# EUREKA MATH<sup>2</sup>.

# **Grade 5** | Colorado Academic Standards—Mathematics Correlation to *Eureka Math*<sup>2®</sup>

When the original *Eureka Math*<sup>®</sup> curriculum was released, it quickly became the most widely used K-5 mathematics curriculum in the country. Now, the Great Minds<sup>®</sup> teacher-writers have created *Eureka Math*<sup>2®</sup>, a groundbreaking new curriculum that helps teachers deliver exponentially better math instruction while still providing students with the same deep understanding of and fluency in math. *Eureka Math*<sup>2</sup> carefully sequences mathematical content to maximize vertical alignment-a principle tested and proven to be essential in students' mastery of math-from kindergarten through high school.

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

### Teachability

*Eureka Math*<sup>2</sup> employs streamlined materials that allow teachers to plan more efficiently and focus their energy on delivering highquality instruction that meets the individual needs of their students. Differentiation suggestions, slide decks, digital interactives, and multiple forms of assessment are just a few of the resources built right into the teacher materials.

#### Accessibility

*Eureka Math*<sup>2</sup> incorporates Universal Design for Learning principles so all learners can access the mathematics and take on challenging math concepts. Student supports are built into the instructional design and are clearly identified in the *Teach* book. Further, the curriculum carries a focus on readability. By eliminating unnecessary words and using simple, clear sentences, the *Eureka Math*<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.

### **Digital Engagement**

The digital elements of *Eureka Math*<sup>2</sup> add to students' engagement with the math. The curriculum provides teachers with digital slides for each lesson. In addition, each grade level includes wordless videos that spark students' interest and curiosity. Students at all levels work through mathematical explorations that help lead to their own mathematical discoveries. Digital lessons and videos provide opportunities for students to wonder, explore, and make sense of mathematics, which contributes to the development of a strong, positive mathematical identity.

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

# Number & Operations in Base Ten

5.NBT.A Number & Operations in Base Ten: Understand the place value system.

| Colorado Academic Standards—<br>Mathematics                                                        | Aligned Components of Eureka Math <sup>2</sup>                                                                |
|----------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|
| 5.NBT.A.1                                                                                          | 5 M1 Lesson 1: Relate adjacent place value units by using place value understanding.                          |
| Recognize that in a multi-digit number,<br>a digit in one place represents 10 times                | 5 M1 Lesson 2: Multiply and divide by 10, 100, and 1,000 and identify patterns in the products and quotients. |
| as much as it represents in the place to its right and $\frac{1}{10}$ of what it represents in the | 5 M4 Lesson 1: Model and relate decimal place value units to thousandths.                                     |
| place to its left.                                                                                 | 5 M4 Lesson 2: Represent thousandths as a place value unit.                                                   |
|                                                                                                    | 5 M4 Lesson 3: Represent decimal numbers to the thousandths place in different forms.                         |
|                                                                                                    | 5 M4 Lesson 4: Relate the values of digits in a decimal number by using place value understanding.            |
| 5.NBT.A.2                                                                                          | 5 M1 Lesson 2: Multiply and divide by 10, 100, and 1,000 and identify patterns in the products                |
| Explain patterns in the number of zeros                                                            | and quotients.                                                                                                |
| of the product when multiplying<br>a number by powers of 10, and explain                           | 5 M1 Lesson 3: Use exponents to multiply and divide by powers of $10$ .                                       |
| patterns in the placement of the decimal                                                           | 5 M1 Lesson 4: Estimate products and quotients by using powers of $10$ and their multiples.                   |
| point when a decimal is multiplied                                                                 | 5 M4 Lesson 5: Multiply and divide decimal numbers by powers of $10$ .                                        |
| or divided by a power of 10. Use<br>whole-number exponents to denote<br>powers of 10.              |                                                                                                               |
|                                                                                                    |                                                                                                               |
| 5.NBT.A.3                                                                                          | 5 M4 Lesson 6: Compare decimal numbers to the thousandths place.                                              |
| Read, write, and compare decimals to thousandths.                                                  |                                                                                                               |

