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## Grade 4 | Indiana Academic Standards for Mathematics (2023) Correlation to *Eureka Math*<sup>2</sup>® (2027)

*Eureka Math*<sup>2</sup> 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*<sup>2</sup> 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*<sup>2</sup> 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*<sup>2</sup> 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*<sup>2</sup> 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*<sup>2</sup> 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*<sup>2</sup> 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.

**Mathematical Process Standards**

**Aligned Components of *Eureka Math*<sup>2</sup>**

<p><b>PS.1</b></p> <p>Make sense of problems and persevere in solving them.</p>	<p>4 M1 Lesson 11: Find 1, 10, and 100 thousand more than and less than a given number.</p> <p>4 M2 Lesson 3: Investigate and use a formula for the area of a rectangle.</p> <p>4 M2 Lesson 16: Divide by using the break apart and distribute strategy.</p> <p>4 M2 Lesson 20: Solve word problems involving additive and multiplicative comparisons.</p> <p>4 M3 Lesson 4: Apply place value strategies to divide hundreds, tens, and ones.</p> <p>4 M3 Lesson 18: Express units of time in terms of smaller units.</p> <p>4 M3 Lesson 22: Represent, estimate, and solve division word problems.</p> <p>4 M4 Lesson 16: Generate a common numerator or denominator to compare fractions.</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 29: Solve problems by using data from a line plot.</p> <p>4 M5 Lesson 12: Apply fraction equivalence to add tenths and hundredths.</p> <p>4 M6 Lesson 20: Sort polygons based on a given rule.</p>
<p><b>PS.2</b></p> <p>Reason abstractly and quantitatively.</p>	<p>4 M1 Lesson 3: Describe relationships between measurements by using multiplicative comparison.</p> <p>4 M2 Lesson 2: Divide two- and three-digit multiples of 10 by one-digit numbers.</p> <p>4 M2 Lesson 11: Divide by using familiar strategies.</p> <p>4 M2 Lesson 19: Apply area and perimeter formulas to solve problems.</p> <p>4 M3 Lesson 14: Apply place value strategies to multiply two-digit numbers by two-digit numbers.</p> <p>4 M3 Lesson 17: Apply the distributive property to multiply.</p> <p>4 M3 Lesson 21: Find whole-number quotients and remainders.</p> <p>4 M4 Lesson 2: Decompose fractions into a sum of unit fractions.</p> <p>4 M4 Lesson 7: Rename fractions as a sum of equivalent smaller unit fractions.</p> <p>4 M4 Lesson 27: Subtract a mixed number from a mixed number.</p>

**Mathematical Process Standards**

**Aligned Components of *Eureka Math*<sup>2</sup>**

<p><b>PS.2</b> <i>continued</i></p>	<p>4 M5 Lesson 5: Decompose 1 one and express hundredths in fraction form and decimal form.</p> <p>4 M5 Lesson 8: Represent decimal numbers in expanded form.</p> <p>4 M5 Lesson 9: Compare measurements expressed as decimal numbers.</p> <p>4 M6 Lesson 6: Relate geometric figures to a real-world context.</p>
<p><b>PS.3</b></p> <p>Construct viable arguments and critique the reasoning of others.</p>	<p>4 M1 Lesson 8: Write numbers to 1,000,000 in standard form and word form.</p> <p>4 M1 Lesson 15: Apply estimation to real-world situations by using rounding.</p> <p>4 M2 Lesson 8: Multiply by applying the distributive property and write equations.</p> <p>4 M2 Lesson 13: Divide three-digit numbers by one-digit numbers by using an area model.</p> <p>4 M2 Lesson 22: Use division and the associative property of multiplication to find factors.</p> <p>4 M2 Lesson 25: Explore properties of prime and composite numbers up to 100 by using multiples.</p> <p>4 M3 Lesson 3: Multiply a two-digit multiple of 10 by a two-digit multiple of 10.</p> <p>4 M4 Lesson 12: Generate equivalent fractions for fractions greater than 1 and generate equivalent mixed numbers.</p> <p>4 M4 Lesson 13: Compare fractions by using the benchmarks <math>0</math>, <math>\frac{1}{2}</math>, and <math>1</math>.</p> <p>4 M4 Lesson 18: Estimate sums and differences of fractions by using benchmarks.</p> <p>4 M5 Lesson 6: Represent hundredths as a place value unit.</p> <p>4 M5 Lesson 11: Compare and order decimal numbers.</p> <p>4 M6 Lesson 18: Analyze and classify triangles based on side length, angle measures, or both.</p>
<p><b>PS.4</b></p> <p>Model with mathematics.</p>	<p>4 M2 Lesson 18: Investigate and use formulas for the perimeter of a rectangle.</p> <p>4 M3 Lesson 19: Express customary measurements of weight in terms of smaller units.</p> <p>4 M4 Lesson 4: Represent fractions by using various fraction models.</p> <p>4 M4 Lesson 19: Add and subtract fractions with like units.</p> <p>4 M4 Lesson 28: Represent and solve word problems with mixed numbers by using drawings and equations.</p> <p>4 M5 Lesson 14: Solve word problems with tenths and hundredths.</p>

**Mathematical Process Standards**

**Aligned Components of *Eureka Math*<sup>2</sup>**

<p><b>PS.5</b> Use appropriate tools strategically.</p>	<p>4 M1 Lesson 5: Organize, count, and represent a collection of objects.</p> <p>4 M1 Lesson 24: Express metric measurements of mass and liquid volume in terms of smaller units.</p> <p>4 M2 Lesson 4: Multiply by using familiar strategies.</p> <p>4 M2 Lesson 9: Solve multiplication word problems.</p> <p>4 M2 Lesson 10: Multiply by applying simplifying strategies.</p> <p>4 M3 Lesson 5: Apply place value strategies to divide thousands, hundreds, tens, and ones.</p> <p>4 M3 Lesson 9: Apply place value strategies to multiply three-digit numbers by one-digit numbers.</p> <p>4 M3 Lesson 13: Multiply two-digit numbers by two-digit multiples of 10.</p> <p>4 M3 Lesson 20: Express customary measurements of liquid volume in terms of smaller units.</p> <p>4 M4 Lesson 6: Rename mixed numbers as fractions greater than 1.</p> <p>4 M4 Lesson 14: Compare fractions with related denominators.</p> <p>4 M4 Lesson 15: Compare fractions with related numerators.</p> <p>4 M4 Lesson 22: Add two fractions with related units.</p> <p>4 M5 Lesson 1: Organize, count, and represent a collection of money.</p> <p>4 M5 Lesson 10: Use pictorial representations to compare decimal numbers.</p>
<p><b>PS.6</b> Attend to precision.</p>	<p>4 M1 Lesson 12: Round to the nearest thousand.</p> <p>4 M1 Lesson 13: Round to the nearest ten thousand and hundred thousand.</p> <p>4 M2 Lesson 6: Multiply with regrouping by using place value strategies and the distributive property.</p> <p>4 M2 Lesson 14: Divide two-digit numbers by one-digit numbers by using place value strategies.</p> <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 26: Use relationships within a pattern to find an unknown term in the sequence.</p> <p>4 M3 Lesson 6: Connect pictorial representations of division to long division.</p> <p>4 M3 Lesson 8: Choose and apply a method to divide multi-digit numbers.</p>

