
Grade 5 | West Virginia College- and Career-Readiness Standards for Mathematics Correlation to *Eureka Math*[®]

About *Eureka Math*

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

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

Aligned

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

Data

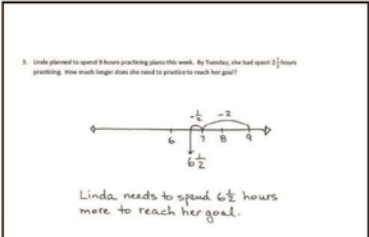
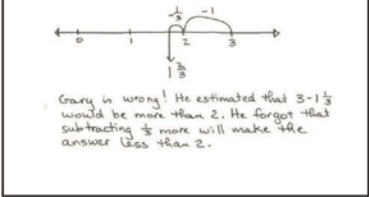
Schools and districts nationwide are experiencing student growth and impressive test scores after using *Eureka Math*. See their stories and data at greatminds.org/data.

Full Suite of Resources

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

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

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

Mathematical Habits of Mind	Aligned Components of <i>Eureka Math</i>
<p>MHM.1 Make sense of problems and persevere in solving them.</p>	<p>Lessons in every module engage students in mathematical practices. These are designated in the Module Overview and labeled in lessons.</p> <p>For example:</p>
<p>MHM.2 Reason abstractly and quantitatively.</p>	<p>A STORY OF UNITS Lesson 8 5•3</p>
<p>MHM.3 Construct viable arguments and critique the reasoning of others.</p>	<p>T: Student B, what were you saying about the addition problems compared to the subtraction problems?</p> <p>S: Addition takes less time and thinking. Just add the whole numbers and write in the fraction. But with subtraction, you have to think harder. First, you subtract the whole numbers, but that won't be your whole number answer. You have to make it one number smaller. In Problem 1(f), for instance, 17 minus 15 equals 2, but the answer won't be 2; it will be between 1 and 2. So, I write down the whole number 1, and then figure out the fraction.</p>
<p>MHM.4 Model with mathematics.</p>	<p>MP.3 T: Student C, how did you find the fraction that Student B mentioned?</p> <p>S: For finding the fraction part of subtraction, I like to count up. For example, in Problem 1(d), I found the whole number and then said $\frac{3}{7}, \frac{4}{7}, \frac{5}{7}, \frac{6}{7}, \frac{7}{7}$. That's 5 groups of sevenths. So, the fraction is $\frac{5}{7}$.</p>
<p>MHM.5 Use appropriate tools strategically.</p>	<p>T: Many of us are finding our own strategies for solving addition and subtraction of whole numbers and fractions. Share with your partner your own strategies. Listen carefully and see if you learn a new strategy to try.</p> <p>S: (Discuss.)</p> <p>T: (If time permits, ask two students to share what they heard.)</p>
<p>MHM.6 Attend to precision.</p>	
<p>MHM.7 Look for and make use of structure.</p>	
<p>MHM.8 Look for and express regularity in repeated reasoning.</p>	

Operations and Algebraic Thinking

Write and interpret numerical expressions.

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<p>M.5.1</p> <p>Use parentheses or brackets in numerical expressions and evaluate expressions with these symbols.</p>	<p>G5 M2 Lesson 3: Write and interpret numerical expressions, and compare expressions using a visual model.</p> <p>G5 M2 Lesson 4: Convert numerical expressions into unit form as a mental strategy for multi-digit multiplication.</p> <p>G5 M4 Lesson 10: Compare and evaluate expressions with parentheses.</p> <p>G5 M4 Lesson 32: Interpret and evaluate numerical expressions including the language of scaling and fraction division.</p> <p>G5 M6 Lesson 26: Solidify writing and interpreting numerical expressions.</p> <p>G5 M6 Lesson 27: Solidify writing and interpreting numerical expressions.</p>
<p>M.5.2</p> <p>Write simple expressions that record calculations with numbers and interpret numerical expressions without evaluating them (e.g., express the calculation “add 8 and 7, then multiply by 2” as $2 \times (8 + 7)$; recognize that $3 \times (18,932 + 921)$ is three times as large as $18,932 + 921$, without having to calculate the indicated sum or product).</p>	<p>G5 M2 Lesson 3: Write and interpret numerical expressions, and compare expressions using a visual model.</p> <p>G5 M2 Lesson 4: Convert numerical expressions into unit form as a mental strategy for multi-digit multiplication.</p> <p>G5 M4 Lesson 10: Compare and evaluate expressions with parentheses.</p> <p>G5 M4 Lesson 32: Interpret and evaluate numerical expressions including the language of scaling and fraction division.</p> <p>G5 M6 Lesson 7: Plot points, use them to draw lines in the plane, and describe patterns within the coordinate pairs.</p> <p>G5 M6 Lesson 8: Generate a number pattern from a given rule, and plot the points.</p> <p>G5 M6 Lesson 9: Generate two number patterns from given rules, plot the points, and analyze the patterns.</p> <p>G5 M6 Lesson 26: Solidify writing and interpreting numerical expressions.</p> <p>G5 M6 Lesson 27: Solidify writing and interpreting numerical expressions.</p>

