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## Grade 8 | West Virginia College- and Career-Readiness Standards for 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* aha 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 high-quality instruction that meets the individual needs of their students. Differentiation suggestions, slide decks, digital interactives, and multiple forms of assessment are just a few of the resources built 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.

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

## The Number System

Know that there are numbers that are not rational and approximate them by rational numbers.

### West Virginia College- and Career-Readiness Standards for Mathematics

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

<p><b>M.8.1</b></p> <p>Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually and convert a decimal expansion which repeats eventually into a rational number.</p>	<p>8 M1 Lesson 22: Familiar and Not So Familiar Numbers</p> <p>8 M4 Lesson 5: An Interesting Application of Linear Equations, Part 1</p> <p>8 M4 Lesson 6: An Interesting Application of Linear Equations, Part 2</p>
<p><b>M.8.2</b></p> <p>Apply approximations and properties of rational and irrational numbers to:</p>	<p><i>Supplemental material is necessary to address this standard.</i></p>
<p><b>M.8.2.a</b></p> <p>Compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions such as <math>\pi^2</math> (e.g., by truncating the decimal expansion of <math>\sqrt{2}</math>, show that <math>\sqrt{2}</math> is between 1 and 2, then between 1.4 and 1.5, and explain how to continue on to get better approximations).</p>	<p>8 M1 Lesson 21: Approximating Values of Roots and <math>\pi^2</math></p> <p>8 M1 Lesson 23: Ordering Irrational Numbers</p>

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<p><b>M.8.2.b</b></p> <p>Explain why the sum or product of two rational numbers is rational; that the sum of a rational number and an irrational number is irrational; and that the product of a nonzero rational number and an irrational number is irrational.</p>	<p>A1 M4 Lesson 13: Using Square Roots to Solve Quadratic Equations</p> <p>A1 M4 Lesson 17: Rewriting Square Roots</p>
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**Expressions and Equations****Work with radicals and integer exponents.****West Virginia College- and Career-Readiness Standards for Mathematics****Aligned Components of *Eureka Math*<sup>2</sup>**

<p><b>M.8.3</b></p> <p>Know and apply the properties of integer exponents to generate equivalent numerical expressions (e.g., <math>3^2 \times 3^{-5} = 3^{-3} = \frac{1}{3^3} = \frac{1}{27}</math>).</p>	<p>8 M1 Lesson 5: Products of Exponential Expressions with Whole-Number Exponents</p> <p>8 M1 Lesson 6: More Properties of Exponents</p> <p>8 M1 Lesson 7: Making Sense of the Exponent of 0</p> <p>8 M1 Lesson 8: Making Sense of Integer Exponents</p> <p>8 M1 Lesson 9: Writing Equivalent Expressions</p> <p>8 M1 Lesson 10: Evaluating Numerical Expressions by Using Properties of Exponents</p>
<p><b>M.8.4</b></p> <p>Use square root and cube root symbols to represent solutions to equations of the form <math>x^2 = p</math> and <math>x^3 = p</math>, where <math>p</math> is a positive rational number. Evaluate square roots of small perfect squares and cube roots of small perfect cubes. Know that <math>\sqrt{2}</math> is irrational.</p>	<p>8 M1 Lesson 16: Perfect Squares and Perfect Cubes</p> <p>8 M1 Lesson 17: Solving Equations with Squares and Cubes</p> <p>8 M1 Lesson 20: Square Roots</p> <p>8 M1 Lesson 22: Familiar and Not So Familiar Numbers</p> <p>8 M1 Lesson 24: Revisiting Equations with Squares and Cubes</p>