**Mathematical Process Standards**

**Aligned Components of *Eureka Math*<sup>2</sup>**

<p><b>PS.6</b> <i>continued</i></p>	<p>4 M3 Lesson 12: Multiply by using various recording methods in vertical form.</p> <p>4 M3 Lesson 15: Multiply with four partial products.</p> <p>4 M4 Lesson 3: Decompose fractions into a sum of fractions.</p> <p>4 M4 Lesson 10: Generate equivalent fractions with larger units.</p> <p>4 M4 Lesson 25: Subtract a fraction from a mixed number, part 1.</p> <p>4 M4 Lesson 30: Represent data on a line plot.</p> <p>4 M5 Lesson 4: Write mixed numbers in decimal form with tenths.</p> <p>4 M6 Lesson 1: Identify and draw points, lines, line segments, rays, and angles.</p> <p>4 M6 Lesson 3: Draw right, acute, obtuse, and straight angles.</p> <p>4 M6 Lesson 4: Identify, define, and draw perpendicular lines.</p> <p>4 M6 Lesson 5: Identify, define, and draw parallel lines.</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 19: Construct and classify triangles based on given attributes.</p>
<p><b>PS.7</b></p> <p>Look for and make use of structure.</p>	<p>4 M1 Lesson 1: Interpret multiplication as multiplicative comparison.</p> <p>4 M1 Lesson 2: Solve multiplicative comparison problems with unknowns in various positions.</p> <p>4 M1 Lesson 4: Represent the composition of larger units of money by using multiplicative comparison.</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 23: Express metric measurements of length in terms of smaller units.</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 Lesson 5: Multiply by using place value strategies and the distributive property.</p>

**Mathematical Process Standards**

**Aligned Components of *Eureka Math*<sup>2</sup>**

<b>PS.7 <i>continued</i></b>	
	4 M2 Lesson 7: Multiply by using an area model and the distributive property.
	4 M2 Lesson 12: Divide two-digit numbers by one-digit numbers by using an area model.
	4 M2 Lesson 15: Divide three-digit numbers by one-digit numbers by using place value strategies.
	4 M2 Lesson 23: Determine whether a whole number is a multiple of another number.
	4 M3 Lesson 2: Multiply by multiples of 100 and 1000.
	4 M3 Lesson 10: Apply place value strategies to multiply four-digit numbers by one-digit numbers.
	4 M3 Lesson 16: Multiply with two partial products.
	4 M4 Lesson 1: Decompose whole numbers into a sum of unit fractions.
	4 M4 Lesson 5: Rename fractions greater than 1 as mixed numbers.
	4 M4 Lesson 9: Generate equivalent fractions with smaller units for non-unit fractions.
	4 M4 Lesson 17: Apply fraction comparison strategies to compare fractions greater than 1.
	4 M4 Lesson 23: Add a fraction to a mixed number.
	4 M4 Lesson 24: Add a mixed number to a mixed number.
	4 M4 Lesson 26: Subtract a fraction from a mixed number, part 2.
	4 M5 Lesson 3: Represent tenths as a place value unit.
	4 M5 Lesson 7: Write mixed numbers in decimal form with hundredths.
	4 M5 Lesson 13: Apply fraction equivalence to add mixed numbers with tenths and hundredths.
	4 M6 Lesson 2: Identify right, acute, obtuse, and straight angles.

**Mathematical Process Standards**

**Aligned Components of *Eureka Math*<sup>2</sup>**

<p><b>PS.8</b></p> <p>Look for and express regularity in repeated reasoning.</p>	<p>4 M1 Lesson 10: Name numbers by using place value understanding.</p> <p>4 M1 Lesson 14: Round multi-digit numbers to any place.</p> <p>4 M2 Lesson 17: Express measurements of length in terms of smaller units.</p> <p>4 M2 Lesson 24: Recognize that a number is a multiple of each of its factors.</p> <p>4 M3 Lesson 1: Divide multiples of 100 and 1000.</p> <p>4 M3 Lesson 7: Represent division by using partial quotients.</p> <p>4 M3 Lesson 11: Represent multiplication by using partial products.</p> <p>4 M4 Lesson 8: Generate equivalent fractions with smaller units for unit fractions.</p> <p>4 M4 Lesson 11: Represent equivalent fractions by using tape diagrams, number lines, and multiplication or division.</p> <p>4 M5 Lesson 2: Decompose 1 one and express tenths in fraction form and decimal form.</p>
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## Number Sense

Students represent and round multi-digit numbers. Students model, compare, and generate equivalent fractions, mixed numbers, and decimal numbers to the tenths and hundredths.

Indiana Academic Standards for Mathematics	Aligned Components of <i>Eureka Math</i> <sup>2</sup>
<p><b>4.NS.1</b></p> <p>Read and write whole numbers up to 1,000,000. Use words, models, standard form, and expanded form to represent and show equivalent forms of whole numbers up to 1,000,000.</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 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><b>4.NS.2</b></p> <p>Model mixed numbers and improper fractions using visual fraction models such as number lines and area models. Use a visual fraction model to show the equivalency between whole numbers and whole numbers as fractions.</p>	<p>3 M5 Lesson 8: Identify and represent a whole as two non-unit fractions.</p> <p>3 M5 Lesson 17: Represent fractions greater than 1 on a number line and identify fractions equivalent to whole numbers.</p> <p>3 M5 Lesson 22: Identify fractions equivalent to whole numbers by using number lines.</p> <p>3 M5 Lesson 23: Reason to find fractions equivalent to whole numbers by using patterns and number lines.</p> <p>3 M5 Lesson 24: Generate equivalent fractions greater than 1 by using a number line.</p> <p>3 M5 Lesson 25: Express whole numbers as fractions with a denominator of 1.</p> <p>4 M4 Lesson 1: Decompose whole numbers into a sum of unit fractions.</p> <p>4 M4 Lesson 2: Decompose fractions into a sum of unit fractions.</p> <p>4 M4 Lesson 3: Decompose fractions into a sum of fractions.</p> <p>4 M4 Lesson 4: Represent fractions by using various fraction models.</p> <p>4 M4 Lesson 5: Rename fractions greater than 1 as mixed numbers.</p> <p>4 M4 Lesson 6: Rename mixed numbers as fractions greater than 1.</p> <p>4 M4 Lesson 13: Compare fractions by using the benchmarks 0, <math>\frac{1}{2}</math>, and 1.</p>