| Mathematics                                                                                                                                                                                                                                       | Aligned Components of <i>Eureka Math</i> <sup>2</sup>                                                                                                |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5.NBT.A.3.a                                                                                                                                                                                                                                       | 5 M4 Lesson 1: Model and relate decimal place value units to thousandths.                                                                            |
| Read and write decimals to thousandths<br>using base-ten numerals, number<br>names, and expanded form,<br>e.g., $347.392 = 3 \times 100 + 4 \times 10 + 7 \times 1 + 3 \times \frac{1}{10} + 9 \times \frac{1}{100} + 2 \times \frac{1}{1,000}$ . | 5 M4 Lesson 2: Represent thousandths as a place value unit.<br>5 M4 Lesson 3: Represent decimal numbers to the thousandths place in different forms. |
| <b>5.NBT.A.3.b</b><br>Compare two decimals to thousandths<br>based on meanings of the digits in each<br>place, using >, =, and < symbols to record<br>the results of comparisons.                                                                 | 5 M4 Lesson 6: Compare decimal numbers to the thousandths place.                                                                                     |
| <b>5.NBT.A.4</b><br>Use place value understanding to round decimals to any place.                                                                                                                                                                 | 5 M4 Lesson 7: Round decimal numbers to the nearest one, tenth, or hundredth.<br>5 M4 Lesson 8: Round decimal numbers to any place value unit.       |

# Colorado Academic Standards—

# Number & Operations in Base Ten

5.NBT.B Number & Operations in Base Ten: Perform operations with multi-digit whole numbers and with decimals to hundredths.

| Colorado Academic Standards—<br>Mathematics                               | Aligned Components of <i>Eureka Math</i> <sup>2</sup> |
|---------------------------------------------------------------------------|-------------------------------------------------------|
| 5.NBT.B.5                                                                 | 5 M1 Topic B: Multiplication of Whole Numbers         |
| Fluently multiply multi-digit whole numbers using the standard algorithm. |                                                       |

| Mathematics                                                                                                                                                                                                                                                                                                                                                       |                                                                              |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|
| 5.NBT.B.6                                                                                                                                                                                                                                                                                                                                                         | 5 M1 Topic C: Division of Whole Numbers                                      |
| Find whole-number quotients of whole<br>numbers with up to four-digit dividends<br>and two-digit divisors, using strategies<br>based on place value, the properties<br>of operations, and/or the relationship<br>between multiplication and division.<br>Illustrate and explain the calculation<br>by using equations, rectangular arrays,<br>and/or area models. |                                                                              |
| 5.NBT.B.7                                                                                                                                                                                                                                                                                                                                                         | 5 M4 Lesson 9: Add decimal numbers by using different methods.               |
| Add, subtract, multiply, and divide                                                                                                                                                                                                                                                                                                                               | 5 M4 Lesson 10: Add decimal numbers by using place value understanding.      |
| decimals to hundredths, using concrete<br>models or drawings and strategies based                                                                                                                                                                                                                                                                                 | 5 M4 Lesson 11: Subtract decimal numbers by using different methods.         |
| on place value, properties of operations,                                                                                                                                                                                                                                                                                                                         | 5 M4 Lesson 12: Subtract decimal numbers by using place value understanding. |
| and/or the relationship between addition                                                                                                                                                                                                                                                                                                                          | 5 M4 Topic C: Multiplication of Decimal Numbers                              |
| and subtraction; relate the strategy<br>to a written method and explain the<br>reasoning used.                                                                                                                                                                                                                                                                    | 5 M4 Topic D: Division of Decimal Numbers                                    |

#### Colorado Academic Standards— Mathematics

# **Number & Operations-Fractions**

5.NF.A Number & Operations–Fractions: Use equivalent fractions as a strategy to add and subtract fractions.

| Colorado Academic Standards—<br>Mathematics                                                                                                                                                                                                                                                                                                                        | Aligned Components of Eureka Math <sup>2</sup>                                        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| 5.NF.A.1                                                                                                                                                                                                                                                                                                                                                           | 5 M2 Topic B: Addition and Subtraction of Fractions by Making Like Units              |
| Add and subtract fractions with unlike<br>denominators (including mixed numbers)<br>by replacing given fractions with<br>equivalent fractions in such a way as to<br>produce an equivalent sum or difference<br>of fractions with like denominators.                                                                                                               | 5 M2 Topic C: Addition and Subtraction of Fractions, Whole Numbers, and Mixed Numbers |
| 5.NF.A.2                                                                                                                                                                                                                                                                                                                                                           | 5 M2 Topic C: Addition and Subtraction of Fractions, Whole Numbers, and Mixed Numbers |
| Solve word problems involving addition<br>and subtraction of fractions referring<br>to the same whole, including cases<br>of unlike denominators, e.g., by using<br>visual fraction models or equations<br>to represent the problem. Use benchmark<br>fractions and number sense of fractions<br>to estimate mentally and assess the<br>reasonableness of answers. | 5 M2 Lesson 17: Solve problems by equally redistributing a total amount.              |