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<p><b>M.8.5</b></p> <p>Use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other (e.g., estimate the population of the United States as <math>3 \times 10^8</math> and the population of the world as <math>7 \times 10^9</math>; determine that the world population is more than 20 times larger).</p>	<p>8 M1 Lesson 1: Large and Small Positive Numbers</p> <p>8 M1 Lesson 2: Comparing Large Numbers</p> <p>8 M1 Lesson 3: Time to Be More Precise—Scientific Notation</p> <p>8 M1 Lesson 7: Making Sense of the Exponent of 0</p> <p>8 M1 Lesson 11: Small Positive Numbers in Scientific Notation</p>
<p><b>M.8.6</b></p> <p>Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities (e.g., use millimeters per year for seafloor spreading). Interpret scientific notation that has been generated by technology.</p>	<p>8 M1 Lesson 2: Comparing Large Numbers</p> <p>8 M1 Lesson 4: Adding and Subtracting Numbers Written in Scientific Notation</p> <p>8 M1 Lesson 12: Operations with Numbers in Scientific Notation</p> <p>8 M1 Lesson 13: Applications with Numbers in Scientific Notation</p> <p>8 M1 Lesson 14: Choosing Units of Measurement</p> <p>8 M1 Lesson 15: Get to the Point</p>

## Expressions and Equations

Understand the connections between proportional relationships, lines, and linear equations.

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<p><b>M.8.7</b></p> <p>Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways (e.g., compare a distance-time graph to a distance-time equation to determine which of two moving objects has greater speed).</p>	<p>8 M4 Lesson 15: Comparing Proportional Relationships</p> <p>8 M4 Lesson 16: Proportional Relationships and Slope</p>
<p><b>M.8.8</b></p> <p>Use similar triangles to explain why the slope <math>m</math> is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation <math>y = mx</math> for a line through the origin and the equation <math>y = mx + b</math> for a line intercepting the vertical axis at <math>b</math>.</p>	<p>8 M3 Lesson 17: Similar Triangles on a Line</p> <p>8 M4 Lesson 16: Proportional Relationships and Slope</p> <p>8 M4 Lesson 17: Slopes of Rising Lines</p> <p>8 M4 Lesson 18: Slopes of Falling Lines</p> <p>8 M4 Lesson 19: Using Coordinates to Find Slope</p> <p>8 M4 Lesson 20: Slope-Intercept Form of the Equation of a Line</p>

## Expressions and Equations

Analyze and solve linear equations, pairs of simultaneous linear equations, and linear inequalities in one variable.

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

<p><b>M.8.9</b></p> <p>Analyze and solve real-world and mathematical problems utilizing linear equations in one variable.</p>	<p>8 M4 Lesson 2: Solving Linear Equations</p> <p>8 M4 Lesson 3: Solving Linear Equations with Rational Coefficients</p> <p>8 M4 Lesson 4: Using Linear Equations to Solve Problems</p> <p>8 M4 Lesson 10: Using Linear Equations to Solve Real-World Problems</p> <p>8 M4 Lesson 11: Planning a Trip</p>
<p><b>M.8.9.a</b></p> <p>Give examples of linear equations in one variable with one solution, infinitely many solutions or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler forms, until an equivalent equation of the form <math>x = a</math>, <math>a = a</math>, or <math>a = b</math> results (where <math>a</math> and <math>b</math> are different numbers).</p>	<p>8 M4 Lesson 7: Linear Equations with More Than One Solution</p> <p>8 M4 Lesson 8: Another Possible Number of Solutions</p> <p>8 M4 Lesson 9: Writing Linear Equations</p> <p>8 M4 Lesson 10: Using Linear Equations to Solve Real-World Problems</p>
<p><b>M.8.9.b</b></p> <p>Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and combining like terms.</p>	<p>8 M4 Lesson 1: Equations</p> <p>8 M4 Lesson 2: Solving Linear Equations</p> <p>8 M4 Lesson 3: Solving Linear Equations with Rational Coefficients</p> <p>8 M4 Lesson 5: An Interesting Application of Linear Equations, Part 1</p> <p>8 M4 Lesson 6: An Interesting Application of Linear Equations, Part 2</p> <p>8 M4 Lesson 7: Linear Equations with More Than One Solution</p> <p>8 M4 Lesson 8: Another Possible Number of Solutions</p> <p>8 M4 Lesson 10: Using Linear Equations to Solve Real-World Problems</p> <p>8 M4 Lesson 11: Planning a Trip</p>