**Indiana Academic Standards  
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**Aligned Components of *Eureka Math*<sup>2</sup>**

<p><b>4.NS.2</b> <i>continued</i></p>	<p>4 M4 Lesson 14: Compare fractions with related denominators.</p> <p>4 M4 Lesson 15: Compare fractions with related numerators.</p> <p>4 M4 Lesson 16: Generate a common numerator or denominator to compare fractions.</p> <p>4 M4 Lesson 17: Apply fraction comparison strategies to compare fractions greater than 1.</p> <p>4 M4 Lesson 18: Estimate sums and differences of fractions by using benchmarks.</p> <p>4 M4 Lesson 19: Add and subtract fractions with like units.</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 22: Add two fractions with related units.</p>
<p><b>4.NS.3</b></p> <p>Use fraction models to represent two equivalent fractions with attention to how the number and size of the parts differ even though the fractions themselves are the same size. Use this principle to generate equivalent fractions. [In grade 4, limit denominators of fractions to 2, 3, 4, 5, 6, 8, 10, 25, 100.] (E)</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>

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<p><b>4.NS.4</b></p> <p>Compare two fractions with different numerators and different denominators (e.g., by creating common denominators or numerators, or by comparing to a benchmark, such as <math>0, \frac{1}{2}</math>, and 1). Explain why comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols <math>&gt;</math>, <math>=</math>, or <math>&lt;</math>, and justify the conclusions (e.g., by using a visual fraction model). (E)</p>	<p>4 M4 Lesson 13: Compare fractions by using the benchmarks <math>0, \frac{1}{2}</math>, and 1.</p> <p>4 M4 Lesson 14: Compare fractions with related denominators.</p> <p>4 M4 Lesson 15: Compare fractions with related numerators.</p> <p>4 M4 Lesson 16: Generate a common numerator or denominator to compare fractions.</p> <p>4 M4 Lesson 17: Apply fraction comparison strategies to compare fractions greater than 1.</p>
<p><b>4.NS.5</b></p> <p>Write tenths and hundredths in decimal and fraction notations. Use words, models, standard form, and expanded form to represent decimal numbers to hundredths. Mentally calculate fraction and decimal equivalents for halves and fourths (e.g., <math>\frac{1}{2} = 0.5 = 0.50</math>, <math>\frac{7}{4} = 1\frac{3}{4} = 1.75</math>). (E)</p>	<p>4 M5 Lesson 1: Organize, count, and represent a collection of money.</p> <p>4 M5 Lesson 2: Decompose 1 one and express tenths in fraction form and decimal form.</p> <p>4 M5 Lesson 3: Represent tenths as a place value unit.</p> <p>4 M5 Lesson 4: Write mixed numbers in decimal form with tenths.</p> <p>4 M5 Lesson 5: Decompose 1 one and express hundredths in fraction form and decimal form.</p> <p>4 M5 Lesson 6: Represent hundredths as a place value unit.</p> <p>4 M5 Lesson 7: Write mixed numbers in decimal form with hundredths.</p> <p>4 M5 Lesson 8: Represent decimal numbers in expanded form.</p> <p>4 M5 Lesson 12: Apply fraction equivalence to add tenths and hundredths.</p> <p>4 M5 Lesson 13: Apply fraction equivalence to add mixed numbers with tenths and hundredths.</p> <p>4 M5 Lesson 14: Solve word problems with tenths and hundredths.</p> <p><i>Supplemental material is necessary to address mentally calculating fraction and decimal equivalents for halves and fourths.</i></p>

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<p><b>4.NS.6</b></p> <p>Compare two decimals to hundredths by reasoning about their size based on the same whole. Record the results of comparisons with the symbols <math>&gt;</math>, <math>=</math>, or <math>&lt;</math>, and justify the conclusions (e.g., by using a visual model). (E)</p>	<p>4 M5 Lesson 9: Compare measurements expressed as decimal numbers.</p> <p>4 M5 Lesson 10: Use pictorial representations to compare decimal numbers.</p> <p>4 M5 Lesson 11: Compare and order decimal numbers.</p>
<p><b>4.NS.7</b></p> <p>Use place value understanding to round multi-digit whole numbers to any given place value.</p>	<p>4 M1 Lesson 12: Round to the nearest thousand.</p> <p>4 M1 Lesson 13: Round to the nearest ten thousand and hundred thousand.</p> <p>4 M1 Lesson 14: Round multi-digit numbers to any place.</p> <p>4 M1 Lesson 15: Apply estimation to real-world situations by using rounding.</p>

## Computation and Algebraic Thinking

Students solve real-world problems using place value strategies and properties of multiplication and division with limitations. Students compose (addition) and decompose (subtraction) non-unit fractions and mixed numbers using models and strategies, applying these concepts to real-world situations. Students investigate the relationship between two given sets of numbers and generate number patterns based upon given rules.

### Indiana Academic Standards for Mathematics

### Aligned Components of *Eureka Math*<sup>2</sup>

<p><b>4.CA.1</b></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. Describe the strategy and explain the reasoning. (E)</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 Lesson 4: Multiply by using familiar strategies.</p> <p>4 M2 Lesson 5: Multiply by using place value strategies and the distributive property.</p> <p>4 M2 Lesson 6: Multiply with regrouping by using place value strategies and the distributive property.</p> <p>4 M2 Lesson 7: Multiply by using an area model and the distributive property.</p> <p>4 M2 Lesson 8: Multiply by applying the distributive property and write equations.</p> <p>4 M2 Lesson 9: Solve multiplication word problems.</p> <p>4 M2 Lesson 10: Multiply by applying simplifying strategies.</p> <p>4 M3 Lesson 2: Multiply by multiples of 100 and 1000.</p> <p>4 M3 Lesson 3: Multiply a two-digit multiple of 10 by a two-digit multiple of 10.</p> <p>4 M3 Lesson 9: Apply place value strategies to multiply three-digit numbers by one-digit numbers.</p> <p>4 M3 Lesson 10: Apply place value strategies to multiply four-digit numbers by one-digit numbers.</p> <p>4 M3 Lesson 11: Represent multiplication by using partial products.</p> <p>4 M3 Lesson 12: Multiply by using various recording methods in vertical form.</p> <p>4 M3 Lesson 13: Multiply two-digit numbers by two-digit multiples of 10.</p> <p>4 M3 Lesson 14: Apply place value strategies to multiply two-digit numbers by two-digit numbers.</p> <p>4 M3 Lesson 15: Multiply with four partial products.</p> <p>4 M3 Lesson 16: Multiply with two partial products.</p> <p>4 M3 Lesson 17: Apply the distributive property to multiply.</p>

