consistent models, routines, and progressions, teachers can remove barriers and allow all students an avenue to success. Within the digital platform, each grade includes wordless videos and digital interactives that spark students’ curiosity and help them make conceptual connections. Using the *Learn* books, students wonder, explore, and make sense of mathematics, which helps them develop a strong, positive mathematical identity.

Standards for Mathematical Practice	Aligned Components of <i>Eureka Math</i> 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

Write and interpret numerical expressions.

Kentucky Mathematics Course Standards	Aligned Components of <i>Eureka Math</i> ²
<p>KY.5.OA.1</p> <p>Use parentheses, brackets or braces in numerical expressions and evaluate expressions that include symbols.</p>	<p>5 M1 Lesson 7: Multiply by using familiar methods.</p> <p>5 M1 Lesson 8: Multiply two- and three-digit numbers by two-digit numbers by using the distributive property.</p> <p>5 M1 Lesson 17: Write, interpret, and compare numerical expressions.</p> <p>5 M1 Lesson 18: Create and solve real-world problems for given numerical expressions.</p> <p>5 M1 Lesson 19: Solve multi-step word problems involving multiplication and division.</p> <p>5 M1 Lesson 20: Solve multi-step word problems involving the four operations.</p> <p>5 M1 Lesson 21: Express a composite number to 50 as a product of its prime factors.</p> <p>5 M3 Lesson 18: Compare and evaluate expressions with parentheses.</p> <p>5 M3 Lesson 22: Evaluate expressions involving nested grouping symbols.</p> <p>5 M4 Lesson 29: Interpret, evaluate, and compare numerical expressions involving decimals.</p> <p>5 M4 Lesson 30: Create and solve real-world problems for given numerical expressions involving decimals.</p>

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<p>KY.5.OA.2</p> <p>Write simple expressions with numbers and interpret numerical expressions without evaluating them.</p>	<p>5 M1 Lesson 17: Write, interpret, and compare numerical expressions.</p> <p>5 M1 Lesson 18: Create and solve real-world problems for given numerical expressions.</p> <p>5 M1 Lesson 19: Solve multi-step word problems involving multiplication and division.</p> <p>5 M1 Lesson 20: Solve multi-step word problems involving the four operations.</p> <p>5 M1 Lesson 21: Express a composite number to 50 as a product of its prime factors.</p> <p>5 M3 Lesson 12: Divide a nonzero whole number by a unit fraction to find the number of groups.</p> <p>5 M3 Lesson 16: Reason about the size of quotients of whole numbers and unit fractions and quotients of unit fractions and whole numbers.</p> <p>5 M3 Lesson 18: Compare and evaluate expressions with parentheses.</p> <p>5 M4 Lesson 29: Interpret, evaluate, and compare numerical expressions involving decimals.</p> <p>5 M4 Lesson 30: Create and solve real-world problems for given numerical expressions involving decimals.</p>
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Operations and Algebraic Thinking

Analyze patterns and relationships.

Kentucky Mathematics Course Standards	Aligned Components of <i>Eureka Math</i> ²
<p>KY.5.OA.3</p> <p>Generate numerical patterns for situations.</p>	<p><i>This standard is fully addressed by the lessons aligned to its subsections.</i></p>
<p>KY.5.OA.3.a</p> <p>Generate a rule for growing patterns, identifying the relationship between corresponding terms (x, y).</p>	<p>5 M6 Lesson 7: Generate number patterns to form ordered pairs.</p> <p>5 M6 Lesson 8: Identify addition and subtraction relationships between corresponding terms in number patterns.</p> <p>5 M6 Lesson 9: Identify multiplication and division relationships between corresponding terms in number patterns.</p> <p>5 M6 Lesson 11: Draw lines in the coordinate plane and identify points on the lines.</p> <p>5 M6 Lesson 20: Reason about patterns in real-world situations.</p>
<p>KY.5.OA.3.b</p> <p>Generate patterns using one or two given rules (x, y).</p>	<p>5 M6 Lesson 7: Generate number patterns to form ordered pairs.</p> <p>5 M6 Lesson 8: Identify addition and subtraction relationships between corresponding terms in number patterns.</p> <p>5 M6 Lesson 9: Identify multiplication and division relationships between corresponding terms in number patterns.</p> <p>5 M6 Lesson 11: Draw lines in the coordinate plane and identify points on the lines.</p> <p>5 M6 Lesson 20: Reason about patterns in real-world situations.</p>