**West Virginia College- and Career-Readiness Standards for Mathematics****Aligned Components of *Eureka Math*<sup>2</sup>**

<p><b>M.8.10</b></p> <p>Analyze and solve pairs of simultaneous linear equations by graphing, limiting to integer solutions. Understand that solutions to a system of two linear equations in two variables correspond to points of intersection of their graphs, because points of intersection satisfy both equations simultaneously.</p>	<p>8 M5 Lesson 1: Solving Problems with Equations and Their Graphs</p> <p>8 M5 Lesson 2: Introduction to Systems of Linear Equations</p> <p>8 M5 Lesson 3: Identifying Solutions</p> <p>8 M5 Lesson 4: More Than One Solution</p> <p>8 M5 Lesson 5: Estimating Solutions</p> <p>8 M5 Lesson 7: The Substitution Method</p> <p>8 M5 Lesson 10: Choosing a Solution Method</p> <p>8 M5 Lesson 14: Back to the Coordinate Plane</p>
<p><b>M.8.11</b></p> <p>Explain each step in solving a linear equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method.</p>	<p>8 M4 Lesson 1: Equations</p> <p>8 M4 Lesson 2: Solving Linear Equations</p> <p>8 M4 Lesson 3: Solving Linear Equations with Rational Coefficients</p> <p>8 M4 Lesson 5: An Interesting Application of Linear Equations, Part 1</p> <p>8 M4 Lesson 6: An Interesting Application of Linear Equations, Part 2</p> <p>8 M4 Lesson 7: Linear Equations with More Than One Solution</p> <p>8 M4 Lesson 8: Another Possible Number of Solutions</p> <p>8 M4 Lesson 10: Using Linear Equations to Solve Real-World Problems</p> <p>8 M4 Lesson 11: Planning a Trip</p> <p>A1 M1 Lesson 9: Solving Linear Equations in One Variable</p> <p>A1 M1 Lesson 10: Some Potential Dangers When Solving Equations</p> <p>A1 M1 Lesson 11: Writing and Solving Equations in One Variable</p>



### West Virginia College- and Career-Readiness Standards for Mathematics

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

<p><b>M.8.12</b></p> <p>Analyze and solve real-world mathematical problems utilizing linear inequalities in one variable. Solve linear inequalities with rational number coefficients, including inequalities whose solutions require expanding expressions using the distributive property and combining like terms.</p>	<p>7 M3 Lesson 18: Understanding Inequalities and Their Solutions</p> <p>7 M3 Lesson 19: Using Equations to Solve Inequalities</p> <p>7 M3 Lesson 20: Preserving and Reversing</p> <p>7 M3 Lesson 21: Solving Two-Step Inequalities</p> <p>7 M3 Lesson 22: Solving Problems Involving Inequalities</p> <p>7 M3 Lesson 23: Inequalities vs. Equations</p> <p>8 M4 Lesson 1: Equations</p> <p>8 M4 Lesson 2: Solving Linear Equations</p> <p>8 M4 Lesson 3: Solving Linear Equations with Rational Coefficients</p> <p>8 M4 Lesson 5: An Interesting Application of Linear Equations, Part 1</p> <p>8 M4 Lesson 6: An Interesting Application of Linear Equations, Part 2</p> <p>8 M4 Lesson 7: Linear Equations with More Than One Solution</p> <p>8 M4 Lesson 8: Another Possible Number of Solutions</p> <p>8 M4 Lesson 10: Using Linear Equations to Solve Real-World Problems</p> <p>8 M4 Lesson 11: Planning a Trip</p>
<p><b>M.8.13</b></p> <p>Rearrange formulas to isolate a given variable, using the same reasoning as in solving equations (e.g., rearrange Ohm’s law <math>V = IR</math> to isolate resistance <math>R</math>).</p>	<p><i>Supplemental material is necessary to address this standard.</i></p>

## Functions

Define, evaluate, and compare functions.