Operations and Algebraic Thinking

Analyze patterns and relationships.

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M.5.3

Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns and graph the ordered pairs on a coordinate plane (e.g., given the rule “Add 3” and the starting number 0 and given the rule “Add 6” and the starting number 0, generate terms in the resulting sequences and observe that the terms in one sequence are twice the corresponding terms in the other sequence; explain informally why this is so).

G5 M6 Topic B: Patterns in the Coordinate Plane and Graphing Number Patterns from Rules

G5 M6 Lesson 18: Draw symmetric figures on the coordinate plane.

G5 M6 Lesson 31: Explore the Fibonacci sequence.

G5 M6 Lesson 32: Explore patterns in saving money.

Number and Operations in Base Ten

Understand the place value system.

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<p>M.5.4</p> <p>Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and $\frac{1}{10}$ of what it represents in the place to its left.</p>	<p>G5 M1 Lesson 1: Reason concretely and pictorially using place value understanding to relate adjacent base ten units from millions to thousandths.</p> <p>G5 M1 Lesson 2: Reason abstractly using place value understanding to relate adjacent base ten units from millions to thousandths.</p> <p>G5 M2 Topic A: Mental Strategies for Multi-Digit Whole Number Multiplication</p> <p>G5 M2 Lesson 16: Use divide by 10 patterns for multi-digit whole number division.</p>
<p>M.5.5</p> <p>Explain how the value of a multi-digit number, including decimals, is changed when the number is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.</p>	<p>G5 M1 Lesson 3: Use exponents to name place value units and explain patterns in the placement of the decimal point.</p> <p>G5 M1 Lesson 4: Use exponents to denote powers of 10 with application to metric conversions.</p> <p>G5 M1 Lesson 12: Multiply a decimal fraction by single-digit whole numbers, including using estimation to confirm the placement of the decimal point.</p> <p>G5 M2 Topic A: Mental Strategies for Multi-Digit Whole Number Multiplication</p> <p>G5 M2 Lesson 16: Use divide by 10 patterns for multi-digit whole number division.</p> <p>G5 M2 Lesson 24: Divide decimal dividends by multiples of 10, reasoning about the placement of the decimal point and making connections to a written method.</p>
<p>M.5.6</p> <p>Read, write, and compare decimals to thousandths.</p>	<p><i>This standard is fully addressed by the lessons aligned to its subsections.</i></p>