Kentucky Mathematics Course Standards	Aligned Components of <i>Eureka Math</i> ²
<p>KY.5.OA.3.c</p> <p>Use tables, ordered pairs and graphs to represent the relationship between the quantities.</p>	<p>5 M6 Lesson 7: Generate number patterns to form ordered pairs.</p> <p>5 M6 Lesson 8: Identify addition and subtraction relationships between corresponding terms in number patterns.</p> <p>5 M6 Lesson 9: Identify multiplication and division relationships between corresponding terms in number patterns.</p> <p>5 M6 Lesson 11: Draw lines in the coordinate plane and identify points on the lines.</p> <p>5 M6 Lesson 20: Reason about patterns in real-world situations.</p>

Number and Operations in Base Ten

Understand the place value system.

Kentucky Mathematics Course Standards	Aligned Components of <i>Eureka Math</i> ²
<p>KY.5.NBT.1</p> <p>Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and $\frac{1}{10}$ of what it represents in the place to its left.</p>	<p>5 M1 Lesson 1: Relate adjacent place value units by using place value understanding.</p> <p>5 M1 Lesson 2: Multiply and divide by 10, 100, and 1,000 and identify patterns in the products and quotients.</p> <p>5 M4 Lesson 1: Model and relate decimal place value units to thousandths.</p> <p>5 M4 Lesson 2: Represent thousandths as a place value unit.</p> <p>5 M4 Lesson 3: Represent decimal numbers to the thousandths place in different forms.</p> <p>5 M4 Lesson 4: Relate the values of digits in a decimal number by using place value understanding.</p>

Kentucky Mathematics Course Standards	Aligned Components of <i>Eureka Math</i>²
<p>KY.5.NBT.2</p> <p>Multiply and divide by powers of 10.</p> <ul style="list-style-type: none"> • Explain patterns in the number of zeros of the product when multiplying a number by powers of 10. • Explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. • Use whole-number exponents to denote powers of 10. 	<p>5 M1 Lesson 2: Multiply and divide by 10, 100, and 1,000 and identify patterns in the products and quotients.</p> <p>5 M1 Lesson 3: Use exponents to multiply and divide by powers of 10.</p> <p>5 M1 Lesson 4: Estimate products and quotients by using powers of 10 and their multiples.</p> <p>5 M4 Lesson 5: Multiply and divide decimal numbers by powers of 10.</p>
<p>KY.5.NBT.3</p> <p>Read, write and compare decimals to thousandths.</p>	<p><i>This standard is fully addressed by the lessons aligned to its subsections.</i></p>
<p>KY.5.NBT.3.a</p> <p>Read and write decimals to thousandths using base-ten numerals, number names and expanded form.</p>	<p>5 M4 Lesson 1: Model and relate decimal place value units to thousandths.</p> <p>5 M4 Lesson 2: Represent thousandths as a place value unit.</p> <p>5 M4 Lesson 3: Represent decimal numbers to the thousandths place in different forms.</p>
<p>KY.5.NBT.3.b</p> <p>Compare two decimals to thousandths based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons.</p>	<p>5 M4 Lesson 6: Compare decimal numbers to the thousandths place.</p>

Kentucky Mathematics Course Standards	Aligned Components of <i>Eureka Math</i> ²
<p>KY.5.NBT.4</p> <p>Use place value understanding to round decimals to any place.</p>	<p>5 M4 Lesson 7: Round decimal numbers to the nearest one, tenth, or hundredth.</p> <p>5 M4 Lesson 8: Round decimal numbers to any place value unit.</p>

Number and Operations in Base Ten

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

Kentucky Mathematics Course Standards	Aligned Components of <i>Eureka Math</i> ²
<p>KY.5.NBT.5</p> <p>Fluently multiply multi-digit whole numbers (not to exceed four-digit by two-digit multiplication) using an algorithm.</p>	<p>5 M1 Lesson 7: Multiply by using familiar methods.</p> <p>5 M1 Lesson 8: Multiply two- and three-digit numbers by two-digit numbers by using the distributive property.</p> <p>5 M1 Lesson 9: Multiply two- and three-digit numbers by two-digit numbers by using the standard algorithm.</p> <p>5 M1 Lesson 10: Multiply three- and four-digit numbers by three-digit numbers by using the standard algorithm.</p> <p>5 M1 Lesson 11: Multiply two multi-digit numbers by using the standard algorithm.</p>
<p>KY.5.NBT.6</p> <p>Divide up to four-digit dividends by two-digit divisors.</p>	<p><i>This standard is fully addressed by the lessons aligned to its subsections.</i></p>