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<p><b>M.8.14</b></p> <p>Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output.</p>	<p>8 M6 Lesson 1: Motion and Speed</p> <p>8 M6 Lesson 2: Definition of a Function</p> <p>8 M6 Lesson 4: More Examples of Functions</p> <p>8 M6 Lesson 5: Graphs of Functions and Equations</p>
<p><b>M.8.15</b></p> <p>Compare properties of two functions each represented in a different way, such as algebraically, graphically, numerically in tables, or by verbal descriptions (e.g., given a linear function represented by a table of values and a linear function represented by an algebraic expression, determine which function has the greater rate of change).</p>	<p>8 M6 Lesson 7: Interpreting Rate of Change and Initial Value</p> <p>8 M6 Lesson 8: Comparing Functions</p>
<p><b>M.8.16</b></p> <p>Interpret the equation <math>y = mx + b</math> as defining a linear function, whose graph is a straight line; give examples of functions that are not linear (e.g., the function <math>A = s^2</math> giving the area of a square as a function of its side length is not linear because its graph contains the points (1, 1), (2, 4) and (3, 9), which are not on a straight line).</p>	<p>8 M6 Lesson 3: Linear Functions and Proportionality</p> <p>8 M6 Lesson 6: Linear Functions and Rate of Change</p> <p>8 M6 Lesson 10: Graphs of Nonlinear Functions</p>

## Functions

Use functions to model relationships between quantities.

### West Virginia College- and Career-Readiness Standards for Mathematics

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

<p><b>M.8.17</b></p> <p>Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two <math>(x, y)</math> values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.</p>	<p>8 M6 Lesson 6: Linear Functions and Rate of Change</p> <p>8 M6 Lesson 7: Interpreting Rate of Change and Initial Value</p> <p>8 M6 Lesson 25: Applications of Volume</p>
<p><b>M.8.18</b></p> <p>Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally.</p>	<p>8 M6 Lesson 9: Increasing and Decreasing Functions</p> <p>8 M6 Lesson 10: Graphs of Nonlinear Functions</p>

## Geometry

Understand congruence and similarity using physical models, transparencies, or geometry software.

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

<p><b>M.8.19</b></p> <p>Verify experimentally the properties of rotations, reflections and translations:</p>	<p>8 M2 Lesson 1: Motions of the Plane</p> <p>8 M2 Lesson 2: Translations</p> <p>8 M2 Lesson 3: Reflections</p> <p>8 M2 Lesson 5: Rotations</p> <p>8 M2 Lesson 7: Working Backward</p> <p>8 M2 Lesson 8: Sequencing the Rigid Motions</p>
<p><b>M.8.19.a</b></p> <p>Lines are taken to lines, and line segments to line segments of the same length.</p>	<p>8 M2 Lesson 1: Motions of the Plane</p> <p>8 M2 Lesson 2: Translations</p> <p>8 M2 Lesson 3: Reflections</p> <p>8 M2 Lesson 5: Rotations</p> <p>8 M2 Lesson 7: Working Backward</p> <p>8 M2 Lesson 8: Sequencing the Rigid Motions</p>
<p><b>M.8.19.b</b></p> <p>Angles are taken to angles of the same measure.</p>	<p>8 M2 Lesson 1: Motions of the Plane</p> <p>8 M2 Lesson 2: Translations</p> <p>8 M2 Lesson 3: Reflections</p> <p>8 M2 Lesson 5: Rotations</p> <p>8 M2 Lesson 7: Working Backward</p> <p>8 M2 Lesson 8: Sequencing the Rigid Motions</p>