# **Number & Operations-Fractions**

5.NF.B Number & Operations–Fractions: Apply and extend previous understandings of multiplication and division.

| Colorado Academic Standards—<br>Mathematics                                                                                                                                                                                                                                                                               | Aligned Components of Eureka Math <sup>2</sup>                                  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| 5.NF.B.3                                                                                                                                                                                                                                                                                                                  | 5 M2 Topic A: Fractions and Division                                            |
| Interpret a fraction as division of<br>the numerator by the denominator<br>$(\frac{a}{b} = a \div b)$ . Solve word problems involving<br>division of whole numbers leading<br>to answers in the form of fractions<br>or mixed numbers, e.g., by using visual<br>fraction models or equations to represent<br>the problem. |                                                                                 |
| 5.NF.B.4                                                                                                                                                                                                                                                                                                                  | 5 M3 Lesson 3: Multiply a whole number by a fraction less than 1.               |
| Apply and extend previous understandings<br>of multiplication to multiply a fraction<br>or whole number by a fraction.                                                                                                                                                                                                    | 5 M3 Lesson 9: Multiply fractions by unit fractions by making simpler problems. |
|                                                                                                                                                                                                                                                                                                                           | 5 M3 Lesson 10: Multiply fractions greater than 1 by fractions.                 |
|                                                                                                                                                                                                                                                                                                                           | 5 M5 Lesson 12: Multiply mixed numbers.                                         |
| 5.NF.B.4.a                                                                                                                                                                                                                                                                                                                | 5 M3 Topic A: Multiplication of a Whole Number by a Fraction                    |
| Interpret the product $\frac{a}{b} \times q$ as $a$ parts<br>of a partition of $q$ into $b$ equal parts;                                                                                                                                                                                                                  | 5 M3 Lesson 7: Multiply fractions less than 1 by unit fractions pictorially.    |
|                                                                                                                                                                                                                                                                                                                           | 5 M3 Lesson 8: Multiply fractions less than 1 pictorially.                      |

5 M3 Lesson 11: Multiply fractions.

of operations  $a \times q \div b$ .

equivalently, as the result of a sequence

| Colorado Academic Standards—<br>Mathematics                                                                                                                       | Aligned Components of <i>Eureka Math</i> <sup>2</sup>                                                               |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| 5.NF.B.4.b                                                                                                                                                        | 5 M5 Lesson 8: Find areas of square tiles with fraction side lengths by relating the tile to a unit square.         |
| Find the area of a rectangle with                                                                                                                                 | 5 M5 Lesson 9: Organize, count, and represent a collection of square tiles.                                         |
| fractional side lengths by tiling it with<br>unit squares of the appropriate unit<br>fraction side lengths, and show that                                         | 5 M5 Lesson 10: Find the area of a rectangle with fraction side lengths by relating the rectangle to a unit square. |
| the area is the same as would be found                                                                                                                            | 5 M5 Lesson 11: Find areas of rectangles with fraction side lengths by using multiplication.                        |
| by multiplying the side lengths. Multiply                                                                                                                         | 5 M5 Lesson 12: Multiply mixed numbers.                                                                             |
| fractional side lengths to find areas<br>of rectangles, and represent fraction<br>products as rectangular areas.                                                  | 5 M5 Lesson 13: Solve mathematical problems involving areas of composite figures with mixed-number side lengths.    |
|                                                                                                                                                                   | 5 M5 Lesson 14: Solve real-world problems involving areas of composite figures with mixed-number side lengths.      |
|                                                                                                                                                                   | 5 M6 Lesson 15: Use the coordinate plane to reason about perimeters and areas of rectangles.                        |
| 5.NF.B.5                                                                                                                                                          | This standard is fully addressed by the lessons aligned to its subsections.                                         |
| Interpret multiplication as scaling (resizing), by:                                                                                                               |                                                                                                                     |
| 5.NF.B.5.a                                                                                                                                                        | 5 M3 Lesson 3: Multiply a whole number by a fraction less than 1.                                                   |
| Comparing the size of a product to the<br>size of one factor on the basis of the size<br>of the other factor, without performing<br>the indicated multiplication. | 5 M3 Lesson 4: Multiply a whole number by a fraction.                                                               |
|                                                                                                                                                                   | 5 M3 Topic B: Multiplication of Fractions                                                                           |
|                                                                                                                                                                   |                                                                                                                     |