**Indiana Academic Standards  
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<p><b>4.CA.2</b></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. Describe the strategy and explain the reasoning. (E)</p>	<p>4 M2 Lesson 2: Divide two- and three-digit multiples of 10 by one-digit numbers.</p> <p>4 M2 Lesson 11: Divide by using familiar strategies.</p> <p>4 M2 Lesson 12: Divide two-digit numbers by one-digit numbers by using an area model.</p> <p>4 M2 Lesson 13: Divide three-digit numbers by one-digit numbers by using an area model.</p> <p>4 M2 Lesson 14: Divide two-digit numbers by one-digit numbers by using place value strategies.</p> <p>4 M2 Lesson 15: Divide three-digit numbers by one-digit numbers by using place value strategies.</p> <p>4 M2 Lesson 16: Divide by using the break apart and distribute strategy.</p> <p>4 M3 Lesson 1: Divide multiples of 100 and 1000.</p> <p>4 M3 Lesson 4: Apply place value strategies to divide hundreds, tens, and ones.</p> <p>4 M3 Lesson 5: Apply place value strategies to divide thousands, hundreds, tens, and ones.</p> <p>4 M3 Lesson 6: Connect pictorial representations of division to long division.</p> <p>4 M3 Lesson 7: Represent division by using partial quotients.</p> <p>4 M3 Lesson 8: Choose and apply a method to divide multi-digit numbers.</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>
<p><b>4.CA.3</b></p> <p>Show how the order in which two numbers are multiplied (commutative property) and how numbers are grouped in multiplication (associative property) will not change the product. Use these properties to show that numbers can be multiplied in any order. Investigate and apply the distributive property. (E)</p>	<p>3 M1 Lesson 10: Demonstrate the commutative property of multiplication using a unit of 2 and the array model.</p> <p>3 M1 Lesson 11: Demonstrate the commutative property of multiplication using a unit of 4 and the array model.</p> <p>3 M1 Lesson 12: Demonstrate the distributive property using a unit of 4.</p> <p>3 M1 Lesson 13: Demonstrate the commutative property of multiplication using a unit of 3 and the array model.</p> <p>3 M1 Lesson 14: Demonstrate the distributive property using units of 2, 3, 4, 5, and 10.</p> <p>3 M1 Lesson 19: Use the distributive property to break apart multiplication problems into known facts.</p>

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<p><b>4.CA.3 <i>continued</i></b></p>	<p>3 M3 Lesson 1: Organize, count, and represent a collection of objects.</p> <p>3 M3 Lesson 3: Count by units of 8 to multiply and divide by using arrays.</p> <p>3 M3 Lesson 4: Decompose pictorial arrays to create expressions with three factors.</p> <p>3 M3 Lesson 5: Use the break apart and distribute strategy to multiply with units of 6 and 8.</p> <p>3 M3 Lesson 6: Use the break apart and distribute strategy to divide with units of 6 and 8.</p> <p>3 M3 Lesson 8: Use the break apart and distribute strategy to multiply with units of 7.</p> <p>3 M3 Lesson 9: Model the associative property as a strategy to multiply.</p> <p>3 M3 Lesson 10: Use parentheses in expressions with different operations.</p> <p>3 M3 Lesson 11: Use the break apart and distribute strategy to divide with units of 7.</p> <p>3 M3 Lesson 14: Apply strategies and identify patterns to multiply with units of 9.</p> <p>3 M3 Lesson 21: Multiply by multiples of 10 by using place value strategies and the associative property.</p> <p>3 M3 Lesson 23: Identify patterns and apply strategies to multiply with units of 11 and 12.</p> <p>3 M3 Lesson 24: Organize, count, and represent a collection of objects.</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 Lesson 4: Multiply by using familiar strategies.</p> <p>4 M2 Lesson 5: Multiply by using place value strategies and the distributive property.</p> <p>4 M2 Lesson 6: Multiply with regrouping by using place value strategies and the distributive property.</p> <p>4 M2 Lesson 7: Multiply by using an area model and the distributive property.</p> <p>4 M2 Lesson 8: Multiply by applying the distributive property and write equations.</p> <p>4 M2 Lesson 9: Solve multiplication word problems.</p> <p>4 M2 Lesson 10: Multiply by applying simplifying strategies.</p> <p>4 M3 Lesson 2: Multiply by multiples of 100 and 1000.</p>
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**Aligned Components of *Eureka Math*<sup>2</sup>**

<p><b>4.CA.3 <i>continued</i></b></p>	<p>4 M3 Lesson 3: Multiply a two-digit multiple of 10 by a two-digit multiple of 10.</p> <p>4 M3 Lesson 9: Apply place value strategies to multiply three-digit numbers by one-digit numbers.</p> <p>4 M3 Lesson 10: Apply place value strategies to multiply four-digit numbers by one-digit numbers.</p> <p>4 M3 Lesson 11: Represent multiplication by using partial products.</p> <p>4 M3 Lesson 12: Multiply by using various recording methods in vertical form.</p> <p>4 M3 Lesson 13: Multiply two-digit numbers by two-digit multiples of 10.</p> <p>4 M3 Lesson 14: Apply place value strategies to multiply two-digit numbers by two-digit numbers.</p> <p>4 M3 Lesson 15: Multiply with four partial products.</p> <p>4 M3 Lesson 16: Multiply with two partial products.</p> <p>4 M3 Lesson 17: Apply the distributive property to multiply.</p>
<p><b>4.CA.4</b></p> <p>Investigate the mathematical relationship between factors and multiples for whole numbers from 1–100, including the set of factors and multiples for given numbers. Identify sets of factors and multiples for any given whole number up to 100.</p>	<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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<p><b>4.CA.5</b></p> <p>Solve real-world problems with whole numbers involving multiplicative comparison (e.g., by using drawings and equations with a symbol for the unknown number to represent the problem), distinguishing multiplicative comparison from additive comparison. [In grade 4, division problems should not include a remainder.] (E)</p>	<p>4 M1 Lesson 1: Interpret multiplication as multiplicative comparison.</p> <p>4 M1 Lesson 2: Solve multiplicative comparison problems with unknowns in various positions.</p> <p>4 M1 Lesson 3: Describe relationships between measurements by using multiplicative comparison.</p> <p>4 M1 Lesson 4: Represent the composition of larger units of money by using multiplicative comparison.</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>
<p><b>4.CA.6</b></p> <p>Add and subtract fractions with common denominators using visual fraction models. Decompose non-unit fractions to represent them as iterations of unit fractions. (E)</p>	<p>4 M4 Lesson 1: Decompose whole numbers into a sum of unit fractions.</p> <p>4 M4 Lesson 2: Decompose fractions into a sum of unit fractions.</p> <p>4 M4 Lesson 3: Decompose fractions into a sum of fractions.</p> <p>4 M4 Lesson 4: Represent fractions by using various fraction models.</p> <p>4 M4 Lesson 5: Rename fractions greater than 1 as mixed numbers.</p> <p>4 M4 Lesson 6: Rename mixed numbers as fractions greater than 1.</p> <p>4 M4 Lesson 7: Rename fractions as a sum of equivalent smaller unit fractions.</p> <p>4 M4 Lesson 13: Compare fractions by using the benchmarks <math>0</math>, <math>\frac{1}{2}</math>, and <math>1</math>.</p> <p>4 M4 Lesson 14: Compare fractions with related denominators.</p> <p>4 M4 Lesson 15: Compare fractions with related numerators.</p> <p>4 M4 Lesson 16: Generate a common numerator or denominator to compare fractions.</p> <p>4 M4 Lesson 17: Apply fraction comparison strategies to compare fractions greater than 1.</p> <p>4 M4 Lesson 18: Estimate sums and differences of fractions by using benchmarks.</p> <p>4 M4 Lesson 19: Add and subtract fractions with like units.</p>

