Grade 7 | West Virginia College- and Career-Readiness Standards for Mathematics (2023) Correlation to *Eureka Math²® (2027)*

Eureka Math² is a research-proven math curriculum that empowers teachers to center instructional techniques on student success. Teachers can foster more "aha!" learning moments by providing the support needed for all learners to build a more confident math mindset.

This *Eureka Math²* edition builds on a strong foundation of effective instruction. It provides teachers with guidance on delivering rigorous instruction that honors student choice and encourages confident problem-solving.

Eureka Math² carefully sequences mathematical content to maximize vertical alignment from kindergarten through high school. This kind of sequencing has proven to be essential in students' mastery of math.

Teachability

Eureka 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 into the teacher materials.

Accessibility

Eureka Math² incorporates Universal Design for Learning (UDL) principles so all learners can access the mathematics and take on challenging math concepts. UDL, Differentiation, and Multilingual Learner supports are built into the instructional design and are clearly identified in the *Teach* book.

The curriculum also carries a focus on readability. By eliminating unnecessary words and using clear sentences, the *Eureka 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.

Math Confidence

Eureka Math² fosters a classroom culture of learning by encouraging student-led discourse and cognitive engagement that results in confident learners. By leveraging consistent models, routines, and progressions, teachers can remove barriers and allow all students an avenue to success. Within the digital platform, each grade includes wordless videos and digital interactives that spark students' curiosity and help them make conceptual connections. Using the *Learn* books, students wonder, explore, and make sense of mathematics, which helps them develop a strong, positive mathematical identity.

Mathematical Habits of Mind	Aligned Components of *Eureka Math²*
MHM.1 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.
MHM.2 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.
MHM.3 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.
MHM.4 Model with mathematics.	Lessons in every module engage students in mathematical habits of mind. These are indicated in margin notes included with every lesson.
MHM.5 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.
MHM.6 Attend to precision.	Lessons in every module engage students in mathematical habits of mind. These are indicated in margin notes included with every lesson.
MHM.7 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.
MHM.8 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 (e.g., if a person walks $\frac{1}{2}$ mile in each $\frac{1}{4}$ hour, compute the unit rate as the complex fraction $\left(\frac{1}{2}\right)/\left(\frac{1}{4}\right)$ miles per hour, equivalently 2 miles per hour).	7 M1 Lesson 1: An Experiment with Ratios and Rates 7 M1 Lesson 2: Exploring Tables of Proportional Relationships 7 M1 Lesson 3: Identifying Proportional Relationships in Tables
M.7.2 Recognize and represent proportional relationships between quantities.	*Supplemental material is necessary to address this standard.*
M.7.2.a Decide whether two quantities are in a proportional relationship (e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin).	7 M1 Lesson 1: An Experiment with Ratios and Rates 7 M1 Lesson 2: Exploring Tables of Proportional Relationships 7 M1 Lesson 3: Identifying Proportional Relationships in Tables 7 M1 Lesson 4: Exploring Graphs of Proportional Relationships 7 M1 Lesson 5: Analyzing Graphs of Proportional Relationships 7 M1 Lesson 6: Identifying Proportional Relationships in Written Descriptions 7 M1 Lesson 14: Extreme Bicycles

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math²*
M.7.2.b Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams and verbal descriptions of proportional relationships.	7 M1 Lesson 4: Exploring Graphs of Proportional Relationships 7 M1 Lesson 5: Analyzing Graphs of Proportional Relationships 7 M1 Lesson 6: Identifying Proportional Relationships in Written Descriptions 7 M1 Lesson 8: Relating Representations of Proportional Relationships 7 M1 Lesson 9: Comparing Proportional Relationships 7 M1 Lesson 11: Constant Rates 7 M1 Lesson 12: Multi-Step Ratio Problems, Part 1 7 M1 Lesson 13: Multi-Step Ratio Problems, Part 2 7 M1 Lesson 16: Using a Scale Factor 7 M1 Lesson 18: Relating Areas of Scale Drawings
M.7.2.c Represent proportional relationships by equations (e.g., if total cost t is proportional to the number n of items purchased at a constant price t, the relationship between the total cost and the number of items can be expressed as $t = pn$).	7 M1 Lesson 2: Exploring Tables of Proportional Relationships 7 M1 Lesson 3: Identifying Proportional Relationships in Tables 7 M1 Lesson 8: Relating Representations of Proportional Relationships 7 M1 Lesson 10: Applying Proportional Reasoning 7 M1 Lesson 11: Constant Rates 7 M1 Lesson 12: Multi-Step Ratio Problems, Part 1 7 M1 Lesson 13: Multi-Step Ratio Problems, Part 2 7 M5 Lesson 1: Proportionality and Scale Factor 7 M5 Lesson 4: Proportion and Percent 7 M5 Lesson 5: Common Denominators or Common Numerators

