Grade 8 | Mathematics Standards of Learning for Virginia Public Schools 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 Process Goals for Students	Aligned Components of *Eureka Math²*
Mathematical Problem Solving	Lessons in every module engage students in mathematical processes. These are indicated in margin notes included with every lesson.
Mathematical Communication	Lessons in every module engage students in mathematical processes. These are indicated in margin notes included with every lesson.
Mathematical Reasoning	Lessons in every module engage students in mathematical processes. These are indicated in margin notes included with every lesson.
Mathematical Connections	Lessons in every module engage students in mathematical processes. These are indicated in margin notes included with every lesson.
Mathematical Representations	Lessons in every module engage students in mathematical processes. These are indicated in margin notes included with every lesson.

Number and Number Sense

8.NS.1 The student will compare and order real numbers and determine the relationships between real numbers.

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math²*
8.NS.1.a Estimate and identify the two consecutive natural numbers between which the positive square root of a given number lies and justify which natural number is the better approximation. Numbers are limited to natural numbers from 1 to 400.	8 M1 Lesson 20: Square Roots 8 M1 Topic E: Irrational Numbers
8.NS.1.b Use rational approximations (to the nearest hundredth) of irrational numbers to compare, order, and locate values on a number line. Radicals may include both positive and negative square roots of values from 0 to 400 yielding an irrational number.	8 M1 Lesson 21: Approximating Values of Roots and π^2 8 M1 Lesson 23: Ordering Irrational Numbers

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math²*
8.NS.1.c Use multiple strategies (e.g., benchmarks, number line, equivalency) to compare and order no more than five real numbers expressed as integers, fractions (proper or improper), decimals, mixed numbers, percents, numbers written in scientific notation, radicals, and π. Radicals may include both positive and negative square roots of values from 0 to 400. Ordering may be in ascending or descending order. Justify solutions orally, in writing or with a model.	7 M2 Lesson 21: Comparing and Ordering Rational Numbers 8 M1 Lesson 21: Approximating Values of Roots and π^2 8 M1 Lesson 23: Ordering Irrational Numbers *Supplemental material is necessary to address ordering no more than five real numbers that include percents and numbers written in scientific notation.*

Number and Number Sense

8.NS.2 The student will investigate and describe the relationship between the subsets of the real number system.

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math²*
8.NS.2.a Describe and illustrate the relationships among the subsets of the real number system by using representations (e.g., graphic organizers, number lines). Subsets include rational numbers, irrational numbers, integers, whole numbers, and natural numbers.	8 M1 Lesson 16: Perfect Squares and Perfect Cubes 8 M1 Lesson 17: Solving Equations with Squares and Cubes 8 M1 Lesson 20: Square Roots 8 M1 Lesson 22: Familiar and Not So Familiar Numbers 8 M1 Lesson 24: Revisiting Equations with Squares and Cubes 8 M4 Lesson 5: An Interesting Application of Linear Equations, Part 1 8 M4 Lesson 6: An Interesting Application of Linear Equations, Part 2 *Supplemental material is necessary to address using representations such as graphic organizers to illustrate the relationships among the subsets of the real number system.*

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math²*
8.NS.2.b Classify and explain why a given number is a member of a particular subset or subsets of the real number system.	8 M1 Lesson 22: Familiar and Not So Familiar Numbers 8 M4 Lesson 5: An Interesting Application of Linear Equations, Part 1 8 M4 Lesson 6: An Interesting Application of Linear Equations, Part 2 *Supplemental material is necessary to address the subsets of rational numbers.*
8.NS.2.c Describe each subset of the set of real numbers and include examples and non-examples.	8 M1 Lesson 22: Familiar and Not So Familiar Numbers 8 M4 Lesson 5: An Interesting Application of Linear Equations, Part 1 8 M4 Lesson 6: An Interesting Application of Linear Equations, Part 2 *Supplemental material is necessary to address the subsets of rational numbers.*

Computation and Estimation

8.CE.1 The student will estimate and apply proportional reasoning and computational procedures to solve contextual problems.