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<p>M.5.6.a</p> <p>Read and write decimals to thousandths using base-ten numerals, number names and expanded form (e.g., $347.392 = 3 \times 100 + 4 \times 10 + 7 \times 1 + 3 \times (\frac{1}{10}) + 9 \times (\frac{1}{100}) + 2 \times (\frac{1}{1,000})$).</p>	<p>G5 M1 Lesson 5: Name decimal fractions in expanded, unit, and word forms by applying place value reasoning.</p> <p>G5 M1 Topic D: Adding and Subtracting Decimals</p> <p>G5 M1 Topic E: Multiplying Decimals</p> <p>G5 M6 Lesson 28: Solidify fluency with Grade 5 skills.</p>
<p>M.5.6.b</p> <p>Compare two decimals to thousandths based on meanings of the digits in each place, using $>$, $=$ and $<$ symbols to record the results of comparisons.</p>	<p>G5 M1 Lesson 6: Compare decimal fractions to the thousandths using like units, and express comparisons with $>$, $<$, $=$.</p> <p>G5 M6 Lesson 28: Solidify fluency with Grade 5 skills.</p>
<p>M.5.7</p> <p>Use place value understanding to round multi-digit numbers, including decimals, to any place.</p>	<p>G4 M1 Topic C: Rounding Multi-Digit Whole Numbers</p> <p>G5 M1 Topic C: Place Value and Rounding Decimal Fractions</p> <p>G5 M6 Lesson 28: Solidify fluency with Grade 5 skills.</p>

Number and Operations in Base Ten

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

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<p>M.5.8</p> <p>Fluently (efficiently and accurately) multiply multi-digit whole numbers using the standard algorithm.</p>	<p>G5 M2 Lesson 5: Connect visual models and the distributive property to partial products of the standard algorithm without renaming.</p> <p>G5 M2 Lesson 6: Connect area models and the distributive property to partial products of the standard algorithm with renaming.</p> <p>G5 M2 Lesson 7: Connect area models and the distributive property to partial products of the standard algorithm with renaming.</p> <p>G5 M2 Lesson 8: Fluently multiply multi-digit whole numbers using the standard algorithm and using estimation to check for reasonableness of the product.</p> <p>G5 M2 Lesson 9: Fluently multiply multi-digit whole numbers using the standard algorithm to solve multi-step word problems.</p> <p>G5 M2 Lesson 13: Use whole number multiplication to express equivalent measurements.</p> <p>G5 M2 Lesson 15: Solve two-step word problems involving measurement conversions.</p> <p>G5 M6 Lesson 26: Solidify writing and interpreting numerical expressions.</p>
<p>M.5.9</p> <p>Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, area models, and/or partial quotients.</p>	<p>G5 M2 Topic E: Mental Strategies for Multi-Digit Whole Number Division</p> <p>G5 M2 Topic F: Partial Quotients and Multi-Digit Whole Number Division</p> <p>G5 M2 Lesson 28: Solve division word problems involving multi-digit division with group size unknown and the number of groups unknown.</p> <p>G5 M6 Lesson 26: Solidify writing and interpreting numerical expressions.</p>

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<p>M.5.10</p> <p>Add, subtract, multiply and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between related operations, relate the strategy to a written method and explain the reasoning used.</p>	<p>G5 M1 Topic D: Adding and Subtracting Decimals</p> <p>G5 M1 Topic E: Multiplying Decimals</p> <p>G5 M1 Topic F: Dividing Decimals</p> <p>G5 M2 Topic C: Decimal Multi-Digit Multiplication</p> <p>G5 M2 Topic D: Measurement Word Problems with Whole Number and Decimal Multiplication</p> <p>G5 M2 Topic G: Partial Quotients and Multi-Digit Decimal Division</p> <p>G5 M2 Topic H: Measurement Word Problems with Multi-Digit Division</p> <p>G5 M4 Lesson 17: Relate decimal and fraction multiplication.</p> <p>G5 M4 Lesson 18: Relate decimal and fraction multiplication.</p> <p>G5 M4 Lesson 29: Connect division by a unit fraction to division by 1 tenth and 1 hundredth.</p> <p>G5 M4 Lesson 30: Divide decimal dividends by non-unit decimal divisors.</p> <p>G5 M4 Lesson 31: Divide decimal dividends by non-unit decimal divisors.</p> <p>G5 M6 Lesson 26: Solidify writing and interpreting numerical expressions.</p> <p>G5 M6 Lesson 28: Solidify fluency with Grade 5 skills.</p>
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Number and Operations—Fractions