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<p><b>4.CA.6 <i>continued</i></b></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 22: Add two fractions with related units.</p>
<p><b>4.CA.7</b></p> <p>Add and subtract mixed numbers with common denominators (e.g., 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>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><b>4.CA.8</b></p> <p>Solve real-world problems involving addition and subtraction of fractions referring to the same whole and having common denominators (e.g., by using visual fraction models and equations to represent the problem). (E)</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>
<p><b>4.CA.9</b></p> <p>Describe the relationship between two terms and use it to find a second number when a first number is given. Generate a number 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>

## Geometry

Students utilize appropriate tools to identify, describe, and draw parallelograms, rhombuses, and trapezoids in addition to classifying two-dimensional shapes.

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<p><b>4.G.1</b></p> <p>Identify, describe, and draw parallelograms, rhombuses, and trapezoids using appropriate tools (e.g., ruler, straightedge, and technology).</p>	<p>3 M6 Lesson 10: Draw polygons with specified attributes.</p> <p>4 M6 Lesson 1: Identify and draw points, lines, line segments, rays, and angles.</p> <p>4 M6 Lesson 2: Identify right, acute, obtuse, and straight angles.</p> <p>4 M6 Lesson 3: Draw right, acute, obtuse, and straight angles.</p> <p>4 M6 Lesson 4: Identify, define, and draw perpendicular lines.</p> <p>4 M6 Lesson 5: Identify, define, and draw parallel lines.</p> <p>4 M6 Lesson 6: Relate geometric figures to a real-world context.</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><b>4.G.2</b></p> <p>Identify, describe, and draw rays, angles (right, acute, obtuse), and perpendicular and parallel lines using appropriate tools (e.g., ruler, straightedge, and technology). Identify these in two-dimensional figures.</p>	<p>4 M6 Lesson 1: Identify and draw points, lines, line segments, rays, and angles.</p> <p>4 M6 Lesson 2: Identify right, acute, obtuse, and straight angles.</p> <p>4 M6 Lesson 3: Draw right, acute, obtuse, and straight angles.</p> <p>4 M6 Lesson 4: Identify, define, and draw perpendicular lines.</p> <p>4 M6 Lesson 5: Identify, define, and draw parallel lines.</p> <p>4 M6 Lesson 6: Relate geometric figures to a real-world context.</p> <p>4 M6 Lesson 10: Use 180° protractors to measure angles.</p>

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<p><b>4.G.2 <i>continued</i></b></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><b>4.G.3</b></p> <p>Classify triangles and quadrilaterals based on the presence or absence of parallel or perpendicular lines, or right, acute, or obtuse angles.</p>	<p>4 M6 Lesson 1: Identify and draw points, lines, line segments, rays, and angles.</p> <p>4 M6 Lesson 2: Identify right, acute, obtuse, and straight angles.</p> <p>4 M6 Lesson 3: Draw right, acute, obtuse, and straight angles.</p> <p>4 M6 Lesson 4: Identify, define, and draw perpendicular lines.</p> <p>4 M6 Lesson 5: Identify, define, and draw parallel lines.</p> <p>4 M6 Lesson 6: Relate geometric figures to a real-world context.</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>

## Measurement

Students solve real-world problems involving distance, intervals of time, volumes, masses of objects, and money by applying computation strategies, precise measurement skills, and relationships between systems of measurement. Students continue to apply the concept of area and perimeter to complex shapes to identify solutions.

### Indiana Academic Standards for Mathematics

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<p><b>4.M.1</b></p> <p>Measure length to the nearest quarter-inch, eighth-inch, and millimeter. (E)</p>	<p>3 M5 Lesson 15: Identify fractions on a ruler as numbers on a number line.</p> <p>3 M5 Lesson 16: Measure lengths and record data on a line plot.</p> <p>3 M6 Lesson 19: Measure the perimeter of various circles to the nearest quarter inch by using string.</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><i>Supplemental material is necessary to address measuring length to the nearest eighth-inch and millimeter.</i></p>
<p><b>4.M.2</b></p> <p>Within given measurement systems, convert larger units to smaller units, including km, m, cm; kg, g; lb, oz; l, ml; hr, min, sec., and use these conversions to solve real-world problems. (E)</p>	<p>4 M1 Lesson 23: Express metric measurements of length in terms of smaller units.</p> <p>4 M1 Lesson 24: Express metric measurements of mass and liquid volume in terms of smaller units.</p> <p>4 M2 Lesson 17: Express measurements of length in terms of smaller units.</p> <p>4 M3 Lesson 18: Express units of time in terms of smaller units.</p> <p>4 M3 Lesson 19: Express customary measurements of weight in terms of smaller units.</p> <p>4 M3 Lesson 20: Express customary measurements of liquid volume in terms of smaller units.</p>

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<p><b>4.M.3</b></p> <p>Use the four operations to solve real-world problems involving distances, intervals of time, volumes, masses of objects, and money. Include addition and subtraction problems involving simple fractions and problems that require expressing measurements given in a larger unit in terms of a smaller unit. (E)</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 Lesson 18: Express units of time in terms of smaller units.</p> <p>4 M3 Lesson 19: Express customary measurements of weight in terms of smaller units.</p> <p>4 M3 Lesson 20: Express customary measurements of liquid volume in terms of smaller units.</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> <p>4 M5 Lesson 14: Solve word problems with tenths and hundredths.</p>
<p><b>4.M.4</b></p> <p>Apply the area and perimeter formulas for rectangles to solve real-world and other mathematical problems. Investigate the area of complex shapes composed of rectangles by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts; apply this technique to solve real-world problems and other mathematical problems. (E)</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>

## Data Analysis

Students collect and ask questions of the data.