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<p>KY.5.NBT.6.a</p> <p>Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors using ...</p> <ul style="list-style-type: none"> • strategies based on place value • the properties of operations • the relationship between multiplication and division 	<p>5 M1 Lesson 12: Divide two- and three-digit numbers by multiples of 10.</p> <p>5 M1 Lesson 13: Divide two-digit numbers by two-digit numbers in problems that result in one-digit quotients.</p> <p>5 M1 Lesson 14: Divide three-digit numbers by two-digit numbers in problems that result in one-digit quotients.</p> <p>5 M1 Lesson 15: Divide three-digit numbers by two-digit numbers in problems that result in two-digit quotients.</p> <p>5 M1 Lesson 16: Divide four-digit numbers by two-digit numbers.</p>
<p>KY.5.NBT.6.b</p> <p>Illustrate and explain the calculation by using equations, rectangular arrays and/or area models.</p>	<p>5 M1 Lesson 12: Divide two- and three-digit numbers by multiples of 10.</p> <p>5 M1 Lesson 13: Divide two-digit numbers by two-digit numbers in problems that result in one-digit quotients.</p> <p>5 M1 Lesson 14: Divide three-digit numbers by two-digit numbers in problems that result in one-digit quotients.</p> <p>5 M1 Lesson 15: Divide three-digit numbers by two-digit numbers in problems that result in two-digit quotients.</p> <p>5 M1 Lesson 16: Divide four-digit numbers by two-digit numbers.</p>
<p>KY.5.NBT.7</p> <p>Operations with decimals to hundredths.</p>	<p><i>This standard is fully addressed by the lessons aligned to its subsections.</i></p>

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<p>KY.5.NBT.7.a</p> <p>Add, subtract, multiply and divide decimals to hundredths using ...</p> <ul style="list-style-type: none"> • concrete models or drawings • strategies based on place value • properties of operations • the relationship between addition and subtraction 	<p>5 M4 Lesson 9: Add decimal numbers by using different methods.</p> <p>5 M4 Lesson 10: Add decimal numbers by using place value understanding.</p> <p>5 M4 Lesson 11: Subtract decimal numbers by using different methods.</p> <p>5 M4 Lesson 12: Subtract decimal numbers by using place value understanding.</p> <p>5 M4 Lesson 13: Solve word problems involving addition and subtraction of decimal numbers and fractions.</p> <p>5 M4 Lesson 14: Multiply decimal numbers to hundredths by one-digit whole numbers by using different models.</p> <p>5 M4 Lesson 15: Multiply decimal numbers to hundredths by one-digit whole numbers and multiples of 10, 100, or 1,000 by using different written methods.</p> <p>5 M4 Lesson 16: Multiply decimal numbers to hundredths by two-digit whole numbers by using area models and vertical form.</p> <p>5 M4 Lesson 17: Multiply decimal numbers to hundredths by two-digit whole numbers by using different methods.</p> <p>5 M4 Lesson 18: Relate decimal number multiplication to fraction multiplication.</p> <p>5 M4 Lesson 19: Multiply a decimal number by a decimal number.</p> <p>5 M4 Lesson 20: Divide decimal numbers to hundredths by one-digit whole numbers and multiples of 10, 100, or 1,000 by using unit form and place value understanding.</p> <p>5 M4 Lesson 21: Divide decimal numbers to hundredths by one-digit whole numbers and multiples of 10, 100, or 1,000 by using place value understanding and vertical form.</p> <p>5 M4 Lesson 22: Divide decimal numbers to hundredths by two-digit whole numbers.</p> <p>5 M4 Lesson 23: Relate division by 0.1 and 0.01 to division by a unit fraction.</p> <p>5 M4 Lesson 24: Divide decimal numbers by decimal numbers, resulting in whole-number quotients.</p> <p>5 M4 Lesson 25: Divide decimal numbers by decimal numbers, resulting in decimal-number quotients.</p>
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<p>KY.5.NBT.7.b</p> <p>Relate the strategy to a written method and explain the reasoning used.</p>	<p>5 M4 Lesson 9: Add decimal numbers by using different methods.</p> <p>5 M4 Lesson 10: Add decimal numbers by using place value understanding.</p> <p>5 M4 Lesson 11: Subtract decimal numbers by using different methods.</p> <p>5 M4 Lesson 12: Subtract decimal numbers by using place value understanding.</p> <p>5 M4 Lesson 13: Solve word problems involving addition and subtraction of decimal numbers and fractions.</p> <p>5 M4 Lesson 14: Multiply decimal numbers to hundredths by one-digit whole numbers by using different models.</p> <p>5 M4 Lesson 15: Multiply decimal numbers to hundredths by one-digit whole numbers and multiples of 10, 100, or 1,000 by using different written methods.</p> <p>5 M4 Lesson 16: Multiply decimal numbers to hundredths by two-digit whole numbers by using area models and vertical form.</p> <p>5 M4 Lesson 17: Multiply decimal numbers to hundredths by two-digit whole numbers by using different methods.</p> <p>5 M4 Lesson 18: Relate decimal number multiplication to fraction multiplication.</p> <p>5 M4 Lesson 19: Multiply a decimal number by a decimal number.</p> <p>5 M4 Lesson 20: Divide decimal numbers to hundredths by one-digit whole numbers and multiples of 10, 100, or 1,000 by using unit form and place value understanding.</p> <p>5 M4 Lesson 21: Divide decimal numbers to hundredths by one-digit whole numbers and multiples of 10, 100, or 1,000 by using place value understanding and vertical form.</p> <p>5 M4 Lesson 22: Divide decimal numbers to hundredths by two-digit whole numbers.</p> <p>5 M4 Lesson 23: Relate division by 0.1 and 0.01 to division by a unit fraction.</p> <p>5 M4 Lesson 24: Divide decimal numbers by decimal numbers, resulting in whole-number quotients.</p> <p>5 M4 Lesson 25: Divide decimal numbers by decimal numbers, resulting in decimal-number quotients.</p>
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Number and Operations—Fractions