**West Virginia College- and Career-  
Readiness Standards for Mathematics**

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

<p><b>M.8.19.c</b></p> <p>Parallel lines are taken to parallel lines.</p>	<p>8 M2 Lesson 1: Motions of the Plane</p> <p>8 M2 Lesson 2: Translations</p> <p>8 M2 Lesson 3: Reflections</p> <p>8 M2 Lesson 5: Rotations</p> <p>8 M2 Lesson 7: Working Backward</p> <p>8 M2 Lesson 8: Sequencing the Rigid Motions</p>
<p><b>M.8.20</b></p> <p>Understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections and translations; given two congruent figures, describe a sequence that exhibits the congruence between them.</p>	<p>8 M2 Lesson 7: Working Backward</p> <p>8 M2 Lesson 8: Sequencing the Rigid Motions</p> <p>8 M2 Lesson 9: Ordering Sequences of Rigid Motions</p> <p>8 M2 Lesson 10: Congruent Figures</p> <p>8 M2 Lesson 11: Showing Figures Are Congruent</p> <p>8 M2 Lesson 12: Lines Cut by a Transversal</p>
<p><b>M.8.21</b></p> <p>Describe the effect of dilations, translations, rotations and reflections on two-dimensional figures using coordinates.</p>	<p>8 M2 Lesson 4: Translations and Reflections on the Coordinate Plane</p> <p>8 M2 Lesson 6: Rotations on the Coordinate Plane</p> <p>8 M2 Lesson 9: Ordering Sequences of Rigid Motions</p> <p>8 M3 Lesson 1: Exploring Dilations</p> <p>8 M3 Lesson 2: Enlargements</p> <p>8 M3 Lesson 3: Reductions and More Enlargements</p> <p>8 M3 Lesson 4: Using Lined Paper to Explore Dilations</p> <p>8 M3 Lesson 5: Figures and Dilations</p> <p>8 M3 Lesson 6: The Shadowy Hand</p> <p>8 M3 Lesson 7: Dilations on a Grid</p>

**West Virginia College- and Career-  
Readiness Standards for Mathematics**

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

<p><b>M.8.21 <i>continued</i></b></p>	<p>8 M3 Lesson 8: Dilations on the Coordinate Plane</p> <p>8 M3 Lesson 9: Describing Dilations</p> <p>8 M3 Lesson 10: Sequencing Transformations</p> <p>8 M3 Lesson 16: Similar Right Triangles</p>
<p><b>M.8.22</b></p> <p>Understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations and dilations; given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them.</p>	<p>8 M3 Lesson 11: Similar Figures</p> <p>8 M3 Lesson 12: Exploring Angles in Similar Triangles</p> <p>8 M3 Lesson 13: Similar Triangles</p> <p>8 M3 Lesson 17: Similar Triangles on a Line</p>
<p><b>M.8.23</b></p> <p>Use informal arguments to establish facts about the angle sum and exterior angle of triangles, about the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles (e.g., arrange three copies of the same triangle so that the sum of the three angles appears to form a line; give an argument in terms of transversals why this is so).</p>	<p>8 M2 Lesson 12: Lines Cut by a Transversal</p> <p>8 M2 Lesson 13: Angle Sum of a Triangle</p> <p>8 M2 Lesson 14: Showing Lines Are Parallel</p> <p>8 M2 Lesson 15: Exterior Angles of Triangles</p> <p>8 M2 Lesson 16: Find Unknown Angle Measures</p> <p>8 M3 Lesson 12: Exploring Angles in Similar Triangles</p> <p>8 M3 Lesson 13: Similar Triangles</p> <p>8 M3 Lesson 14: Using Similar Figures to Find Unknown Side Lengths</p> <p>8 M3 Lesson 15: Applications of Similar Figures</p> <p>8 M3 Lesson 16: Similar Right Triangles</p>