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

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<p>M.5.11</p> <p>Add and subtract fractions with unlike denominators by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators (e.g., $\frac{2}{3} + \frac{5}{4} = \frac{8}{12} + \frac{15}{12} = \frac{23}{12}$).</p>	<p>G4 M5 Lesson 20: Use visual models to add two fractions with related units using the denominators 2, 3, 4, 5, 6, 8, 10, and 12.</p> <p>G4 M5 Lesson 21: Use visual models to add two fractions with related units using the denominators 2, 3, 4, 5, 6, 8, 10, and 12.</p> <p>G5 M3 Lesson 3: Add fractions with unlike units using the strategy of creating equivalent fractions.</p> <p>G5 M3 Lesson 4: Add fractions with sums between 1 and 2.</p> <p>G5 M3 Lesson 5: Subtract fractions with unlike units using the strategy of creating equivalent fractions.</p> <p>G5 M3 Lesson 6: Subtract fractions from numbers between 1 and 2.</p> <p>G5 M3 Topic C: Making Like Units Numerically</p> <p>G5 M3 Lesson 14: Strategize to solve multi-term problems.</p> <p>G5 M6 Lesson 26: Solidify writing and interpreting numerical expressions.</p> <p>G5 M6 Lesson 27: Solidify writing and interpreting numerical expressions.</p>
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<p>M.5.12</p> <p>Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers (e.g., recognize an incorrect result $\frac{2}{5} + \frac{1}{2} = \frac{3}{7}$, by observing that $\frac{3}{7} < \frac{1}{2}$).</p>	<p>G4 M5 Lesson 29: Estimate sums and differences using benchmark numbers.</p> <p>G5 M3 Lesson 7: Solve two-step word problems.</p> <p>G5 M3 Lesson 9: Add fractions making like units numerically.</p> <p>G5 M3 Lesson 13: Use fraction benchmark numbers to assess reasonableness of addition and subtraction equations.</p> <p>G5 M3 Lesson 15: Solve multi-step word problems; assess reasonableness of solutions using benchmark numbers.</p> <p>G5 M3 Lesson 16: Explore part-to-whole relationships.</p> <p>G5 M6 Topic E: Multi-Step Word Problems</p>
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Number and Operations—Fractions

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

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<p>M.5.13</p> <p>Interpret a fraction as division of the numerator by the denominator ($\frac{a}{b} = a \div b$). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers by using visual fraction models or equations to represent the problem (e.g., interpret $\frac{3}{4}$ as the result of dividing 3 by 4, noting that $\frac{3}{4}$ multiplied by 4 equals 3 and that when 3 wholes are shared equally among 4 people each person has a share of size $\frac{3}{4}$).</p>	<p>G5 M4 Topic B: Fractions as Division</p> <p>G5 M6 Topic E: Multi-Step Word Problems</p> <p>G5 M6 Lesson 28: Solidify fluency with Grade 5 skills.</p>
<p>M.5.14</p> <p>Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.</p>	<p><i>This standard is fully addressed by the lessons aligned to its subsections.</i></p>

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<p>M.5.14.a</p> <p>Interpret the product $\left(\frac{a}{b}\right) \times q$ as a number of parts of a partition of q into b equal parts; equivalently, as the result of a sequence of operations $a \times q \div b$ (e.g., use a visual fraction model to show $\left(\frac{2}{3}\right) \times 4 = \frac{8}{3}$ and create a story context for this equation; do the same with $\left(\frac{2}{3}\right) \times \left(\frac{4}{5}\right) = \frac{8}{15}$).</p>	<p>G5 M4 Lesson 6: Relate fractions as division to fraction of a set.</p> <p>G5 M4 Lesson 7: Multiply any whole number by a fraction using tape diagrams.</p> <p>G5 M4 Lesson 8: Relate a fraction of a set to the repeated addition interpretation of fraction multiplication.</p> <p>G5 M4 Lesson 10: Compare and evaluate expressions with parentheses.</p> <p>G5 M4 Lesson 13: Multiply unit fractions by unit fractions.</p> <p>G5 M4 Lesson 14: Multiply unit fractions by non-unit fractions.</p> <p>G5 M4 Lesson 15: Multiply non-unit fractions by non-unit fractions.</p> <p>G5 M4 Lesson 17: Relate decimal and fraction multiplication.</p> <p>G5 M4 Lesson 18: Relate decimal and fraction multiplication.</p> <p>G5 M4 Lesson 33: Create story contexts for numerical expressions and tape diagrams, and solve word problems.</p> <p>G5 M6 Lesson 26: Solidify writing and interpreting numerical expressions.</p> <p>G5 M6 Lesson 27: Solidify writing and interpreting numerical expressions.</p> <p>G5 M6 Lesson 28: Solidify fluency with Grade 5 skills.</p>
<p>M.5.14.b</p> <p>Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles and represent fraction products as rectangular areas.</p>	<p>G5 M5 Lesson 10: Find the area of rectangles with whole-by-mixed and whole-by-fractional number side lengths by tiling, record by drawing, and relate to fraction multiplication.</p> <p>G5 M5 Lesson 11: Find the area of rectangles with mixed-by-mixed and fraction-by-fraction side lengths by tiling, record by drawing, and relate to fraction multiplication.</p> <p>G5 M5 Lesson 12: Measure to find the area of rectangles with fractional side lengths.</p> <p>G5 M5 Lesson 13: Multiply mixed number factors, and relate to the distributive property and the area model.</p>