Indiana Academic Standards for Mathematics	Aligned Components of <i>Eureka Math</i> <sup>2</sup>
<p><b>4.DA.1</b></p> <p>Formulate questions that can be addressed with data. Collect, organize, and graph data from observations, surveys, and experiments using line plots with whole number intervals, single- and scaled bar graphs, and frequency tables. Solve real-world problems by analyzing and interpreting the data using grade-level computation and comparison strategies. (E)</p>	<p>4 M4 Lesson 29: Solve problems by using data from a line plot.</p> <p>4 M4 Lesson 30: Represent data on a line plot.</p>
<p><b>4.DA.2</b></p> <p>Make a line plot to display a data set of measurements in fractions of a unit (<math>\frac{1}{2}, \frac{1}{4}, \frac{1}{8}</math>). Solve problems involving addition and subtraction of fractions by using data displayed in line plots.</p>	<p>4 M4 Lesson 29: Solve problems by using data from a line plot.</p> <p>4 M4 Lesson 30: Represent data on a line plot.</p>

## Integrated STEM

### Communication and Collaboration

#### Indiana Academic Standards: Integrated STEM

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<p><b>4.CC.1</b></p> <p>Collect and document evidence to share information with others in charts, tables, presentations or text.</p>	<p>4 M1 Lesson 5: Organize, count, and represent a collection of objects.</p> <p>4 M1 Lesson 10: Name numbers by using place value understanding.</p> <p>4 M1 Lesson 23: Express metric measurements of length in terms of smaller units.</p> <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 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> <p>4 M2 Lesson 26: Use relationships within a pattern to find an unknown term in the sequence.</p> <p>4 M3 Lesson 7: Represent division by using partial quotients.</p> <p>4 M4 Lesson 23: Add a fraction to a mixed number.</p> <p>4 M5 Lesson 1: Organize, count, and represent a collection of money.</p> <p>4 M5 Lesson 6: Represent hundredths as a place value unit.</p> <p>4 M6 Lesson 3: Draw right, acute, obtuse, and straight angles.</p> <p>4 M6 Lesson 19: Construct and classify triangles based on given attributes.</p>
<p><b>4.CC.2</b></p> <p>Communicate the solution(s) of a problem/analysis either orally, visually, or in writing, including process steps, findings or conclusions.</p>	<p>4 M1 Lesson 5: Organize, count, and represent a collection of objects.</p> <p>4 M2 Lesson 4: Multiply by using familiar strategies.</p> <p>4 M2 Lesson 9: Solve multiplication word problems.</p> <p>4 M2 Lesson 11: Divide by using familiar strategies.</p> <p>4 M2 Lesson 16: Divide by using the break apart and distribute strategy.</p> <p>4 M4 Lesson 15: Compare fractions with related numerators.</p> <p>4 M4 Lesson 18: Estimate sums and differences of fractions by using benchmarks.</p>

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<p><b>4.CC.2</b> <i>continued</i></p>	<p>4 M4 Lesson 22: Add two fractions with related units.</p> <p>4 M4 Lesson 28: Represent and solve word problems with mixed numbers by using drawings and equations.</p> <p>4 M5 Lesson 1: Organize, count, and represent a collection of money.</p> <p>4 M5 Lesson 12: Apply fraction equivalence to add tenths and hundredths.</p> <p>4 M5 Lesson 14: Solve word problems with tenths and hundredths.</p>
<p><b>4.CC.3</b></p> <p>Identify and implement roles and responsibilities to collaborate in various group settings (i.e., online, onsite and/or hybrid) and situations.</p>	<p>4 M1 Lesson 1: Interpret multiplication as multiplicative comparison.</p> <p>4 M1 Lesson 3: Describe relationships between measurements by using multiplicative comparison.</p> <p>4 M1 Lesson 15: Apply estimation to real-world situations by using rounding.</p> <p>4 M2 Lesson 8: Multiply by applying the distributive property and write equations.</p> <p>4 M2 Lesson 23: Determine whether a whole number is a multiple of another number.</p> <p>4 M3 Lesson 5: Apply place value strategies to divide thousands, hundreds, tens, and ones.</p> <p>4 M3 Lesson 6: Connect pictorial representations of division to long division.</p> <p>4 M3 Lesson 12: Multiply by using various recording methods in vertical form.</p> <p>4 M3 Lesson 15: Multiply with four partial products.</p> <p>4 M4 Lesson 6: Rename mixed numbers as fractions greater than 1.</p> <p>4 M4 Lesson 23: Add a fraction to a mixed number.</p> <p>4 M4 Lesson 27: Subtract a mixed number from a mixed number.</p> <p>4 M5 Lesson 3: Represent tenths as a place value unit.</p> <p>4 M5 Lesson 7: Write mixed numbers in decimal form with hundredths.</p> <p>4 M5 Lesson 8: Represent decimal numbers in expanded form.</p> <p>4 M5 Lesson 10: Use pictorial representations to compare decimal numbers.</p> <p>4 M6 Lesson 1: Identify and draw points, lines, line segments, rays, and angles.</p>

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<p><b>4.CC.3 <i>continued</i></b></p>	<p>4 M6 Lesson 6: Relate geometric figures to a real-world context.</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><b>4.CC.4</b></p> <p>Communicate specific constraints and criteria established for an investigation.</p>	<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 25: Explore properties of prime and composite numbers up to 100 by using multiples.</p> <p>4 M3 Lesson 4: Apply place value strategies to divide hundreds, tens, and ones.</p> <p>4 M3 Lesson 19: Express customary measurements of weight in terms of smaller units.</p> <p>4 M4 Lesson 19: Add and subtract fractions with like units.</p> <p>4 M6 Lesson 6: Relate geometric figures to a real-world context.</p>
<p><b>4.CC.5</b></p> <p>Critique or support methods, investigations or arguments using evidence-based reasoning.</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 13: Round to the nearest ten thousand and hundred thousand.</p> <p>4 M1 Lesson 15: Apply estimation to real-world situations by using rounding.</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 Lesson 6: Multiply with regrouping by using place value strategies and the distributive property.</p> <p>4 M2 Lesson 13: Divide three-digit numbers by one-digit numbers by using an area model.</p> <p>4 M2 Lesson 14: Divide two-digit numbers by one-digit numbers by using place value strategies.</p> <p>4 M2 Lesson 19: Apply area and perimeter formulas to solve problems.</p> <p>4 M2 Lesson 22: Use division and the associative property of multiplication to find factors.</p> <p>4 M2 Lesson 26: Use relationships within a pattern to find an unknown term in the sequence.</p> <p>4 M3 Lesson 2: Multiply by multiples of 100 and 1000.</p>