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math²*
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 M1 Lesson 4: Exploring Graphs of Proportional Relationships 7 M1 Lesson 5: Analyzing Graphs of Proportional Relationships 7 M1 Lesson 9: Comparing Proportional Relationships
M.7.3 Use proportional relationships to solve multistep ratio and percent problems (e.g., simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, and/or percent error).	7 M1 Lesson 7: Handstand Sprint 7 M1 Lesson 10: Applying Proportional Reasoning 7 M1 Lesson 11: Constant Rates 7 M1 Lesson 12: Multi-Step Ratio Problems, Part 1 7 M1 Lesson 13: Multi-Step Ratio Problems, Part 2 7 M5 Lesson 2: Racing for Percents 7 M5 Lesson 3: Percent as a Rate per 100 7 M5 Lesson 4: Proportion and Percent 7 M5 Lesson 5: Common Denominators or Common Numerators 7 M5 Lesson 6: Finding Commission 7 M5 Lesson 7: Finding Discounts 7 M5 Lesson 8: Determining Fees 7 M5 Lesson 9: Tax as a Fee 7 M5 Lesson 10: Percent Increase 7 M5 Lesson 11: Percent Decrease 7 M5 Lesson 12: More Discounts 7 M5 Lesson 13: What Is the Best Deal? 7 M5 Lesson 15: Tips and Taxes

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math²*
M.7.3 ***continued***	7 M5 Lesson 16: Markups and Discounts 7 M5 Lesson 17: Simple Interest and Proportionality 7 M5 Lesson 18: Simple Interest—Solving for Unknown Values 7 M5 Lesson 19: Applying Percent Error 7 M5 Lesson 20: Making Money, Day 1 7 M5 Lesson 21: Making Money, Day 2 7 M5 Lesson 22: Making Mixtures 7 M5 Lesson 23: Percents of Percents

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.	*Supplemental material is necessary to address this standard.*

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math²*
M.7.4.a Describe situations in which opposite quantities combine to make 0 (e.g., a hydrogen atom has 0 charge because its two constituents are oppositely charged).	7 M2 Lesson 1: Combining Opposites 7 M2 Lesson 12: The Integer Game
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. (e.g., 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 M2 Lesson 1: Combining Opposites 7 M2 Lesson 2: Adding Integers 7 M2 Lesson 3: Adding Integers Efficiently 7 M2 Lesson 5: Decomposing Rational Numbers to Make Addition More Efficient 7 M2 Lesson 6: Adding Rational Numbers 7 M2 Lesson 8: Subtracting Integers, Part 1
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 M2 Lesson 7: What Subtraction Means 7 M2 Lesson 8: Subtracting Integers, Part 1 7 M2 Lesson 9: Subtracting Integers, Part 2 7 M2 Lesson 10: Subtracting Rational Numbers, Part 1 7 M2 Lesson 11: Subtracting Rational Numbers, Part 2

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math²*
M.7.4.d Apply properties of operations as strategies to add and subtract rational numbers.	7 M2 Lesson 4: KAKOOMA® 7 M2 Lesson 5: Decomposing Rational Numbers to Make Addition More Efficient 7 M2 Lesson 6: Adding Rational Numbers 7 M2 Lesson 9: Subtracting Integers, Part 2 7 M2 Lesson 10: Subtracting Rational Numbers, Part 1 7 M2 Lesson 11: Subtracting Rational Numbers, Part 2 7 M2 Lesson 12: The Integer Game
M.7.5 Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.	*Supplemental material is necessary to address this standard.*
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 M2 Lesson 13: Understanding Multiples of Negative Numbers 7 M2 Lesson 14: Understanding the Product of Two Negative Numbers 7 M2 Lesson 15: Multiplying Rational Numbers 7 M2 Lesson 16: Exponential Expressions with Rational Numbers