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<p>M.5.15</p> <p>Interpret multiplication as scaling (resizing), by:</p>	<p><i>This standard is fully addressed by the lessons aligned to its subsections.</i></p>
<p>M.5.15.a</p> <p>Comparing the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication.</p>	<p>G5 M4 Lesson 21: Explain the size of the product, and relate fraction and decimal equivalence to multiplying a fraction by 1.</p> <p>G5 M4 Lesson 22: Compare the size of the product to the size of the factors.</p> <p>G5 M4 Lesson 23: Compare the size of the product to the size of the factors.</p>
<p>M.5.15.b</p> <p>Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case); explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number; and relating the principle of fraction equivalence $\frac{a}{b} = \frac{n \times a}{n \times b}$ to the effect of multiplying $\frac{a}{b}$ by 1.</p>	<p>G5 M4 Lesson 21: Explain the size of the product, and relate fraction and decimal equivalence to multiplying a fraction by 1.</p> <p>G5 M4 Lesson 22: Compare the size of the product to the size of the factors.</p> <p>G5 M4 Lesson 23: Compare the size of the product to the size of the factors.</p>

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<p>M.5.16</p> <p>Solve real-world problems involving multiplication of fractions and mixed numbers by using visual fraction models or equations to represent the problem.</p>	<p>G5 M4 Lesson 11: Solve and create fraction word problems involving addition, subtraction, and multiplication.</p> <p>G5 M4 Lesson 12: Solve and create fraction word problems involving addition, subtraction, and multiplication.</p> <p>G5 M4 Lesson 16: Solve word problems using tape diagrams and fraction-by-fraction multiplication.</p> <p>G5 M4 Lesson 24: Solve word problems using fraction and decimal multiplication.</p> <p>G5 M5 Lesson 14: Solve real-world problems involving area of figures with fractional side lengths using visual models and/or equations.</p> <p>G5 M5 Lesson 15: Solve real-world problems involving area of figures with fractional side lengths using visual models and/or equations.</p> <p>G5 M6 Topic E: Multi-Step Word Problems</p>
<p>M.5.17</p> <p>Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions.</p>	<p><i>This standard is fully addressed by the lessons aligned to its subsections.</i></p>
<p>M.5.17.a</p> <p>Interpret division of a unit fraction by a non-zero whole number and compute such quotients (e.g., create a story context for $(\frac{1}{3}) \div 4$ and use a visual fraction model to show the quotient; use the relationship between multiplication and division to explain that $(\frac{1}{3}) \div 4 = \frac{1}{12}$ because $(\frac{1}{12}) \times 4 = \frac{1}{3}$).</p>	<p>G5 M4 Lesson 26: Divide a unit fraction by a whole number.</p>