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<p><b>4.CC.5 <i>continued</i></b></p>	<p>4 M3 Lesson 3: Multiply a two-digit multiple of 10 by a two-digit multiple of 10.</p> <p>4 M3 Lesson 9: Apply place value strategies to multiply three-digit numbers by one-digit numbers.</p> <p>4 M3 Lesson 11: Represent multiplication by using partial products.</p> <p>4 M3 Lesson 14: Apply place value strategies to multiply two-digit numbers by two-digit numbers.</p> <p>4 M3 Lesson 15: Multiply with four partial products.</p> <p>4 M3 Lesson 19: Express customary measurements of weight in terms of smaller units.</p> <p>4 M4 Lesson 2: Decompose fractions into a sum of unit fractions.</p> <p>4 M4 Lesson 11: Represent equivalent fractions by using tape diagrams, number lines, and multiplication or division.</p> <p>4 M4 Lesson 20: Subtract a fraction from a whole number.</p> <p>4 M4 Lesson 26: Subtract a fraction from a mixed number, part 2.</p> <p>4 M5 Lesson 14: Solve word problems with tenths and hundredths.</p> <p>4 M6 Lesson 5: Identify, define, and draw parallel lines.</p>
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## Integrated STEM

### Data Analysis and Measurement

#### Indiana Academic Standards: Integrated STEM

#### Aligned Components of *Eureka Math*<sup>2</sup>

<p><b>4.DM.1</b></p> <p>Determine appropriate measurement tools to perform measurements, calculations, and conversions (e.g., fractions, decimals, pounds, perimeter, area, kilograms to grams) defined in grade level content standards to analyze real-world scenarios.</p>	<p>4 M1 Lesson 3: Describe relationships between measurements by using multiplicative comparison.</p> <p>4 M1 Lesson 23: Express metric measurements of length in terms of smaller units.</p> <p>4 M1 Lesson 24: Express metric measurements of mass and liquid volume in terms of smaller units.</p> <p>4 M2 Lesson 3: Investigate and use a formula for the area of a rectangle.</p> <p>4 M2 Lesson 17: Express measurements of length in terms of smaller units.</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> <p>4 M3 Lesson 18: Express units of time in terms of smaller units.</p> <p>4 M3 Lesson 19: Express customary measurements of weight in terms of smaller units.</p> <p>4 M3 Lesson 20: Express customary measurements of liquid volume in terms of smaller units.</p> <p>4 M4 Lesson 6: Rename mixed numbers as fractions greater than 1.</p> <p>4 M4 Lesson 7: Rename fractions as a sum of equivalent smaller unit fractions.</p> <p>4 M4 Lesson 23: Add a fraction to a mixed number.</p> <p>4 M4 Lesson 29: Solve problems by using data from a line plot.</p> <p>4 M4 Lesson 30: Represent data on a line plot.</p> <p>4 M5 Lesson 2: Decompose 1 one and express tenths in fraction form and decimal form.</p> <p>4 M5 Lesson 7: Write mixed numbers in decimal form with hundredths.</p> <p>4 M5 Lesson 9: Compare measurements expressed as decimal numbers.</p> <p>4 M5 Lesson 11: Compare and order decimal numbers.</p> <p>4 M5 Lesson 14: Solve word problems with tenths and hundredths.</p>
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<p><b>4.DM.1 <i>continued</i></b></p>	<p>4 M6 Lesson 10: Use 180° protractors to measure angles.                      4 M6 Lesson 11: Estimate and measure angles with a 180° protractor.                      4 M5 Lesson 12: Apply fraction equivalence to add tenths and hundredths.</p>
<p><b>4.DM.2</b></p> <p>Construct visual representations defined in grade level content standards (e.g., bar graphs, charts, line plots, frequency tables) to determine patterns, using digital tools when possible and feasible.</p>	<p>4 M1 Lesson 23: Express metric measurements of length in terms of smaller units.                      4 M1 Lesson 24: Express metric measurements of mass and liquid volume in terms of smaller units.                      4 M2 Lesson 17: Express measurements of length in terms of smaller units.                      4 M2 Lesson 23: Determine whether a whole number is a multiple of another number.                      4 M2 Lesson 26: Use relationships within a pattern to find an unknown term in the sequence.                      4 M3 Lesson 18: Express units of time in terms of smaller units.                      4 M3 Lesson 19: Express customary measurements of weight in terms of smaller units.                      4 M3 Lesson 20: Express customary measurements of liquid volume in terms of smaller units.                      4 M4 Lesson 29: Solve problems by using data from a line plot.                      4 M4 Lesson 30: Represent data on a line plot.</p>
<p><b>4.DM.3</b></p> <p>Evaluate reasonableness of observations, results, and solutions throughout processes.</p>	<p>4 M1 Lesson 15: Apply estimation to real-world situations by using rounding.                      4 M2 Lesson 13: Divide three-digit numbers by one-digit numbers by using an area model.                      4 M2 Lesson 20: Solve word problems involving additive and multiplicative comparisons.                      4 M3 Lesson 22: Represent, estimate, and solve division word problems.                      4 M4 Lesson 21: Solve addition and subtraction word problems and estimate the reasonableness of the answers.                      4 M4 Lesson 28: Represent and solve word problems with mixed numbers by using drawings and equations.                      4 M4 Lesson 29: Solve problems by using data from a line plot.                      4 M5 Lesson 14: Solve word problems with tenths and hundredths.                      4 M6 Lesson 12: Use a protractor to draw angles up to 180°.</p>

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<p><b>4.DM.4</b></p> <p>Choose data sets and analysis methods to support the inquiry process.</p>	<p>4 M1 Lesson 5: Organize, count, and represent a collection of objects.</p> <p>4 M3 Lesson 18: Express units of time in terms of smaller units.</p> <p>4 M4 Lesson 16: Generate a common numerator or denominator to compare fractions.</p> <p>4 M4 Lesson 28: Represent and solve word problems with mixed numbers by using drawings and equations.</p> <p>4 M4 Lesson 29: Solve problems by using data from a line plot.</p> <p>4 M5 Lesson 1: Organize, count, and represent a collection of money.</p>
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**Integrated STEM**

**Inquiry-Based Approaches and Problem Solving**

**Indiana Academic Standards:  
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<p><b>4.IPS.1</b></p> <p>Plan and conduct an investigation to answer a specific question or solve a specific problem.</p>	<p>4 M2 Lesson 16: Divide by using the break apart and distribute strategy.</p> <p>4 M2 Lesson 20: Solve word problems involving additive and multiplicative comparisons.</p> <p>4 M2 Lesson 24: Recognize that a number is a multiple of each of its factors.</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 M5 Lesson 12: Apply fraction equivalence to add tenths and hundredths.</p>
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Integrated STEM**