# Colorado Academic Standards—

| Colorado Academic Standards—<br>Mathematics                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Aligned Components of <i>Eureka Math</i> <sup>2</sup>                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5.NF.B.5.b                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 5 M3 Lesson 1: Find fractions of a set with arrays.                                                                                                                                                                                                                                                                                                                                                                                                    |
| Explaining why multiplying a given<br>number by a fraction greater than 1<br>results in a product greater than the<br>given number (recognizing multiplication<br>by whole numbers greater than 1 as a<br>familiar case); explaining why multiplying<br>a given number by a fraction less than 1<br>results in a product smaller than the given<br>number; and relating the principle<br>of fraction equivalence $\frac{a}{b} = \frac{n \times a}{n \times b}$ to the<br>effect of multiplying $\frac{a}{b}$ by 1. | <ul> <li>5 M3 Lesson 2: Interpret fractions as division to find fractions of a set with tape diagrams and number lines.</li> <li>5 M3 Lesson 4: Multiply a whole number by a fraction.</li> <li>5 M3 Lesson 5: Convert larger customary measurement units to smaller measurement units.</li> <li>5 M3 Lesson 6: Convert smaller customary measurement units to larger measurement units.</li> <li>5 M3 Topic B: Multiplication of Fractions</li> </ul> |
| <b>5.NF.B.6</b><br>Solve real-world problems involving<br>multiplication of fractions and mixed<br>numbers, e.g., by using visual fraction<br>models or equations to represent<br>the problem.                                                                                                                                                                                                                                                                                                                     | <ul> <li>5 M3 Lesson 17: Solve word problems involving fractions with multiplication and division.</li> <li>5 M3 Lesson 21: Solve multi-step word problems involving fractions.</li> <li>5 M5 Lesson 14: Solve real-world problems involving areas of composite figures with mixed-number side lengths.</li> <li>5 M5 Lesson 15: Solve multi-step word problems involving multiplication of mixed numbers.</li> </ul>                                  |
| 5.NF.B.7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | This standard is fully addressed by the lessons aligned to its subsections.                                                                                                                                                                                                                                                                                                                                                                            |
| Apply and extend previous understandings<br>of division to divide unit fractions by whole<br>numbers and whole numbers by unit<br>fractions. (Students able to multiply<br>fractions in general can develop<br>strategies to divide fractions in general,<br>by reasoning about the relationship<br>between multiplication and division. But<br>division of a fraction by a fraction is not<br>a requirement at this grade.)                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

