7–8 | West Virginia College- and Career-Readiness Standards for Mathematics Correlation to *Eureka Math²®*

When the original *Eureka Math®* curriculum was released, it quickly became the most widely used K–5 mathematics curriculum in the country. Now, the Great Minds® teacher–writers have created *Eureka Math²®*, 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 Math²* 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 Math² 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 Math² 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 Math²* 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 Math²* 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 *Eureka Math²*
MHM1. Make sense of problems and persevere in solving them.	Lessons in every module engage students in mathematical habits of mind. These are indicated in margin notes included with every lesson.
MHM2. Reason abstractly and quantitatively.	Lessons in every module engage students in mathematical habits of mind. These are indicated in margin notes included with every lesson.
MHM3. Construct viable arguments and critique the reasoning of others.	Lessons in every module engage students in mathematical habits of mind. These are indicated in margin notes included with every lesson.
MHM4. Model with mathematics.	Lessons in every module engage students in mathematical habits of mind. These are indicated in margin notes included with every lesson.
MHM5. Use appropriate tools strategically.	Lessons in every module engage students in mathematical habits of mind. These are indicated in margin notes included with every lesson.
MHM6. Attend to precision.	Lessons in every module engage students in mathematical habits of mind. These are indicated in margin notes included with every lesson.
MHM7. Look for and make use of structure.	Lessons in every module engage students in mathematical habits of mind. These are indicated in margin notes included with every lesson.
MHM8. Look for and express regularity in repeated reasoning.	Lessons in every module engage students in mathematical habits of mind. These are indicated in margin notes included with every lesson.

Ratios and Proportional Relationships

Analyze proportional relationships and use them to solve real-world and mathematical problems.

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math²*
M.7.1 Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units.	7–8 M2 Lesson 12: An Experiment with Ratios and Rates 7–8 M2 Lesson 13: Exploring Tables of Proportional Relationships
M.7.2 Recognize and represent proportional relationships between quantities.	*This standard is fully addressed by the lessons aligned to its subsections.*
M.7.2.a Decide whether two quantities are in a proportional relationship.	7–8 M2 Lesson 12: An Experiment with Ratios and Rates 7–8 M2 Lesson 13: Exploring Tables of Proportional Relationships 7–8 M2 Lesson 14: Exploring Graphs of Proportional Relationships 7–8 M2 Lesson 19: Proportional Reasoning and Percents
M.7.2.b Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams and verbal descriptions of proportional relationships.	7–8 M2 Lesson 14: Exploring Graphs of Proportional Relationships 7–8 M2 Lesson 15: Relating Representations of Proportional Relationships 7–8 M2 Lesson 16: Applying Proportional Reasoning

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math²*
M.7.2.c Represent proportional relationships by equations.	7–8 M2 Lesson 13: Exploring Tables of Proportional Relationships 7–8 M2 Lesson 15: Relating Representations of Proportional Relationships 7–8 M2 Lesson 16: Applying Proportional Reasoning 7–8 M2 Lesson 17: Using Proportional Reasoning to Solve Multi-Step Problems 7–8 M2 Lesson 18: Handstand Sprint 7–8 M2 Lesson 19: Proportional Reasoning and Percents
M.7.2.d Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation. Focus special attention on the points $(0, 0)$ and $(1, r)$ where r is the unit rate.	7–8 M2 Lesson 14: Exploring Graphs of Proportional Relationships 7–8 M2 Lesson 15: Relating Representations of Proportional Relationships
M.7.3 Use proportional relationships to solve multi-step ratio and percent problems.	7–8 M2 Lesson 16: Applying Proportional Reasoning 7–8 M2 Lesson 17: Using Proportional Reasoning to Solve Multi-Step Problems 7–8 M2 Lesson 18: Handstand Sprint 7–8 M2 Topic D: Percents and Proportional Relationships