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

Kentucky Mathematics Course Standards	Aligned Components of <i>Eureka Math</i> ²
<p>KY.5.NF.1</p> <p>Efficiently add and subtract fractions with unlike denominators (including mixed numbers) by ...</p> <ul style="list-style-type: none"> • using reasoning strategies, such as counting up on a number line or creating visual fraction models • finding common denominators 	<p>5 M2 Lesson 5: Add and subtract fractions with related units by using pictorial models.</p> <p>5 M2 Lesson 6: Add and subtract fractions with related units by using area models to rename fractions.</p> <p>5 M2 Lesson 7: Add and subtract fractions with related units by finding equivalent fractions numerically.</p> <p>5 M2 Lesson 8: Add and subtract fractions with unrelated units by finding equivalent fractions pictorially.</p> <p>5 M2 Lesson 9: Add and subtract fractions with unrelated units by finding equivalent fractions numerically.</p> <p>5 M2 Lesson 10: Add whole numbers and mixed numbers and add mixed numbers with related units.</p> <p>5 M2 Lesson 11: Add mixed numbers with unrelated units.</p> <p>5 M2 Lesson 12: Subtract whole numbers from mixed numbers and mixed numbers from whole numbers.</p> <p>5 M2 Lesson 13: Subtract mixed numbers from mixed numbers with related units.</p> <p>5 M2 Lesson 14: Subtract mixed numbers from mixed numbers with unrelated units.</p>
<p>KY.5.NF.2</p> <p>Solve word problems involving addition and subtraction of fractions.</p>	<p><i>This standard is fully addressed by the lessons aligned to its subsections.</i></p>

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<p>KY.5.NF.2.a</p> <p>Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators.</p>	<p>5 M2 Lesson 10: Add whole numbers and mixed numbers and add mixed numbers with related units.</p> <p>5 M2 Lesson 11: Add mixed numbers with unrelated units.</p> <p>5 M2 Lesson 12: Subtract whole numbers from mixed numbers and mixed numbers from whole numbers.</p> <p>5 M2 Lesson 13: Subtract mixed numbers from mixed numbers with related units.</p> <p>5 M2 Lesson 14: Subtract mixed numbers from mixed numbers with unrelated units.</p> <p>5 M2 Lesson 17: Solve problems by equally redistributing a total amount.</p>
<p>KY.5.NF.2.b</p> <p>Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers.</p>	<p>5 M2 Lesson 10: Add whole numbers and mixed numbers and add mixed numbers with related units.</p> <p>5 M2 Lesson 11: Add mixed numbers with unrelated units.</p> <p>5 M2 Lesson 12: Subtract whole numbers from mixed numbers and mixed numbers from whole numbers.</p> <p>5 M2 Lesson 13: Subtract mixed numbers from mixed numbers with related units.</p> <p>5 M2 Lesson 14: Subtract mixed numbers from mixed numbers with unrelated units.</p> <p>5 M2 Lesson 17: Solve problems by equally redistributing a total amount.</p>