**Aligned Components of *Eureka Math*<sup>2</sup>**

<p><b>4.IPS.2</b></p> <p>Decompose a complex problem into smaller steps or sequences to evaluate (e.g., what should be done first, second).</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 Lesson 10: Multiply by applying simplifying strategies.</p> <p>4 M2 Lesson 16: Divide by using the break apart and distribute strategy.</p> <p>4 M3 Lesson 8: Choose and apply a method to divide multi-digit numbers.</p> <p>4 M3 Lesson 12: Multiply by using various recording methods in vertical form.</p>
<p><b>4.IPS.3</b></p> <p>Determine one or more viable solutions using data and information to resolve a scenario given criteria and constraints.</p>	<p>4 M1 Lesson 11: Find 1, 10, and 100 thousand more than and less than a given number.</p> <p>4 M2 Lesson 2: Divide two- and three-digit multiples of 10 by one-digit numbers.</p> <p>4 M2 Lesson 3: Investigate and use a formula for the area of a rectangle.</p> <p>4 M2 Lesson 18: Investigate and use formulas for the perimeter of a rectangle.</p> <p>4 M2 Lesson 20: Solve word problems involving additive and multiplicative comparisons.</p> <p>4 M6 Lesson 4: Identify, define, and draw perpendicular lines.</p> <p>4 M6 Lesson 5: Identify, define, and draw parallel lines.</p> <p>4 M6 Lesson 6: Relate geometric figures to a real-world context.</p>

## Integrated STEM

### Applications and Modeling

#### Indiana Academic Standards: Integrated STEM

#### Aligned Components of *Eureka Math*<sup>2</sup>

Indiana Academic Standards: Integrated STEM	Aligned Components of <i>Eureka Math</i> <sup>2</sup>
<p><b>4.AM.1</b></p> <p>Apply symbols and relationships (e.g., place value, equations, operations) to represent physical or conceptual objects (e.g., letters, numbers, or displays of color may represent objects).</p>	<p>4 M1 Lesson 1: Interpret multiplication as multiplicative comparison.</p> <p>4 M2 Lesson 3: Investigate and use a formula for the area of a rectangle.</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> <p>4 M3 Lesson 6: Connect pictorial representations of division to long division.</p> <p>4 M3 Lesson 22: Represent, estimate, and solve division word problems.</p> <p>4 M4 Lesson 21: Solve addition and subtraction word problems and estimate the reasonableness of the answers.</p> <p>4 M4 Lesson 29: Solve problems by using data from a line plot.</p> <p>4 M5 Lesson 1: Organize, count, and represent a collection of money.</p> <p>4 M5 Lesson 2: Decompose 1 one and express tenths in fraction form and decimal form.</p> <p>4 M5 Lesson 3: Represent tenths as a place value unit.</p> <p>4 M5 Lesson 6: Represent hundredths as a place value unit.</p> <p>4 M5 Lesson 14: Solve word problems with tenths and hundredths.</p> <p>4 M6 Lesson 1: Identify and draw points, lines, line segments, rays, and angles.</p> <p>4 M6 Lesson 2: Identify right, acute, obtuse, and straight angles.</p> <p>4 M6 Lesson 3: Draw right, acute, obtuse, and straight angles.</p> <p>4 M6 Lesson 4: Identify, define, and draw perpendicular lines.</p> <p>4 M6 Lesson 5: Identify, define, and draw parallel lines.</p> <p>4 M6 Lesson 6: Relate geometric figures to a real-world context.</p>

**Indiana Academic Standards:  
Integrated STEM**

**Aligned Components of *Eureka Math*<sup>2</sup>**

<p><b>4.AM.2</b></p> <p>Create a model showing a subsystem as part of a larger system.</p>	<p>4 M1 Lesson 5: Organize, count, and represent a collection of objects.</p> <p>4 M5 Lesson 3: Represent tenths as a place value unit.</p> <p>4 M5 Lesson 5: Decompose 1 one and express hundredths in fraction form and decimal form.</p> <p>4 M5 Lesson 6: Represent hundredths as a place value unit.</p>
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**Integrated STEM  
Information and Digital Literacy**

**Indiana Academic Standards:  
Integrated STEM**

**Aligned Components of *Eureka Math*<sup>2</sup>**

<p><b>4.IDL.1</b></p> <p>Identify and evaluate the impact of technology when selecting tools to solve a problem in order to determine the most effective solution.</p>	<p><i>Supplemental material is necessary to address this standard.</i></p>
<p><b>4.IDL.2</b></p> <p>Review and compile information from multiple sources to solve a problem.</p>	<p>4 M1 Lesson 14: Round multi-digit numbers to any place.</p> <p>4 M2 Lesson 12: Divide two-digit numbers by one-digit numbers by using an area model.</p> <p>4 M2 Lesson 14: Divide two-digit numbers by one-digit numbers by using place value strategies.</p> <p>4 M2 Lesson 18: Investigate and use formulas for the perimeter of a rectangle.</p> <p>4 M2 Lesson 22: Use division and the associative property of multiplication to find factors.</p> <p>4 M3 Lesson 9: Apply place value strategies to multiply three-digit numbers by one-digit numbers.</p> <p>4 M3 Lesson 13: Multiply two-digit numbers by two-digit multiples of 10.</p> <p>4 M3 Lesson 20: Express customary measurements of liquid volume in terms of smaller units.</p> <p>4 M3 Lesson 21: Find whole-number quotients and remainders.</p>

**Indiana Academic Standards:  
Integrated STEM**

**Aligned Components of *Eureka Math*<sup>2</sup>**

<p><b>4.IDL.2 <i>continued</i></b></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 13: Compare fractions by using the benchmarks 0, <math>\frac{1}{2}</math>, and 1.</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 M5 Lesson 2: Decompose 1 one and express tenths in fraction form and decimal form.</p> <p>4 M5 Lesson 4: Write mixed numbers in decimal form with tenths.</p> <p>4 M5 Lesson 9: Compare measurements expressed as decimal numbers.</p> <p>4 M5 Lesson 10: Use pictorial representations to compare decimal numbers.</p> <p>4 M5 Lesson 11: Compare and order decimal numbers.</p> <p>4 M6 Lesson 12: Use a protractor to draw angles up to 180°.</p>
<p><b>4.IDL.3</b></p> <p>Describe how solutions or technologies are adapted to meet the changing needs and wants of individuals or communities.</p>	<p><i>Supplemental material is necessary to address this standard.</i></p>