The Number System

Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math²*
M.7.4 Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.	*This standard is fully addressed by the lessons aligned to its subsections.*
M.7.4.a Describe situations in which opposite quantities combine to make 0.	7–8 M1 Lesson 1: Adding Integers and Rational Numbers
M.7.4.b Understand $p + q$ as the number located a distance $\|q\|$ from p, in the positive or negative direction, depending on whether q is positive or negative. (i.e., To add "$p + q$" on the number line, start at "0" and move to "p" then move $\|q\|$ in the positive or negative direction depending on whether "q" is positive or negative.) Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts.	7–8 M1 Lesson 1: Adding Integers and Rational Numbers

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math²*
M.7.4.c Understand subtraction of rational numbers as adding the additive inverse, $p - q = p + (-q)$. Show that the distance between two rational numbers on the number line is the absolute value of their difference and apply this principle in real-world contexts.	7–8 M1 Lesson 3: Finding Distances to Find Differences 7–8 M1 Lesson 4: Subtracting Integers 7–8 M1 Lesson 5: Subtracting Rational Numbers
M.7.4.d Apply properties of operations as strategies to add and subtract rational numbers.	7–8 M1 Topic A: Add and Subtract Rational Numbers
M.7.5 Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.	*This standard is fully addressed by the lessons aligned to its subsections.*

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math²*
M.7.5.a Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as $(-1)(-1) = 1$ and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts.	7–8 M1 Lesson 6: Multiplying Integers and Rational Numbers 7–8 M1 Lesson 7: Exponential Expressions and Relating Multiplication to Division
M.7.5.b Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If p and q are integers, then $-\left(\frac{p}{q}\right) = \frac{-p}{q} = \frac{p}{-q}$. Interpret quotients of rational numbers by describing real-world contexts.	7–8 M1 Lesson 8: Dividing Integers and Rational Numbers
M.7.5.c Apply properties of operations as strategies to multiply and divide rational numbers.	7–8 M1 Topic B: Multiply and Divide Rational Numbers

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math²*
M.7.5.d Convert a rational number to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats.	7–8 M1 Lesson 9: Decimal Expansions of Rational Numbers
M.7.6 Solve real-world and mathematical problems involving the four operations with rational numbers.	7–8 M1 Lesson 1: Adding Integers and Rational Numbers 7–8 M1 Lesson 3: Finding Distances to Find Differences 7–8 M1 Lesson 4: Subtracting Integers 7–8 M1 Lesson 5: Subtracting Rational Numbers 7–8 M1 Lesson 6: Multiplying Integers and Rational Numbers 7–8 M1 Lesson 8: Dividing Integers and Rational Numbers

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 Math²*
M.8.1 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.	7–8 M1 Lesson 20: Using the Pythagorean Theorem 7–8 M1 Lesson 22: Rational and Irrational Numbers 7–8 M1 Lesson 23: Revisiting Equations with Squares and Cubes 7–8 M2 Lesson 6: Expressing Repeating Decimals as Fractions

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math²*
M.8.2 Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram and estimate the value of expressions such as π^2.	7–8 M1 Lesson 21: Approximating Values of Roots 7–8 M1 Lesson 22: Rational and Irrational Numbers

Expressions and Equations

Use properties of operations to generate equivalent expressions.

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math²*
M.7.7 Apply properties of operations as strategies to add, subtract, factor and expand linear expressions with rational coefficients.	7–8 M2 Lesson 2: Using Equivalent Expressions to Solve Equations
M.7.8 Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related.	7–8 M2 Lesson 2: Using Equivalent Expressions to Solve Equations 7–8 M2 Lesson 21: Discount, Markup, Sales Tax, and Tip 7–8 M2 Lesson 22: Percent Increase and Percent Decrease

Expressions and Equations

Solve real-life and mathematical problems using numerical and algebraic expressions and equations.