Number and Operations—Fractions

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

Kentucky Mathematics Course Standards	Aligned Components of <i>Eureka Math</i> ²
<p>KY.5.NF.3</p> <p>Interpret a fraction as division of the numerator by the denominator ($\frac{a}{b} = a \div b$). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers by using visual fraction models or equations to represent the problem.</p>	<p>5 M2 Lesson 1: Interpret a fraction as division.</p> <p>5 M2 Lesson 2: Interpret a fraction as division by writing remainders as fractions.</p> <p>5 M2 Lesson 3: Represent fractions as division by using models.</p> <p>5 M2 Lesson 4: Solve word problems involving division and fractions.</p>
<p>KY.5.NF.4</p> <p>Apply and extend previous understanding of multiplication to multiply a fraction or whole number by a fraction.</p>	<p>5 M3 Lesson 3: Multiply a whole number by a fraction less than 1.</p> <p>5 M3 Lesson 9: Multiply fractions by unit fractions by making simpler problems.</p> <p>5 M3 Lesson 10: Multiply fractions greater than 1 by fractions.</p> <p>5 M5 Lesson 12: Multiply mixed numbers.</p>
<p>KY.5.NF.4.a</p> <p>Interpret the product $(\frac{a}{b}) \times q$ as a parts of a partition of q into b equal parts; equivalently, as the result of a sequence of operations $a \times q \div b$.</p>	<p>5 M3 Lesson 1: Find fractions of a set with arrays.</p> <p>5 M3 Lesson 2: Interpret fractions as division to find fractions of a set with tape diagrams and number lines.</p> <p>5 M3 Lesson 3: Multiply a whole number by a fraction less than 1.</p> <p>5 M3 Lesson 4: Multiply a whole number by a fraction.</p> <p>5 M3 Lesson 5: Convert larger customary measurement units to smaller measurement units.</p> <p>5 M3 Lesson 6: Convert smaller customary measurement units to larger measurement units.</p> <p>5 M3 Lesson 7: Multiply fractions less than 1 by unit fractions pictorially.</p> <p>5 M3 Lesson 8: Multiply fractions less than 1 pictorially.</p> <p>5 M3 Lesson 11: Multiply fractions.</p>

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<p>KY.5.NF.4.b</p> <p>Find the area of a rectangle with fractional side lengths by tiling it with squares of the appropriate unit fraction side lengths and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles and represent fraction products as rectangular areas.</p>	<p>5 M5 Lesson 8: Find areas of square tiles with fraction side lengths by relating the tile to a unit square.</p> <p>5 M5 Lesson 9: Organize, count, and represent a collection of square tiles.</p> <p>5 M5 Lesson 10: Find the area of a rectangle with fraction side lengths by relating the rectangle to a unit square.</p> <p>5 M5 Lesson 11: Find areas of rectangles with fraction side lengths by using multiplication.</p> <p>5 M5 Lesson 12: Multiply mixed numbers.</p> <p>5 M5 Lesson 13: Solve mathematical problems involving areas of composite figures with mixed-number side lengths.</p> <p>5 M5 Lesson 14: Solve real-world problems involving areas of composite figures with mixed-number side lengths.</p> <p>5 M6 Lesson 15: Use the coordinate plane to reason about perimeters and areas of rectangles.</p>
<p>KY.5.NF.5</p> <p>Interpret multiplication as scaling (resizing), by:</p>	<p><i>This standard is fully addressed by the lessons aligned to its subsections.</i></p>
<p>KY.5.NF.5.a</p> <p>Comparing 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.</p>	<p>5 M3 Lesson 3: Multiply a whole number by a fraction less than 1.</p> <p>5 M3 Lesson 4: Multiply a whole number by a fraction.</p> <p>5 M3 Lesson 7: Multiply fractions less than 1 by unit fractions pictorially.</p> <p>5 M3 Lesson 8: Multiply fractions less than 1 pictorially.</p> <p>5 M3 Lesson 9: Multiply fractions by unit fractions by making simpler problems.</p> <p>5 M3 Lesson 10: Multiply fractions greater than 1 by fractions.</p> <p>5 M3 Lesson 11: Multiply fractions.</p>