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<p>M.5.17.b</p> <p>Interpret division of a whole number by a unit fraction and compute such quotients (e.g., create a story context for $4 \div \left(\frac{1}{5}\right)$ and use a visual fraction model to show the quotient; use the relationship between multiplication and division to explain that $4 \div \left(\frac{1}{5}\right) = 20$ because $20 \times \left(\frac{1}{5}\right) = 4$).</p>	<p>G5 M4 Lesson 25: Divide a whole number by a unit fraction.</p> <p>G5 M6 Lesson 28: Solidify fluency with Grade 5 skills.</p>
<p>M.5.17.c</p> <p>Solve real-world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions by using visual fraction models and equations to represent the problem (e.g., How much chocolate will each person get if 3 people share $\frac{1}{2}$ lb. of chocolate equally? How many $\frac{1}{3}$-cup servings are in 2 cups of raisins?).</p>	<p>G5 M4 Lesson 27: Solve problems involving fraction division.</p> <p>G5 M4 Lesson 28: Write equations and word problems corresponding to tape and number line diagrams.</p> <p>G5 M4 Lesson 33: Create story contexts for numerical expressions and tape diagrams, and solve word problems.</p> <p>G5 M6 Topic E: Multi-Step Word Problems</p>

Measurement and Data

Convert like measurement units within a given measurement system.

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<p>M.5.18</p> <p>Convert among different-sized standard measurement units within a given measurement system, both customary and metric, (e.g., convert 5 cm to 0.05 m) and use these conversions in solving multi-step, real-world problems.</p>	<p>G5 M1 Lesson 4: Use exponents to denote powers of 10 with application to metric conversions.</p> <p>G5 M2 Topic D: Measurement Word Problems with Whole Number and Decimal Multiplication</p> <p>G5 M4 Lesson 8: Relate a fraction of a set to the repeated addition interpretation of fraction multiplication.</p> <p>G5 M4 Lesson 9: Find a fraction of a measurement, and solve word problems.</p> <p>G5 M4 Lesson 19: Convert measures involving whole numbers, and solve multi-step word problems.</p> <p>G5 M4 Lesson 20: Convert mixed unit measurements, and solve multi-step word problems.</p> <p>G5 M6 Lesson 21: Make sense of complex, multi-step problems, and persevere in solving them. Share and critique peer solutions.</p> <p>G5 M6 Lesson 28: Solidify fluency with Grade 5 skills.</p>
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Measurement and Data

Represent and interpret data.

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<p>M.5.19</p> <p>Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}, \frac{1}{4}, \frac{1}{8}$). Use operations on fractions for this grade to solve problems involving information presented in line plots (e.g., given different measurements of liquid in identical beakers, find the amount of liquid each beaker would contain if the total amount in all the beakers were redistributed equally).</p>	<p>G5 M4 Topic A: Line Plots of Fraction Measurements</p>
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Measurement and Data

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

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<p>M.5.20</p> <p>Recognize volume as an attribute of solid figures and understand concepts of volume measurement.</p>	<p><i>This standard is fully addressed by the lessons aligned to its subsections.</i></p>
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<p>M.5.20.a</p> <p>A cube with side length 1 unit, called a “unit cube,” is said to have “one cubic unit” of volume and can be used to measure volume.</p>	<p>G5 M5 Lesson 1: Explore volume by building with and counting unit cubes.</p> <p>G5 M6 Lesson 29: Solidify the vocabulary of geometry.</p> <p>G5 M6 Lesson 30: Solidify the vocabulary of geometry.</p>
<p>M.5.20.b</p> <p>A solid figure which can be packed without gaps or overlaps using b unit cubes is said to have a volume of b cubic units.</p>	<p>G5 M5 Lesson 2: Find the volume of a right rectangular prism by packing with cubic units and counting.</p> <p>G5 M6 Lesson 29: Solidify the vocabulary of geometry.</p> <p>G5 M6 Lesson 30: Solidify the vocabulary of geometry.</p>
<p>M.5.21</p> <p>Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units.</p>	<p>G5 M5 Topic A: Concepts of Volume</p>
<p>M.5.22</p> <p>Relate volume to the operations of multiplication and addition and solve real-world and mathematical problems involving volume.</p>	<p><i>This standard is fully addressed by the lessons aligned to its subsections.</i></p>