## Geometry

### Understand and apply the Pythagorean Theorem.

#### West Virginia College- and Career-Readiness Standards for Mathematics

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

<p><b>M.8.24</b></p> <p>Explain a proof of the Pythagorean Theorem and its converse.</p>	<p>8 M2 Lesson 17: Proving the Pythagorean Theorem</p> <p>8 M2 Lesson 18: Proving the Converse of the Pythagorean Theorem</p> <p>8 M2 Lesson 19: Using the Pythagorean Theorem and Its Converse</p>
<p><b>M.8.25</b></p> <p>Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions.</p>	<p>8 M1 Lesson 18: The Pythagorean Theorem</p> <p>8 M1 Lesson 19: Using the Pythagorean Theorem</p> <p>8 M1 Lesson 20: Square Roots</p> <p>8 M2 Lesson 19: Using the Pythagorean Theorem and Its Converse</p> <p>8 M2 Lesson 21: Applying the Pythagorean Theorem</p> <p>8 M2 Lesson 22: On the Right Path</p> <p>8 M3 Lesson 16: Similar Right Triangles</p>
<p><b>M.8.26</b></p> <p>Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.</p>	<p>8 M2 Lesson 20: Distance in the Coordinate Plane</p> <p>8 M2 Lesson 22: On the Right Path</p>

## Geometry

Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres.

### West Virginia College- and Career-Readiness Standards for Mathematics

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

<p><b>M.8.27</b></p> <p>Know the formulas for the volumes of cones, cylinders and spheres and use them to solve real-world and mathematical problems.</p>	<p>8 M6 Lesson 21: Volumes of Prisms and Pyramids</p> <p>8 M6 Lesson 22: Volume of Cylinders</p> <p>8 M6 Lesson 23: Volume of Cones</p> <p>8 M6 Lesson 24: Volume of Spheres</p> <p>8 M6 Lesson 25: Applications of Volume</p>
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## Statistics and Probability

Investigate patterns of association in bivariate data.

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<p><b>M.8.28</b></p> <p>Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive or negative association, linear association and nonlinear association.</p>	<p>8 M6 Lesson 11: Scatter Plots</p> <p>8 M6 Lesson 12: Patterns in Scatter Plots</p>
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**West Virginia College- and Career-Readiness Standards for Mathematics****Aligned Components of *Eureka Math*<sup>2</sup>**

<p><b>M.8.29</b></p> <p>Know that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line and informally assess the model fit by judging the closeness of the data points to the line.</p>	<p>8 M6 Lesson 13: Informally Fitting a Line to Data</p> <p>8 M6 Lesson 15: Linear Models</p> <p>8 M6 Lesson 16: Using the Investigative Process</p> <p>8 M6 Lesson 17: Analyzing the Model</p>
<p><b>M.8.30</b></p> <p>Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept (e.g., in a linear model for a biology experiment, interpret a slope of 1.5 cm/hr as meaning that an additional hour of sunlight each day is associated with an additional 1.5 cm in mature plant height).</p>	<p>8 M6 Lesson 6: Linear Functions and Rate of Change</p> <p>8 M6 Lesson 7: Interpreting Rate of Change and Initial Value</p> <p>8 M6 Lesson 14: Determining an Equation of a Line Fit to Data</p> <p>8 M6 Lesson 15: Linear Models</p> <p>8 M6 Lesson 16: Using the Investigative Process</p> <p>8 M6 Lesson 17: Analyzing the Model</p>

**West Virginia College- and Career-Readiness Standards for Mathematics**

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

<p><b>M.8.31</b></p> <p>Understand that patterns of association can also be seen in bivariate categorical data by displaying frequencies and relative frequencies in a two-way table. Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects. Use relative frequencies calculated for rows or columns to describe possible association between the two variables (e.g., collect data from students in your class on whether or not they have a curfew on school nights and whether or not they have assigned chores at home; is there evidence that those who have a curfew also tend to have chores?).</p>	<p>8 M6 Lesson 18: Bivariate Categorical Data</p> <p>8 M6 Lesson 19: Association in Bivariate Categorical Data</p> <p>8 M6 Lesson 20: Analyzing Bivariate Categorical Data</p>
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