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<p>KY.5.NF.5.b</p> <p>Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case); explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number; and relating the principle of fraction equivalence $\frac{a}{b} = \frac{n \times a}{n \times b}$ to the effect of multiplying $\frac{a}{b}$ by 1.</p>	<p>5 M3 Lesson 1: Find fractions of a set with arrays.</p> <p>5 M3 Lesson 2: Interpret fractions as division to find fractions of a set with tape diagrams and number lines.</p> <p>5 M3 Lesson 4: Multiply a whole number by a fraction.</p> <p>5 M3 Lesson 5: Convert larger customary measurement units to smaller measurement units.</p> <p>5 M3 Lesson 6: Convert smaller customary measurement units to larger measurement units.</p> <p>5 M3 Lesson 7: Multiply fractions less than 1 by unit fractions pictorially.</p> <p>5 M3 Lesson 8: Multiply fractions less than 1 pictorially.</p> <p>5 M3 Lesson 9: Multiply fractions by unit fractions by making simpler problems.</p> <p>5 M3 Lesson 10: Multiply fractions greater than 1 by fractions.</p> <p>5 M3 Lesson 11: Multiply fractions.</p>
<p>KY.5.NF.6</p> <p>Solve real-world problems involving multiplication of fractions and mixed numbers.</p>	<p>5 M3 Lesson 17: Solve word problems involving fractions with multiplication and division.</p> <p>5 M3 Lesson 21: Solve multi-step word problems involving fractions.</p> <p>5 M5 Lesson 14: Solve real-world problems involving areas of composite figures with mixed-number side lengths.</p> <p>5 M5 Lesson 15: Solve multi-step word problems involving multiplication of mixed numbers.</p>
<p>KY.5.NF.7</p> <p>Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions.</p>	<p><i>This standard is fully addressed by the lessons aligned to its subsections.</i></p>

Kentucky Mathematics Course Standards

Aligned Components of *Eureka Math*²

<p>KY.5.NF.7.a</p> <p>Interpret division of a unit fraction by a non-zero whole number and compute such quotients.</p>	<p>5 M3 Lesson 14: Divide a unit fraction by a nonzero whole number.</p> <p>5 M3 Lesson 15: Divide by whole numbers and unit fractions.</p> <p>5 M3 Lesson 16: Reason about the size of quotients of whole numbers and unit fractions and quotients of unit fractions and whole numbers.</p> <p>5 M3 Lesson 19: Create and solve one-step word problems involving fractions.</p>
<p>KY.5.NF.7.b</p> <p>Interpret division of a whole number by a unit fraction and compute such quotients.</p>	<p>5 M3 Lesson 12: Divide a nonzero whole number by a unit fraction to find the number of groups.</p> <p>5 M3 Lesson 13: Divide a nonzero whole number by a unit fraction to find the size of the group.</p> <p>5 M3 Lesson 15: Divide by whole numbers and unit fractions.</p> <p>5 M3 Lesson 16: Reason about the size of quotients of whole numbers and unit fractions and quotients of unit fractions and whole numbers.</p> <p>5 M3 Lesson 19: Create and solve one-step word problems involving fractions.</p>
<p>KY.5.NF.7.c</p> <p>Solve real-world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions.</p>	<p>5 M3 Lesson 12: Divide a nonzero whole number by a unit fraction to find the number of groups.</p> <p>5 M3 Lesson 13: Divide a nonzero whole number by a unit fraction to find the size of the group.</p> <p>5 M3 Lesson 14: Divide a unit fraction by a nonzero whole number.</p> <p>5 M3 Lesson 15: Divide by whole numbers and unit fractions.</p> <p>5 M3 Lesson 17: Solve word problems involving fractions with multiplication and division.</p> <p>5 M3 Lesson 19: Create and solve one-step word problems involving fractions.</p> <p>5 M3 Lesson 20: Solve multi-step word problems involving fractions and write equations with parentheses.</p> <p>5 M3 Lesson 21: Solve multi-step word problems involving fractions.</p>

Measurement and Data

Convert like measurement units within a given measurement system.

Kentucky Mathematics Course Standards	Aligned Components of <i>Eureka Math</i> ²
<p>KY.5.MD.1</p> <p>Convert among different size measurement units (mass, weight, liquid volume, length, time) within one system of units (metric system, U.S. standard system and time).</p>	<p>5 M1 Lesson 5: Convert measurements and describe relationships between metric units.</p> <p>5 M1 Lesson 6: Solve multi-step word problems by using metric measurement conversion.</p> <p>5 M3 Lesson 5: Convert larger customary measurement units to smaller measurement units.</p> <p>5 M3 Lesson 6: Convert smaller customary measurement units to larger measurement units.</p> <p>5 M4 Lesson 26: Solve a real-world problem involving metric measurements.</p> <p>5 M4 Lesson 27: Convert metric measurements involving decimals.</p> <p>5 M4 Lesson 28: Convert customary measurements involving decimals.</p>

Measurement and Data

Understand and apply the statistics process.