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math²*
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 M2 Lesson 18: Understanding Negative Divisors 7 M2 Lesson 21: Comparing and Ordering Rational Numbers
M.7.5.c Apply properties of operations as strategies to multiply and divide rational numbers.	7 M2 Lesson 13: Understanding Multiples of Negative Numbers 7 M2 Lesson 14: Understanding the Product of Two Negative Numbers 7 M2 Lesson 15: Multiplying Rational Numbers 7 M2 Lesson 16: Exponential Expressions with Rational Numbers 7 M2 Lesson 17: Understanding Negative Dividends 7 M2 Lesson 18: Understanding Negative Divisors 7 M2 Lesson 22: Multiplication and Division Expressions 7 M2 Lesson 24: Order of Operations with Rational Numbers
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 M2 Lesson 19: Rational Numbers as Decimals, Part 1 7 M2 Lesson 20: Rational Numbers as Decimals, Part 2 7 M2 Lesson 21: Comparing and Ordering Rational Numbers
M.7.6 Solve real-world and mathematical problems involving the four operations with rational numbers.	7 M2 Lesson 25: Writing and Evaluating Expressions with Rational Numbers, Part 1 7 M2 Lesson 26: Writing and Evaluating Expressions with Rational Numbers, Part 2

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 M3 Lesson 1: Equivalent Expressions 7 M3 Lesson 2: The Distributive Property and the Tabular Model 7 M3 Lesson 3: The Distributive Property and Combining Like Terms 7 M3 Lesson 4: Adding and Subtracting Expressions 7 M3 Lesson 5: Factoring Expressions 7 M3 Lesson 6: Comparing Expressions
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 (e.g., $a + 0.05a = 1.05a$ means that "increase by 5%" is the same as "multiply by 1.05.").	7 M3 Lesson 2: The Distributive Property and the Tabular Model 7 M3 Lesson 4: Adding and Subtracting Expressions 7 M3 Lesson 5: Factoring Expressions 7 M3 Lesson 6: Comparing Expressions 7 M3 Lesson 9: Solving Equations to Determine Unknown Angle Measures 7 M5 Lesson 10: Percent Increase 7 M5 Lesson 11: Percent Decrease 7 M5 Lesson 12: More Discounts 7 M5 Lesson 14: Scale Factor—Percent Increase and Decrease 7 M5 Lesson 15: Tips and Taxes 7 M5 Lesson 16: Markups and Discounts 7 M5 Lesson 23: Percents of Percents

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 (e.g., if a woman making $\$25$ an hour gets a 10% raise, she will make an additional $\frac{1}{10}$ of her salary an hour, or $\$2.50$, for a new salary of $\$27.50$; if you want to place a towel bar $9\frac{3}{4}$ inches long in the center of a door that is $27\frac{1}{2}$ inches wide, you will need to place the bar about 9 inches from each edge; this estimate can be used as a check on the exact computation).	7 M2 Lesson 25: Writing and Evaluating Expressions with Rational Numbers, Part 1 7 M2 Lesson 26: Writing and Evaluating Expressions with Rational Numbers, Part 2 7 M3 Lesson 9: Solving Equations to Determine Unknown Angle Measures 7 M3 Lesson 10: Problem Solving with Unknown Angle Measures 7 M3 Lesson 11: Dominoes and Dominoes 7 M3 Lesson 16: Using Equations to Solve Rate Problems 7 M3 Lesson 17: Using Equations to Solve Problems

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math²*
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 M3 Lesson 11: Dominoes and Dominoes 7 M3 Lesson 12: Solving Equations Algebraically and Arithmetically 7 M3 Lesson 13: Solving Equations—Puzzles 7 M3 Lesson 16: Using Equations to Solve Rate Problems 7 M3 Lesson 17: Using Equations to Solve Problems 7 M3 Lesson 18: Understanding Inequalities and Their Solutions 7 M3 Lesson 19: Using Equations to Solve Inequalities 7 M3 Lesson 21: Solving Two-Step Inequalities 7 M3 Lesson 22: Solving Problems Involving Inequalities 7 M3 Lesson 23: Inequalities vs. Equations
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 (e.g., the perimeter of a rectangle is 54 cm; its length is 6 cm; what is its width?; an arithmetic solution similar to "$54 - 6 - 6$ divided by 2" may be compared with the reasoning involved in solving the equation $2w + 12 = 54$; an arithmetic solution similar to "$\frac{54}{2} - 6$" may be compared with the reasoning involved in solving the equation $2(w + 6) = 54$).	7 M3 Lesson 7: Angle Relationships and Unknown Angle Measures 7 M3 Lesson 8: Strategies to Determine Unknown Angle Measures 7 M3 Lesson 12: Solving Equations Algebraically and Arithmetically 7 M3 Lesson 13: Solving Equations—Puzzles 7 M3 Lesson 14: Solving Equations—Scavenger Hunt 7 M3 Lesson 15: Solving Equations Fluently 7 M3 Lesson 16: Using Equations to Solve Rate Problems