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math²*
M.7.9 Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies.	7–8 M2 Lesson 11: Using Linear Equations to Solve Real-World Problems 7–8 M2 Lesson 17: Using Proportional Reasoning to Solve Multi-Step Problems 7–8 M2 Lesson 18: Handstand Sprint 7–8 M2 Lesson 23: What Is the Best Deal?
M.7.10 Use variables to represent quantities in a real-world or mathematical problem and construct simple equations and inequalities to solve problems by reasoning about the quantities.	7–8 M2 Lesson 3: Solving Equations 7–8 M2 Lesson 4: Using Equations to Solve Inequalities 7–8 M2 Lesson 5: Solving Problems Involving Equations and Inequalities

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math²*
M.7.10.a Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p, q, and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach.	7–8 M2 Lesson 1: Finding Unknown Angle Measures 7–8 M2 Lesson 3: Solving Equations 7–8 M2 Lesson 5: Solving Problems Involving Equations and Inequalities
M.7.10.b Solve word problems leading to inequalities of the form $px + q > r$ or $px + q < r$, where p, q, and r are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem.	7–8 M2 Lesson 4: Using Equations to Solve Inequalities 7–8 M2 Lesson 5: Solving Problems Involving Equations and Inequalities

Expressions and Equations

Work with radicals and integer exponents.

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math²*
M.8.3 Know and apply the properties of integer exponents to generate equivalent numerical expressions.	7–8 M1 Lesson 11: Products of Exponential Expressions with Positive Whole-Number Exponents 7–8 M1 Lesson 12: More Properties of Exponents 7–8 M1 Lesson 13: Making Sense of Integer Exponents

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math²*
M.8.4 Use square root and cube root symbols to represent solutions to equations of the form $x^2 = p$ and $x^3 = p$, where p is a positive rational number. Evaluate square roots of small perfect squares and cube roots of small perfect cubes. Know that $\sqrt{2}$ is irrational.	7–8 M1 Lesson 18: Solving Equations with Squares and Cubes 7–8 M1 Lesson 19: The Pythagorean Theorem 7–8 M1 Lesson 20: Using the Pythagorean Theorem 7–8 M1 Lesson 21: Approximating Values of Roots 7–8 M1 Lesson 23: Revisiting Equations with Squares and Cubes
M.8.5 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.	7–8 M1 Lesson 10: Large and Small Positive Numbers 7–8 M1 Lesson 14: Writing Very Large and Very Small Numbers in Scientific Notation 7–8 M1 Lesson 15: Operations with Numbers Written in Scientific Notation 7–8 M1 Lesson 16: Applications with Numbers Written in Scientific Notation 7–8 M1 Lesson 17: Get to the Point
M.8.6 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. Interpret scientific notation that has been generated by technology.	7–8 M1 Lesson 15: Operations with Numbers Written in Scientific Notation 7–8 M1 Lesson 16: Applications with Numbers Written in Scientific Notation 7–8 M1 Lesson 17: Get to the Point

Expressions and Equations

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

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math²*
M.8.7 Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways.	7–8 M4 Lesson 4: Comparing Proportional Relationships 7–8 M4 Lesson 5: Proportional Relationships and Slope
M.8.8 Use similar triangles to explain why the slope m is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation $y = mx$ for a line through the origin and the equation $y = mx + b$ for a line intercepting the vertical axis at b.	7–8 M4 Lesson 5: Proportional Relationships and Slope 7–8 M4 Lesson 6: Slopes of Rising Lines and Falling Lines 7–8 M4 Lesson 7: Using Coordinates to Find Slope 7–8 M4 Lesson 8: Slope-Intercept Form of the Equation of a Line

Expressions and Equations

Analyze and solve linear equations and pairs of simultaneous linear equations.

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math²*
M.8.9 Solve linear equations in one variable.	*This standard is fully addressed by the lessons aligned to its subsections.*

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math²*
M.8.9.a 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 $x = a$, $a = a$, or $a = b$ results (where a and b are different numbers).	7–8 M2 Lesson 8: Solving Equations with Rational Coefficients 7–8 M2 Lesson 9: Linear Equations with More Than One Solution 7–8 M2 Lesson 10: Another Possible Number of Solutions
M.8.9.b Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.	7–8 M2 Lesson 6: Expressing Repeating Decimals as Fractions 7–8 M2 Topic B: Multi-Step Equations and Their Solutions
M.8.10 Analyze and solve pairs of simultaneous linear equations.	*This standard is fully addressed by the lessons aligned to its subsections.*
M.8.10.a 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.	7–8 M4 Lesson 11: Introduction to Systems of Linear Equations 7–8 M4 Lesson 12: Identifying Solutions 7–8 M4 Lesson 13: More Than One Solution 7–8 M4 Lesson 16: Choosing a Solution Method 7–8 M4 Lesson 19: Back to the Coordinate Plane 7–8 M4 Lesson 20: Modeling a Real-World Problem