# Colorado Academic Standards—

| Mathematics                                                                                                                                           | Aligned Components of <i>Eureka Math</i> <sup>2</sup>                                                                                     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| 5.NF.B.7.a                                                                                                                                            | 5 M3 Lesson 14: Divide a unit fraction by a nonzero whole number.                                                                         |
| Interpret division of a unit fraction by a                                                                                                            | 5 M3 Lesson 15: Divide by whole numbers and unit fractions.                                                                               |
| non-zero whole number, and compute such quotients.                                                                                                    | 5 M3 Lesson 16: Reason about the size of quotients of whole numbers and unit fractions and quotients of unit fractions and whole numbers. |
|                                                                                                                                                       | 5 M3 Lesson 19: Create and solve one-step word problems involving fractions.                                                              |
| 5.NF.B.7.b                                                                                                                                            | 5 M3 Lesson 12: Divide a nonzero whole number by a unit fraction to find the number of groups.                                            |
| Interpret division of a whole number                                                                                                                  | 5 M3 Lesson 13: Divide a nonzero whole number by a unit fraction to find the size of the group.                                           |
| by a unit fraction, and compute such                                                                                                                  | 5 M3 Lesson 15: Divide by whole numbers and unit fractions.                                                                               |
| quotients.                                                                                                                                            | 5 M3 Lesson 16: Reason about the size of quotients of whole numbers and unit fractions and quotients of unit fractions and whole numbers. |
|                                                                                                                                                       | 5 M3 Lesson 19: Create and solve one-step word problems involving fractions.                                                              |
| 5.NF.B.7.c                                                                                                                                            | 5 M3 Lesson 12: Divide a nonzero whole number by a unit fraction to find the number of groups.                                            |
| Solve real-world problems involving                                                                                                                   | 5 M3 Lesson 13: Divide a nonzero whole number by a unit fraction to find the size of the group.                                           |
| division of unit fractions by non-zero<br>whole numbers and division of whole                                                                         | 5 M3 Lesson 14: Divide a unit fraction by a nonzero whole number.                                                                         |
| whole numbers and division of whole<br>numbers by unit fractions, e.g., by using<br>visual fraction models and equations<br>to represent the problem. | 5 M3 Lesson 15: Divide by whole numbers and unit fractions.                                                                               |
|                                                                                                                                                       | 5 M3 Lesson 17: Solve word problems involving fractions with multiplication and division.                                                 |
|                                                                                                                                                       | 5 M3 Lesson 19: Create and solve one-step word problems involving fractions.                                                              |
|                                                                                                                                                       | 5 M3 Lesson 20: Solve multi-step word problems involving fractions and write equations with parentheses.                                  |
|                                                                                                                                                       | 5 M3 Lesson 21: Solve multi-step word problems involving fractions.                                                                       |
|                                                                                                                                                       |                                                                                                                                           |

#### Colorado Academic Standards— Mathematics Aligned Components of *Eureka Math*<sup>2</sup>

# **Operations & Algebraic Thinking**

5.OA.A Operations & Algebraic Thinking: Write and interpret numerical expressions.

| Colorado Academic Standards—<br>Mathematics                                                   | Aligned Components of <i>Eureka Math</i> <sup>2</sup>                                                                                     |
|-----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| 5.OA.A.1                                                                                      | 5 M1 Lesson 7: Multiply by using familiar methods.                                                                                        |
| Use grouping symbols (parentheses,<br>brackets, or braces) in numerical                       | 5 M1 Lesson 8: Multiply two- and three-digit numbers by two-digit numbers by using the distributive property.                             |
| expressions, and evaluate expressions with these symbols.                                     | 5 M1 Topic D: Multi-Step Problems with Whole Numbers                                                                                      |
| with these symbols.                                                                           | 5 M3 Lesson 18: Compare and evaluate expressions with parentheses.                                                                        |
|                                                                                               | 5 M3 Lesson 22: Evaluate expressions involving nested grouping symbols.                                                                   |
|                                                                                               | 5 M4 Lesson 29: Interpret, evaluate, and compare numerical expressions involving decimals.                                                |
|                                                                                               | 5 M4 Lesson 30: Create and solve real-world problems for given numerical expressions involving decimals.                                  |
| 5.OA.A.2                                                                                      | 5 M1 Topic D: Multi-Step Problems with Whole Numbers                                                                                      |
| Write simple expressions that record                                                          | 5 M3 Lesson 12: Divide a nonzero whole number by a unit fraction to find the number of groups.                                            |
| calculations with numbers, and interpret<br>numerical expressions without<br>evaluating them. | 5 M3 Lesson 16: Reason about the size of quotients of whole numbers and unit fractions and quotients of unit fractions and whole numbers. |
|                                                                                               | 5 M3 Lesson 18: Compare and evaluate expressions with parentheses.                                                                        |
|                                                                                               | 5 M4 Lesson 29: Interpret, evaluate, and compare numerical expressions involving decimals.                                                |
|                                                                                               | 5 M4 Lesson 30: Create and solve real-world problems for given numerical expressions involving decimals.                                  |

# **Operations & Algebraic Thinking**

5.OA.B Operations & Algebraic Thinking: Analyze patterns and relationships.