Kentucky Mathematics Course Standards	Aligned Components of <i>Eureka Math</i> ²
<p>KY.5.MD.2</p> <p>Identify and gather data for statistical questions focused on both categorical and numerical data. Select an appropriate data display (bar graph, pictograph, dot plot). Make observations from the graph about the questions posed.</p>	<p>5 Data Investigation: US Astronauts</p> <p>5 Data Investigation: A Typical Night of Sleep</p> <p>5 Data Investigation: Wind-Power Capacity</p>

Measurement and Data

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

Kentucky Mathematics Course Standards	Aligned Components of <i>Eureka Math</i> ²
<p>KY.5.MD.3</p> <p>Recognize volume as an attribute of solid figures and understand concepts of volume measurement.</p>	<p><i>This standard is fully addressed by the lessons aligned to its subsections.</i></p>
<p>KY.5.MD.3.a</p> <p>A cube with side length 1 unit, called a “unit cube,” is said to have “one cubic unit” of volume and can be used to measure volume.</p>	<p>5 M5 Lesson 16: Identify attributes and properties of right rectangular prisms.</p> <p>5 M5 Lesson 17: Find the volume of right rectangular prisms by packing with unit cubes and counting.</p> <p>5 M5 Lesson 19: Compose and decompose right rectangular prisms to find their volume by using layers.</p> <p>5 M5 Lesson 20: Interpret volume as filling.</p> <p>5 M5 Lesson 21: Relate volumes of solids and liquid volume.</p>
<p>KY.5.MD.3.b</p> <p>A solid figure which can be packed without gaps or overlaps using n unit cubes is said to have a volume of n cubic units.</p>	<p>5 M5 Lesson 16: Identify attributes and properties of right rectangular prisms.</p> <p>5 M5 Lesson 17: Find the volume of right rectangular prisms by packing with unit cubes and counting.</p> <p>5 M5 Lesson 19: Compose and decompose right rectangular prisms to find their volume by using layers.</p> <p>5 M5 Lesson 20: Interpret volume as filling.</p> <p>5 M5 Lesson 21: Relate volumes of solids and liquid volume.</p>
<p>KY.5.MD.4</p> <p>Measure volumes by counting unit cubic cm, cubic in, cubic ft. and improvised units.</p>	<p>5 M5 Lesson 17: Find the volume of right rectangular prisms by packing with unit cubes and counting.</p> <p>5 M5 Lesson 18: Find the volume of right rectangular prisms by packing with improvised units.</p> <p>5 M5 Lesson 19: Compose and decompose right rectangular prisms to find their volume by using layers.</p> <p>5 M5 Lesson 21: Relate volumes of solids and liquid volume.</p>

Kentucky Mathematics Course Standards

Aligned Components of *Eureka Math*²

<p>KY.5.MD.5</p> <p>Relate volume to the operations of multiplication and addition and solve real-world and mathematical problems involving volume.</p>	<p><i>This standard is fully addressed by the lessons aligned to its subsections.</i></p>
<p>KY.5.MD.5.a</p> <p>Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent threefold whole-number products as volumes.</p>	<p>5 M5 Lesson 22: Find the volumes of right rectangular prisms by using the area of the base.</p> <p>5 M5 Lesson 23: Find the volumes of right rectangular prisms by multiplying the edge lengths.</p>
<p>KY.5.MD.5.b</p> <p>Apply the formulas $V = l \times w \times h$ and $V = B \times h$ for rectangular prisms with whole-number edge lengths in the context of solving real-world and mathematical problems.</p>	<p>5 M5 Lesson 22: Find the volumes of right rectangular prisms by using the area of the base.</p> <p>5 M5 Lesson 23: Find the volumes of right rectangular prisms by multiplying the edge lengths.</p> <p>5 M5 Lesson 25: Find the volumes of solid figures composed of right rectangular prisms.</p> <p>5 M5 Lesson 26: Solve word problems involving perimeter, area, and volume.</p> <p>5 M5 Lesson 27: Apply concepts and formulas of volume to design a sculpture by using right rectangular prisms, part 1.</p> <p>5 M5 Lesson 28: Apply concepts and formulas of volume to design a sculpture by using right rectangular prisms, part 2.</p>