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math²*
M.8.10.b Solve systems of two linear equations in two variables algebraically and estimate solutions by graphing the equations. Solve simple cases by inspection.	7–8 M4 Topic C: Solving Systems of Linear Equations 7–8 M4 Topic D: Writing and Solving Systems of Linear Equations
M.8.10.c Solve real-world and mathematical problems leading to two linear equations in two variables.	7–8 M4 Lesson 17: Writing and Solving Systems of Equations for Mathematical Problems 7–8 M4 Lesson 18: Writing and Solving Systems of Equations for Real-World Problems 7–8 M4 Lesson 20: Modeling a Real-World Problem

Functions

Define, evaluate, and compare functions.

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math²*
M.8.11 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.	7–8 M5 Lesson 1: Motion and Speed 7–8 M5 Lesson 2: Definition of a Function 7–8 M5 Lesson 4: More Examples of Functions 7–8 M5 Lesson 5: Graphs of Functions and Equations

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math²*
M.8.12 Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions).	7–8 M5 Lesson 7: Interpreting Rate of Change and Initial Value 7–8 M5 Lesson 8: Comparing Functions
M.8.13 Interpret the equation $y = mx + b$ as defining a linear function, whose graph is a straight line; give examples of functions that are not linear.	7–8 M5 Lesson 3: Linear Functions and Proportionality 7–8 M5 Lesson 6: Linear Functions and Rate of Change 7–8 M5 Lesson 10: Graphs of Nonlinear Functions

Functions

Use functions to model relationships between quantities.

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math²*
M.8.14 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 (x, y) 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.	7–8 M5 Lesson 6: Linear Functions and Rate of Change 7–8 M5 Lesson 7: Interpreting Rate of Change and Initial Value 7–8 M5 Lesson 23: Applications of Volume
M.8.15 Describe qualitatively the functional relationship between two quantities by analyzing a graph. Sketch a graph that exhibits the qualitative features of a function that has been described verbally.	7–8 M5 Lesson 9: Increasing and Decreasing Functions 7–8 M5 Lesson 10: Graphs of Nonlinear Functions

Geometry

Draw, construct and describe geometrical figures and describe the relationships between them.

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math²*
M.7.11 Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.	7–8 M3 Topic D: Scale Drawings and Dilations
M.7.12 Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.	7–8 M3 Lesson 1: Sketching and Constructing Geometric Figures 7–8 M3 Lesson 2: Conditions of Unique Triangles 7–8 M3 Lesson 3: Exploring and Constructing Circles
M.7.13 Describe the two-dimensional figures that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids.	7–8 M5 Lesson 13: Understanding Planes and Cross Sections 7–8 M5 Lesson 14: Cross Section Scavenger Hunt 7–8 M5 Lesson 15: Proportionality and Scale Factor of Cross Sections

Geometry

Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math²*
M.7.14 Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.	7–8 M3 Lesson 3: Exploring and Constructing Circles 7–8 M3 Lesson 4: Area and Circumference of a Circle 7–8 M3 Lesson 5: Area and Circumference of Circular Regions 7–8 M3 Lesson 6: Watering a Lawn
M.7.15 Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure.	7–8 M2 Lesson 1: Finding Unknown Angle Measures 7–8 M2 Lesson 2: Using Equivalent Expressions to Solve Equations 7–8 M2 Lesson 7: Solving Multi-Step Equations
M.7.16 Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.	7–8 M5 Lesson 11: Surface Areas of Prisms and Pyramids 7–8 M5 Lesson 16: Volume of Prisms 7–8 M5 Lesson 18: Designing a Fish Tank 7–8 M5 Lesson 21: Volume of Composite Solids