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math²*
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 (e.g., as a salesperson, you are paid $\$50$ per week plus $\$3$ per sale; this week you want your pay to be at least $\$100$; write an inequality for the number of sales you need to make and describe the solutions).	7 M3 Lesson 18: Understanding Inequalities and Their Solutions 7 M3 Lesson 19: Using Equations to Solve Inequalities 7 M3 Lesson 20: Preserving and Reversing 7 M3 Lesson 21: Solving Two-Step Inequalities 7 M3 Lesson 22: Solving Problems Involving Inequalities 7 M3 Lesson 23: Inequalities vs. Equations

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 M1 Lesson 15: Scale Drawings 7 M1 Lesson 16: Using a Scale Factor 7 M1 Lesson 17: Finding Actual Distances from a Scale Drawing 7 M1 Lesson 18: Relating Areas of Scale Drawings 7 M1 Lesson 19: Scale and Scale Factor 7 M1 Lesson 20: Creating Multiple Scale Drawings 7 M5 Lesson 1: Proportionality and Scale Factor 7 M5 Lesson 14: Scale Factor—Percent Increase and Decrease

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math²*
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 the following:	7 M4 Lesson 1: Sketching, Drawing, and Constructing Geometric Figures 7 M4 Lesson 2: Constructing Parallelograms and Other Quadrilaterals 7 M4 Lesson 3: Side Lengths of a Triangle 7 M4 Lesson 4: Angles of a Triangle 7 M4 Lesson 5: Constructing Quadrilaterals and Triangles 7 M4 Lesson 6: Unique Triangles 7 M4 Lesson 7: Two Angles and One Side 7 M4 Lesson 8: Two Sides and One Angle 7 M4 Lesson 9: Constructing a Circle
M.7.12.a a unique triangle (e.g., three side measures satisfy the triangle inequality theorem),	7 M4 Lesson 1: Sketching, Drawing, and Constructing Geometric Figures 7 M4 Lesson 2: Constructing Parallelograms and Other Quadrilaterals 7 M4 Lesson 3: Side Lengths of a Triangle 7 M4 Lesson 4: Angles of a Triangle 7 M4 Lesson 5: Constructing Quadrilaterals and Triangles 7 M4 Lesson 6: Unique Triangles 7 M4 Lesson 7: Two Angles and One Side 7 M4 Lesson 8: Two Sides and One Angle 7 M4 Lesson 9: Constructing a Circle

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math²*
M.7.12.b more than one triangle (e.g., given three angles whose sum is 180 degrees), or	7 M4 Lesson 1: Sketching, Drawing, and Constructing Geometric Figures 7 M4 Lesson 2: Constructing Parallelograms and Other Quadrilaterals 7 M4 Lesson 3: Side Lengths of a Triangle 7 M4 Lesson 4: Angles of a Triangle 7 M4 Lesson 5: Constructing Quadrilaterals and Triangles 7 M4 Lesson 6: Unique Triangles 7 M4 Lesson 7: Two Angles and One Side 7 M4 Lesson 8: Two Sides and One Angle 7 M4 Lesson 9: Constructing a Circle
M.7.12.c no triangle (e.g., angle sum is not 180 degrees or sum of the measures of two sides does not exceed the measure of the third side).	7 M4 Lesson 1: Sketching, Drawing, and Constructing Geometric Figures 7 M4 Lesson 2: Constructing Parallelograms and Other Quadrilaterals 7 M4 Lesson 3: Side Lengths of a Triangle 7 M4 Lesson 4: Angles of a Triangle 7 M4 Lesson 5: Constructing Quadrilaterals and Triangles 7 M4 Lesson 6: Unique Triangles 7 M4 Lesson 7: Two Angles and One Side 7 M4 Lesson 8: Two Sides and One Angle 7 M4 Lesson 9: Constructing a Circle

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math²*
M.7.13 Describe the two-dimensional figures (face shapes) that result from slicing three-dimensional figures with cuts made parallel to, perpendicular to, or neither parallel nor perpendicular to the bases of right rectangular prisms and right rectangular pyramids.	7 M4 Lesson 22: Understanding Planes and Cross Sections 7 M4 Lesson 23: Cross Section Scavenger Hunt

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 M4 Lesson 10: The Outside of a Circle 7 M4 Lesson 11: The Inside of a Circle 7 M4 Lesson 12: Exploring the Area and Circumference of a Circle 7 M4 Lesson 13: Finding Areas of Circular Regions 7 M4 Lesson 14: Composite Figures with Circular Regions 7 M4 Lesson 15: 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 M3 Lesson 7: Angle Relationships and Unknown Angle Measures 7 M3 Lesson 8: Strategies to Determine Unknown Angle Measures 7 M3 Lesson 10: Problem Solving with Unknown Angle Measures