Kentucky Mathematics Course Standards	Aligned Components of <i>Eureka Math</i> ²
<p>KY.5.MD.5.c</p> <p>Recognize volume as additive. Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real-world problems.</p>	<p>5 M5 Lesson 24: Solve word problems involving volumes of right rectangular prisms.</p> <p>5 M5 Lesson 25: Find the volumes of solid figures composed of right rectangular prisms.</p> <p>5 M5 Lesson 26: Solve word problems involving perimeter, area, and volume.</p> <p>5 M5 Lesson 27: Apply concepts and formulas of volume to design a sculpture by using right rectangular prisms, part 1.</p> <p>5 M5 Lesson 28: Apply concepts and formulas of volume to design a sculpture by using right rectangular prisms, part 2.</p>

Geometry

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

Kentucky Mathematics Course Standards	Aligned Components of <i>Eureka Math</i> ²
<p>KY.5.G.1</p> <p>Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis and the second number indicates how far to travel in the direction of the second.</p>	<p>5 M6 Lesson 1: Construct a coordinate system on a line.</p> <p>5 M6 Lesson 2: Construct a coordinate system in a plane.</p> <p>5 M6 Lesson 3: Identify and plot points by using ordered pairs.</p>

Kentucky Mathematics Course Standards

Aligned Components of *Eureka Math*²

<p>KY.5.G.2</p> <p>Represent real-world and mathematical problems by graphing points in the first quadrant of the coordinate plane and interpret coordinate values of points in the context of the situation.</p>	<p>5 M6 Lesson 4: Describe the distance and direction between points in the coordinate plane.</p> <p>5 M6 Lesson 5: Identify properties of horizontal and vertical lines.</p> <p>5 M6 Lesson 6: Use properties of horizontal and vertical lines to solve problems.</p> <p>5 M6 Lesson 7: Generate number patterns to form ordered pairs.</p> <p>5 M6 Lesson 8: Identify addition and subtraction relationships between corresponding terms in number patterns.</p> <p>5 M6 Lesson 9: Identify multiplication and division relationships between corresponding terms in number patterns.</p> <p>5 M6 Lesson 11: Draw lines in the coordinate plane and identify points on the lines.</p> <p>5 M6 Lesson 12: Graph and classify quadrilaterals in the coordinate plane.</p> <p>5 M6 Lesson 13: Draw symmetric figures in the coordinate plane.</p> <p>5 M6 Lesson 14: Solve mathematical problems with rectangles in the coordinate plane.</p> <p>5 M6 Lesson 15: Use the coordinate plane to reason about perimeters and areas of rectangles.</p> <p>5 M6 Lesson 16: Interpret graphs that represent real-world situations.</p> <p>5 M6 Lesson 17: Plot data in the coordinate plane and analyze relationships.</p> <p>5 M6 Lesson 18: Interpret line graphs.</p> <p>5 M6 Lesson 20: Reason about patterns in real-world situations.</p>
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Geometry

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

Kentucky Mathematics Course Standards	Aligned Components of <i>Eureka Math</i> ²
<p>KY.5.G.3</p> <p>Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category.</p>	<p>5 M5 Lesson 1: Analyze hierarchies and identify properties of quadrilaterals.</p> <p>5 M5 Lesson 2: Classify trapezoids based on their properties.</p> <p>5 M5 Lesson 3: Classify parallelograms based on their properties.</p> <p>5 M5 Lesson 4: Classify rectangles and rhombuses based on their properties.</p> <p>5 M5 Lesson 5: Classify kites and squares based on their properties.</p> <p>5 M5 Lesson 6: Identify quadrilaterals from given properties.</p> <p>5 M5 Lesson 7: Classify quadrilaterals in a hierarchy based on properties.</p>
<p>KY.5.G.4</p> <p>Classify two-dimensional figures in a hierarchy based on properties.</p>	<p>5 M5 Lesson 1: Analyze hierarchies and identify properties of quadrilaterals.</p> <p>5 M5 Lesson 2: Classify trapezoids based on their properties.</p> <p>5 M5 Lesson 3: Classify parallelograms based on their properties.</p> <p>5 M5 Lesson 4: Classify rectangles and rhombuses based on their properties.</p> <p>5 M5 Lesson 5: Classify kites and squares based on their properties.</p> <p>5 M5 Lesson 6: Identify quadrilaterals from given properties.</p> <p>5 M5 Lesson 7: Classify quadrilaterals in a hierarchy based on properties.</p> <p>5 M6 Lesson 12: Graph and classify quadrilaterals in the coordinate plane.</p>