| Colorado Academic Standards—<br>Mathematics                                                                                                                                                                                                                          | Aligned Components of Eureka Math <sup>2</sup>                                                                                                                                                                                                                                                                                                                                                                                       |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5.OA.B.3                                                                                                                                                                                                                                                             | 5 M6 Lesson 7: Generate number patterns to form ordered pairs.                                                                                                                                                                                                                                                                                                                                                                       |
| Generate two numerical patterns using<br>two given rules. Identify apparent<br>relationships between corresponding<br>terms. Form ordered pairs consisting<br>of corresponding terms from the two<br>patterns, and graph the ordered pairs<br>on a coordinate plane. | <ul> <li>5 M6 Lesson 8: Identify addition and subtraction relationships between corresponding terms in number patterns.</li> <li>5 M6 Lesson 9: Identify multiplication and division relationships between corresponding terms in number patterns.</li> <li>5 M6 Lesson 11: Draw lines in the coordinate plane and identify points on the lines.</li> <li>5 M6 Lesson 20: Reason about patterns in real-world situations.</li> </ul> |

# Measurement & Data

5.MD.A Measurement & Data: Convert like measurement units within a given measurement system.

| Colorado Academic Standards—<br>Mathematics                                                                                                                                                                  | Aligned Components of Eureka Math <sup>2</sup>                                                                                                                                     |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5.MD.A.1                                                                                                                                                                                                     | 5 M1 Lesson 5: Convert measurements and describe relationships between metric units.                                                                                               |
| Convert among different-sized standard<br>measurement units within a given<br>measurement system (e.g., convert<br>5 cm to 0.05 m), and use these conversions<br>in solving multi-step, real-world problems. | 5 M1 Lesson 6: Solve multi-step word problems by using metric measurement conversion.                                                                                              |
|                                                                                                                                                                                                              | 5 M3 Lesson 5: Convert larger customary measurement units to smaller measurement units.<br>5 M3 Lesson 6: Convert smaller customary measurement units to larger measurement units. |
|                                                                                                                                                                                                              | 5 M4 Lesson 26: Solve a real-world problem involving metric measurements.                                                                                                          |
|                                                                                                                                                                                                              | 5 M4 Lesson 27: Convert metric measurements involving decimals.                                                                                                                    |
|                                                                                                                                                                                                              | 5 M4 Lesson 28: Convert customary measurements involving decimals.                                                                                                                 |

#### Measurement & Data

5.MD.B Measurement & Data: Represent and interpret data.

# Colorado Academic Standards— Mathematics Aligned Components of *Eureka Math*<sup>2</sup>

| 5.MD.B.2                                                                                                                                                                                                                                                     | 5 M2 Topic D: Problem Solving and Line Plots with Fractional Measurements |
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| Make a line plot to display a data set<br>of measurements in fractions of a unit<br>$\left(\frac{1}{2}, \frac{1}{4}, \frac{1}{8}\right)$ . Use operations on fractions for<br>this grade to solve problems involving<br>information presented in line plots. |                                                                           |

### Measurement & Data

5.MD.C Measurement & Data: Geometric measurement: Understand concepts of volume and relate volume to multiplication and to addition.

| Colorado Academic Standards—<br>Mathematics                                                                                                  | Aligned Components of <i>Eureka Math</i> <sup>2</sup>                                                |
|----------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|
| 5.MD.C.3                                                                                                                                     | 5 M5 Lesson 16: Identify attributes and properties of right rectangular prisms.                      |
| Recognize volume as an attribute<br>of solid figures and understand concepts<br>of volume measurement.                                       | 5 M5 Lesson 17: Find the volume of right rectangular prisms by packing with unit cubes and counting. |
|                                                                                                                                              | 5 M5 Lesson 19: Compose and decompose right rectangular prisms to find their volume by using layers. |
|                                                                                                                                              | 5 M5 Lesson 20: Interpret volume as filling.                                                         |
|                                                                                                                                              | 5 M5 Lesson 21: Relate volumes of solids and liquid volume.                                          |
| 5.MD.C.3.a                                                                                                                                   | 5 M5 Lesson 16: Identify attributes and properties of right rectangular prisms.                      |
| A cube with side length 1 unit, called a<br>"unit cube," is said to have "one cubic<br>unit" of volume and can be used to<br>measure volume. | 5 M5 Lesson 17: Find the volume of right rectangular prisms by packing with unit cubes and counting. |
|                                                                                                                                              | 5 M5 Lesson 19: Compose and decompose right rectangular prisms to find their volume by using layers. |
|                                                                                                                                              | 5 M5 Lesson 20: Interpret volume as filling.                                                         |
|                                                                                                                                              | 5 M5 Lesson 21: Relate volumes of solids and liquid volume.                                          |