Geometry

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

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math²*
M.8.16 Verify experimentally the properties of rotations, reflections and translations:	*This standard is fully addressed by the lessons aligned to its subsections.*
M.8.16.a Lines are taken to lines, and line segments to line segments of the same length.	7–8 M3 Lesson 7: Motions of the Plane 7–8 M3 Lesson 8: Translations, Reflections, and Rotations 7–8 M3 Lesson 9: Rigid Motions on the Coordinate Plane 7–8 M3 Lesson 10: Sequencing the Rigid Motions
M.8.16.b Angles are taken to angles of the same measure.	7–8 M3 Lesson 7: Motions of the Plane 7–8 M3 Lesson 8: Translations, Reflections, and Rotations 7–8 M3 Lesson 9: Rigid Motions on the Coordinate Plane 7–8 M3 Lesson 10: Sequencing the Rigid Motions
M.8.16.c Parallel lines are taken to parallel lines.	7–8 M3 Lesson 7: Motions of the Plane 7–8 M3 Lesson 8: Translations, Reflections, and Rotations 7–8 M3 Lesson 9: Rigid Motions on the Coordinate Plane 7–8 M3 Lesson 10: Sequencing the Rigid Motions

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math²*
M.8.17 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.	7–8 M3 Lesson 10: Sequencing the Rigid Motions 7–8 M3 Lesson 11: Showing Figures Are Congruent 7–8 M3 Lesson 12: Lines Cut by a Transversal
M.8.18 Describe the effect of dilations, translations, rotations and reflections on two-dimensional figures using coordinates.	7–8 M3 Lesson 9: Rigid Motions on the Coordinate Plane 7–8 M3 Lesson 22: Dilations 7–8 M3 Lesson 23: Using Lined Paper to Explore Dilations 7–8 M3 Lesson 24: Figures and Dilations 7–8 M3 Lesson 25: The Shadowy Hand 7–8 M3 Lesson 26: Dilations on the Coordinate Plane
M.8.19 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.	7–8 M3 Lesson 27: Similar Figures 7–8 M3 Lesson 28: Exploring Angles in Similar Triangles

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math²*
M.8.20 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.	7–8 M3 Lesson 12: Lines Cut by a Transversal 7–8 M3 Lesson 13: Angle Sum of a Triangle 7–8 M3 Lesson 14: Exterior Angles of Triangles 7–8 M3 Lesson 28: Exploring Angles in Similar Triangles 7–8 M3 Lesson 29: Using Similar Figures to Find Unknown Side Lengths

Geometry

Understand and apply the Pythagorean Theorem.

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math²*
M.8.21 Explain a proof of the Pythagorean Theorem and its converse.	7–8 M3 Lesson 15: Proving the Pythagorean Theorem 7–8 M3 Lesson 16: Proving the Converse of the Pythagorean Theorem
M.8.22 Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions.	7–8 M1 Lesson 19: The Pythagorean Theorem 7–8 M3 Lesson 16: Proving the Converse of the Pythagorean Theorem 7–8 M3 Lesson 17: Applications of the Pythagorean Theorem 7–8 M3 Lesson 29: Using Similar Figures to Find Unknown Side Lengths 7–8 M5 Lesson 19: Volumes of Pyramids and Cones
M.8.23 Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.	7–8 M3 Lesson 17: Applications of the Pythagorean Theorem

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 Math²*
M.8.24 Know the formulas for the volumes of cones, cylinders and spheres and use them to solve real-world and mathematical problems.	7–8 M5 Topic D: Volume

Statistics and Probability

Use random sampling to draw inferences about a population.

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math²*
M.7.17 Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences.	7–8 M6 Lesson 10: Populations and Samples 7–8 M6 Lesson 11: Selecting a Sample 7–8 M6 Lesson 12: Sampling Variability When Estimating a Population Mean

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math²*
M.7.18 Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions.	7–8 M6 Lesson 12: Sampling Variability When Estimating a Population Mean 7–8 M6 Lesson 13: Sampling Variability and the Effect of Sample Size 7–8 M6 Lesson 14: Sampling Variability When Estimating a Population Proportion

Statistics and Probability

Draw informal comparative inferences about two populations.