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<p>M.5.22.a</p> <p>Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent threefold whole-number products as volumes (e.g., to represent the associative property of multiplication).</p>	<p>G5 M5 Lesson 3: Compose and decompose right rectangular prisms using layers.</p> <p>G5 M5 Lesson 4: Use multiplication to calculate volume.</p> <p>G5 M5 Lesson 5: Use multiplication to connect volume as packing with volume as filling.</p>
<p>M.5.22.b</p> <p>Apply the formulas $V = l \times w \times h$ and $V = B \times h$ for rectangular prisms to find volumes of right rectangular prisms with whole number edge lengths in the context of solving real-world and mathematical problems.</p>	<p>G5 M5 Lesson 7: Solve word problems involving the volume of rectangular prisms with whole number edge lengths.</p> <p>G5 M6 Lesson 28: Solidify fluency with Grade 5 skills.</p> <p>G5 M6 Lesson 33: Design and construct boxes to house materials for summer use.</p> <p>G5 M6 Lesson 34: Design and construct boxes to house materials for summer use.</p>
<p>M.5.22.c</p> <p>Recognize volume as additive and find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real-world problems.</p>	<p>G5 M5 Lesson 6: Find the total volume of solid figures composed of two non-overlapping rectangular prisms.</p> <p>G5 M5 Lesson 8: Apply concepts and formulas of volume to design a sculpture using rectangular prisms within given parameters.</p> <p>G5 M5 Lesson 9: Apply concepts and formulas of volume to design a sculpture using rectangular prisms within given parameters.</p>

Geometry

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

West Virginia College- and Career-Readiness Standards for Mathematics

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<p>M.5.23</p> <p>Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines, the origin, arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of the horizontal axis (x-axis) and the second number indicates how far to travel in the direction of the vertical axis (y-axis), with the convention that the names of the two axes and the coordinates correspond (e.g., x-axis and x-coordinate, y-axis and y-coordinate).</p>	<p>G5 M6 Topic A: Coordinate Systems</p> <p>G5 M6 Lesson 7: Plot points, use them to draw lines in the plane, and describe patterns within the coordinate pairs.</p> <p>G5 M6 Lesson 14: Construct parallel line segments, and analyze relationships of the coordinate pairs.</p> <p>G5 M6 Lesson 16: Construct perpendicular line segments, and analyze relationships of the coordinate pairs.</p>
<p>M.5.24</p> <p>Represent real-world mathematical problems by graphing points in the first quadrant of the coordinate plane and interpret coordinate values of points in the context of the situation.</p>	<p>G5 M6 Lesson 14: Construct parallel line segments, and analyze relationships of the coordinate pairs.</p> <p>G5 M6 Lesson 16: Construct perpendicular line segments, and analyze relationships of the coordinate pairs.</p> <p>G5 M6 Lesson 19: Plot data on line graphs and analyze trends.</p> <p>G5 M6 Lesson 20: Use coordinate systems to solve real world problems.</p>

Geometry

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

West Virginia College- and Career-Readiness Standards for Mathematics

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<p>M.5.25</p> <p>Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category (e.g., all rectangles have four right angles and squares are rectangles, so all squares have four right angles).</p>	<p>G5 M5 Lesson 16: Draw trapezoids to clarify their attributes, and define trapezoids based on those attributes.</p> <p>G5 M5 Lesson 17: Draw parallelograms to clarify their attributes, and define parallelograms based on those attributes.</p> <p>G5 M5 Lesson 18: Draw rectangles and rhombuses to clarify their attributes, and define rectangles and rhombuses based on those attributes.</p> <p>G5 M5 Lesson 19: Draw kites and squares to clarify their attributes, and define kites and squares based on those attributes.</p> <p>G5 M6 Lesson 29: Solidify the vocabulary of geometry.</p> <p>G5 M6 Lesson 30: Solidify the vocabulary of geometry.</p>
<p>M.5.26</p> <p>Classify two-dimensional figures in a hierarchy based on properties.</p>	<p>G5 M5 Lesson 20: Classify two-dimensional figures in a hierarchy based on properties.</p> <p>G5 M5 Lesson 21: Draw and identify varied two-dimensional figures from given attributes.</p>