| Colorado Academic Standards—<br>Mathematics                                                                                                                                                                                                                                                                                                                                                                                              | Aligned Components of <i>Eureka Math</i> <sup>2</sup>                                                                                                                                                                                                                                                                                                                                                                                                      |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>5.MD.C.3.b</b><br>A solid figure which can be packed<br>without gaps or overlaps using<br><i>n</i> unit cubes is said to have a volume<br>of <i>n</i> cubic units.                                                                                                                                                                                                                                                                    | <ul> <li>5 M5 Lesson 16: Identify attributes and properties of right rectangular prisms.</li> <li>5 M5 Lesson 17: Find the volume of right rectangular prisms by packing with unit cubes and counting.</li> <li>5 M5 Lesson 19: Compose and decompose right rectangular prisms to find their volume by using layers.</li> <li>5 M5 Lesson 20: Interpret volume as filling.</li> <li>5 M5 Lesson 21: Relate volumes of solids and liquid volume.</li> </ul> |
| <b>5.MD.C.4</b><br>Measure volumes by counting unit cubes,<br>using cubic cm, cubic in, cubic ft, and<br>improvised units.                                                                                                                                                                                                                                                                                                               | <ul> <li>5 M5 Lesson 17: Find the volume of right rectangular prisms by packing with unit cubes and counting.</li> <li>5 M5 Lesson 18: Find the volume of right rectangular prisms by packing with improvised units.</li> <li>5 M5 Lesson 19: Compose and decompose right rectangular prisms to find their volume by using layers.</li> <li>5 M5 Lesson 21: Relate volumes of solids and liquid volume.</li> </ul>                                         |
| <b>5.MD.C.5</b><br>Relate volume to the operations of<br>multiplication and addition and solve<br>real-world and mathematical problems<br>involving volume.                                                                                                                                                                                                                                                                              | 5 M5 Lesson 22: Find the volumes of right rectangular prisms by using the area of the base.<br>5 M5 Lesson 24: Solve word problems involving volumes of right rectangular prisms.                                                                                                                                                                                                                                                                          |
| <b>5.MD.C.5.a</b><br>Model the volume of a right rectangular<br>prism with whole-number side lengths<br>by packing it with unit cubes, and show<br>that the volume is the same as would<br>be found by multiplying the edge lengths,<br>equivalently by multiplying the height<br>by the area of the base. Represent<br>threefold whole-number products<br>as volumes, e.g., to represent the<br>associative property of multiplication. | 5 M5 Lesson 22: Find the volumes of right rectangular prisms by using the area of the base.<br>5 M5 Lesson 23: Find the volumes of right rectangular prisms by multiplying the edge lengths.                                                                                                                                                                                                                                                               |

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| Colorado Academic Standards—<br>Mathematics                                                                                                                                                                                                          | Aligned Components of <i>Eureka Math</i> <sup>2</sup>                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| 5.MD.C.5.b                                                                                                                                                                                                                                           | 5 M5 Lesson 22: Find the volumes of right rectangular prisms by using the area of the base.                            |
| Apply the formulas $V = l \times w \times h$ and<br>$V = b \times h$ for rectangular prisms to find<br>volumes of right rectangular prisms<br>with whole-number edge lengths<br>in the context of solving real-world and<br>mathematical problems.   | 5 M5 Lesson 23: Find the volumes of right rectangular prisms by multiplying the edge lengths.                          |
|                                                                                                                                                                                                                                                      | 5 M5 Lesson 25: Find the volumes of solid figures composed of right rectangular prisms.                                |
|                                                                                                                                                                                                                                                      | 5 M5 Lesson 26: Solve word problems involving perimeter, area, and volume.                                             |
|                                                                                                                                                                                                                                                      | 5 M5 Lesson 27: Apply concepts and formulas of volume to design a sculpture by using right rectangular prisms, part 1. |
|                                                                                                                                                                                                                                                      | 5 M5 Lesson 28: Apply concepts and formulas of volume to design a sculpture by using right rectangular prisms, part 2. |
| 5.MD.C.5.c                                                                                                                                                                                                                                           | 5 M5 Lesson 24: Solve word problems involving volumes of right rectangular prisms.                                     |
| Use the additive nature of volume to find<br>volumes of solid figures composed of two<br>non-overlapping right rectangular<br>prisms by adding the volumes of the<br>non-overlapping parts, applying this<br>technique to solve real-world problems. | 5 M5 Lesson 25: Find the volumes of solid figures composed of right rectangular prisms.                                |
|                                                                                                                                                                                                                                                      | 5 M5 Lesson 26: Solve word problems involving perimeter, area, and volume.                                             |
|                                                                                                                                                                                                                                                      | 5 M5 Lesson 27: Apply concepts and formulas of volume to design a sculpture by using right rectangular prisms, part 1. |
|                                                                                                                                                                                                                                                      | 5 M5 Lesson 28: Apply concepts and formulas of volume to design a sculpture by using right rectangular prisms, part 2. |
|                                                                                                                                                                                                                                                      | 1                                                                                                                      |