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math²*
M.7.19 Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number.	6 M6 Topic B: Mean and Mean Absolute Deviation 6 M6 Lesson 12: Using the Median to Describe the Center 6 M6 Lesson 13: Using the Interquartile Range to Describe Variability 6 M6 Lesson 15: More Practice with Box Plots 6 M6 Lesson 16: Interpreting Box Plots 6 M6 Lesson 19: Comparing Data Distributions 6 M6 Lesson 22: Presenting Statistical Projects
M.7.20 Summarize numerical data sets in relation to their context, such as by:	*This standard is fully addressed by the lessons aligned to its subsections.*

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math²*
M.7.20.a Reporting the number of observations.	6 M6 Lesson 2: Describing a Data Distribution
M.7.20.b Describing the nature of the attribute under investigation, including how it was measured and its units of measurement.	6 M6 Lesson 1: Posing Statistical Questions 6 M6 Lesson 5: Comparing Data Displays 6 M6 Lesson 17: Developing a Statistical Project 6 M6 Lesson 21: Comparing Measures of Variability
M.7.20.c Giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered.	6 M6 Lesson 7: Using the Mean to Describe the Center 6 M6 Lesson 8: The Mean as a Balance Point 6 M6 Lesson 10: The Mean Absolute Deviation 6 M6 Lesson 11: Using the Mean and Mean Absolute Deviation 6 M6 Lesson 12: Using the Median to Describe the Center 6 M6 Lesson 13: Using the Interquartile Range to Describe Variability 6 M6 Lesson 18: Connecting Graphical Representations and Summary Measures 6 M6 Lesson 21: Comparing Measures of Variability
M.7.20.d Relating the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered.	6 M6 Lesson 20: Choosing a Measure of Center

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math²*
M.7.21 Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities, measuring the difference between the centers by expressing it as a multiple of a measure of variability.	7–8 M6 Topic D: Comparing Populations
M.7.22 Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations.	7–8 M6 Topic D: Comparing Populations

Statistics and Probability

Investigate chance processes and develop, use, and evaluate probability models.

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math²*
M.7.23 Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around $\frac{1}{2}$ indicates an event that is neither unlikely nor likely and a probability near 1 indicates a likely event.	7–8 M6 Lesson 1: What Is Probability?
M.7.24 Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability.	7–8 M6 Lesson 1: What Is Probability? 7–8 M6 Lesson 2: Outcomes of Chance Experiments 7–8 M6 Lesson 5: Outcomes That Are Not Equally Likely 7–8 M6 Lesson 7: Picking Blue
M.7.25 Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy.	7–8 M6 Lesson 6: The Law of Large Numbers

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math²*
M.7.25.a Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events.	7–8 M6 Lesson 3: Theoretical Probability 7–8 M6 Lesson 6: The Law of Large Numbers
M.7.25.b Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process.	7–8 M6 Lesson 6: The Law of Large Numbers 7–8 M6 Lesson 7: Picking Blue
M.7.26 Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation.	*This standard is fully addressed by the lessons aligned to its subsections.*
M.7.26.a Understand that, just as with simple events, the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs.	7–8 M6 Lesson 4: Multistage Experiments

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math²*
M.7.26.b Represent sample spaces for compound events using methods such as organized lists, tables and tree diagrams. For an event described in everyday language, identify the outcomes in the sample space which compose the event.	7–8 M6 Lesson 4: Multistage Experiments
M.7.26.c Design and use a simulation to generate frequencies for compound events.	7–8 M6 Lesson 8: Probability Simulations 7–8 M6 Lesson 9: Simulations with Random Number Tables

Statistics and Probability

Investigate patterns of association in bivariate data.

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math²*
M.8.25 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.	7–8 M6 Lesson 18: Scatter Plots 7–8 M6 Lesson 19: Patterns in Scatter Plots

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math²*
M.8.26 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.	7–8 M6 Lesson 20: Informally Fitting a Line to Data 7–8 M6 Lesson 21: Linear Models
M.8.27 Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept.	7–8 M6 Lesson 20: Informally Fitting a Line to Data 7–8 M6 Lesson 21: Linear Models
M.8.28 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.	7–8 M6 Topic F: Bivariate Categorical Data