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math²*
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 M4 Lesson 14: Composite Figures with Circular Regions 7 M4 Lesson 16: Solving Area Problems by Composition and Decomposition 7 M4 Lesson 17: Surface Area of Right Rectangular and Right Triangular Prisms 7 M4 Lesson 18: Surface Area of Right Prisms 7 M4 Lesson 20: Surface Areas of Right Pyramids 7 M4 Lesson 21: Surface Area of Other Solids 7 M4 Lesson 24: Volume of Prisms 7 M4 Lesson 25: Volume of Composite Solids 7 M4 Lesson 26: Designing a Fish Tank

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 M6 Lesson 11: Populations and Samples 7 M6 Lesson 12: Selecting a Sample 7 M6 Lesson 13: Variability Between Samples 7 M6 Lesson 14: 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 (e.g., estimate the mean word length in a book by randomly sampling words from the book; predict the winner of a school election based on randomly sampled survey data; gauge how far off the estimate or prediction might be).	7 M6 Lesson 13: Variability Between Samples 7 M6 Lesson 14: Sampling Variability When Estimating a Population Mean 7 M6 Lesson 15: Sampling Variability and the Effect of Sample Size 7 M6 Lesson 16: 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 Given two data displays, distinguish measures of center and measures of variation.	6 M6 Lesson 7: Using the Mean to Describe the Center 6 M6 Lesson 8: The Mean as a Balance Point 6 M6 Lesson 9: Variability in a Data Distribution 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 15: More Practice with Box Plots

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math²*
M.7.19 ***continued***	6 M6 Lesson 16: Interpreting Box Plots 6 M6 Lesson 19: Comparing Data Distributions 6 M6 Lesson 22: Presenting Statistical Projects
M.7.20 Compare two numerical data sets in relation to their context, such as by:	*Supplemental material is necessary to address this standard.*
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 describing any overall pattern(s).	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

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math²*
M.7.20.d Giving quantitative measures of variability (interquartile range (IQR), range, and/or mean absolute deviation (MAD)) and describing any striking deviations from the overall pattern(s).	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.e 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
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 (e.g., the mean height of players on the basketball team is 10 cm greater than the mean height of players on the soccer team, about twice the variability (mean absolute deviation) on either team; on a dot plot, the separation between the two distributions of heights is noticeable).	7 M6 Lesson 17: Comparing Sample Means 7 M6 Lesson 18: Comparing Population Means 7 M6 Lesson 19: Memory Games

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math²*
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 (e.g., decide whether the words in a chapter of a seventh-grade science book are generally longer than the words in a chapter of a fourth-grade science book).	7 M6 Lesson 17: Comparing Sample Means 7 M6 Lesson 18: Comparing Population Means 7 M6 Lesson 19: Memory Games

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 M6 Lesson 1: What is Probability?

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math²*
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 (e.g., when rolling a number cube 600 times, predict that a 3 or 6 would be rolled roughly 200 times, but probably not exactly 200 times).	7 M6 Lesson 2: Empirical Probability 7 M6 Lesson 3: Outcomes of Chance Experiments 7 M6 Lesson 6: Outcomes That Are Not Equally Likely 7 M6 Lesson 8: 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 M6 Lesson 7: The Law of Large Numbers
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 (e.g., if a student is selected at random from a class, find the probability that Jane will be selected and the probability that a girl will be selected).	7 M6 Lesson 4: Theoretical Probability 7 M6 Lesson 7: The Law of Large Numbers

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math²*
M.7.25.b Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process (e.g., find the approximate probability that a spinning penny will land heads up or that a tossed paper cup will land open-end down; do the outcomes for the spinning penny appear to be equally likely based on the observed frequencies?).	7 M6 Lesson 7: The Law of Large Numbers 7 M6 Lesson 8: Picking Blue
M.7.26 Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation.	*Supplemental material is necessary to address this standard.*
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 M6 Lesson 5: Multistage Experiments
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 (e.g., “rolling double sixes”), identify the outcomes in the sample space which compose the event.	7 M6 Lesson 5: Multistage Experiments

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math²*
M.7.26.c Design and use a simulation to generate frequencies for compound events (e.g., use random digits as a simulation tool to approximate the answer to the question: if 40% of donors have type A blood, what is the probability that it will take at least 4 donors to find one with type A blood?).	7 M6 Lesson 9: Probability Simulations 7 M6 Lesson 10: Simulations with Random Number Tables