# Colorado Academic Standards—

# Geometry

5.G.A Geometry: Graph points on the coordinate plane to solve real-world and mathematical problems.

## Colorado Academic Standards— Mathematics

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

| 5.G.A.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 5 M6 Lesson 1: Construct a coordinate system on a line.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Use a pair of perpendicular number lines,<br>called axes, to define a coordinate<br>system, with the intersection of the lines<br>(the origin) arranged to coincide with<br>the 0 on each line and a given point<br>in the plane located by using an ordered<br>pair of numbers, called its coordinates.<br>Understand that the first number<br>indicates how far to travel from the origin<br>in the direction of one axis, and the<br>second number indicates how far to travel<br>in the direction of the second axis, with<br>the convention that the names of the<br>two axes and the coordinates correspond<br>(e.g., x-axis and x-coordinate, y-axis and<br>y-coordinate). | 5 M6 Lesson 2: Construct a coordinate system in a plane.<br>5 M6 Lesson 3: Identify and plot points by using ordered pairs.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>5.G.A.2</b><br>Represent real-world and mathematical<br>problems by graphing points in the first<br>quadrant of the coordinate plane, and<br>interpret coordinate values of points<br>in the context of the situation.                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <ul> <li>5 M6 Lesson 4: Describe the distance and direction between points in the coordinate plane.</li> <li>5 M6 Lesson 5: Identify properties of horizontal and vertical lines.</li> <li>5 M6 Lesson 6: Use properties of horizontal and vertical lines to solve problems.</li> <li>5 M6 Lesson 7: Generate number patterns to form ordered pairs.</li> <li>5 M6 Lesson 8: Identify addition and subtraction relationships between corresponding terms in number patterns.</li> <li>5 M6 Lesson 9: Identify multiplication and division relationships between corresponding terms in number patterns.</li> </ul> |

| Colorado Academic Standards—<br>Mathematics | Aligned Components of <i>Eureka Math</i> <sup>2</sup>                        |
|---------------------------------------------|------------------------------------------------------------------------------|
| 5.G.A.2 continued                           | 5 M6 Topic C: Solve Mathematical Problems in the Coordinate Plane            |
|                                             | 5 M6 Lesson 16: Interpret graphs that represent real-world situations.       |
|                                             | 5 M6 Lesson 17: Plot data in the coordinate plane and analyze relationships. |
|                                             | 5 M6 Lesson 18: Interpret line graphs.                                       |
|                                             | 5 M6 Lesson 20: Reason about patterns in real-world situations.              |

# Geometry

5.G.B Geometry: Classify two-dimensional figures into categories based on their properties.

| Colorado Academic Standards—<br>Mathematics                                                                                   | Aligned Components of <i>Eureka Math</i> <sup>2</sup>                          |
|-------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| 5.G.B.3                                                                                                                       | 5 M5 Topic A: Drawing, Analysis, and Classification of Two-Dimensional Figures |
| Explain that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. |                                                                                |
| 5.G.B.4                                                                                                                       | 5 M5 Topic A: Drawing, Analysis, and Classification of Two-Dimensional Figures |
| Classify two-dimensional figures in a hierarchy based on properties.                                                          | 5 M6 Lesson 12: Graph and classify quadrilaterals in the coordinate plane.     |