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math²*
8.CE.1.a Estimate and solve contextual problems that require the computation of one discount or markup and the resulting sale price.	7 M5 Lesson 7: Finding Discounts 7 M5 Lesson 9: Tax as a Fee 7 M5 Lesson 10: Percent Increase 7 M5 Lesson 12: More Discounts 7 M5 Lesson 13: What Is the Best Deal? 7 M5 Lesson 16: Markups and Discounts 7 M5 Lesson 20: Making Money, Day 1 7 M5 Lesson 21: Making Money, Day 2

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math²*
8.CE.1.b Estimate and solve contextual problems that require the computation of the sales tax, tip and resulting total.	7 M5 Lesson 9: Tax as a Fee 7 M5 Lesson 10: Percent Increase 7 M5 Lesson 15: Tips and Taxes
8.CE.1.c Estimate and solve contextual problems that require the computation of the percent increase or decrease.	7 M5 Lesson 10: Percent Increase 7 M5 Lesson 11: Percent Decrease 7 M5 Lesson 14: Scale Factor—Percent Increase and Decrease 7 M5 Lesson 15: Tips and Taxes

Measurement and Geometry

8.MG.1 The student will use the relationships among pairs of angles that are vertical angles, adjacent angles, supplementary angles, and complementary angles to determine the measure of unknown angles.

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math²*
8.MG.1.a Identify and describe the relationship between pairs of angles that are vertical, adjacent, supplementary, and complementary.	7 M3 Topic B: Unknown Angle Measurements 8 M2 Lesson 12: Lines Cut by a Transversal 8 M2 Lesson 16: Find Unknown Angle Measures
8.MG.1.b Use the relationships among supplementary, complementary, vertical, and adjacent angles to solve problems, including those in context, involving the measure of unknown angles.	7 M3 Topic B: Unknown Angle Measurements 8 M2 Lesson 12: Lines Cut by a Transversal 8 M2 Lesson 16: Find Unknown Angle Measures

Measurement and Geometry

8.MG.2 The student will investigate and determine the surface area of square-based pyramids and the volume of cones and square-based pyramids.

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math²*
8.MG.2.a Determine the surface area of square-based pyramids by using concrete objects, nets, diagrams, and formulas.	7 M4 Lesson 20: Surface Area of Right Pyramids
8.MG.2.b Determine the volume of cones and square-based pyramids, using concrete objects, diagrams, and formulas.	8 M6 Lesson 21: Volumes of Prisms and Pyramids 8 M6 Lesson 23: Volume of Cones 8 M6 Lesson 25: Applications of Volume
8.MG.2.c Examine and explain the relationship between the volume of cones and cylinders, and the volume of rectangular prisms and square-based pyramids.	8 M6 Lesson 21: Volumes of Prisms and Pyramids 8 M6 Lesson 23: Volume of Cones
8.MG.2.d Solve problems in context involving volume of cones and square-based pyramids and the surface area of square-based pyramids.	7 M4 Lesson 20: Surface Area of Right Pyramids 8 M6 Lesson 21: Volumes of Prisms and Pyramids 8 M6 Lesson 23: Volume of Cones 8 M6 Lesson 25: Applications of Volume

Measurement and Geometry

8.MG.3 The student will apply translations and reflections to polygons in the coordinate plane.

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math²*
8.MG.3.a Given a preimage in the coordinate plane, identify the coordinates of the image of a polygon that has been translated vertically, horizontally, or a combination of both.	8 M2 Lesson 4: Translations and Reflections on the Coordinate Plane 8 M2 Lesson 7: Working Backward
8.MG.3.b Given a preimage in the coordinate plane, identify the coordinates of the image of a polygon that has been reflected over the x- or y-axis.	8 M2 Lesson 4: Translations and Reflections on the Coordinate Plane
8.MG.3.c Given a preimage in the coordinate plane, identify the coordinates of the image of a polygon that has been translated and reflected over the x- or y-axis or reflected over the x- or y-axis and then translated.	8 M2 Lesson 7: Working Backward 8 M2 Lesson 8: Sequencing the Rigid Motions 8 M2 Lesson 9: Ordering Sequences of Rigid Motions
8.MG.3.d Sketch the image of a polygon that has been translated vertically, horizontally, or a combination of both.	8 M2 Lesson 4: Translations and Reflections on the Coordinate Plane

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math²*
8.MG.3.e Sketch the image of a polygon that has been reflected over the x- or y-axis.	8 M2 Lesson 4: Translations and Reflections on the Coordinate Plane
8.MG.3.f Sketch the image of a polygon that has been translated and reflected over the x- or y-axis, or reflected over the x- or y-axis and then translated.	8 M2 Lesson 7: Working Backward 8 M2 Lesson 8: Sequencing the Rigid Motions 8 M2 Lesson 9: Ordering Sequences of Rigid Motions
8.MG.3.g Identify and describe transformations in context (e.g., tiling, fabric, wallpaper designs, art).	Math 1 M4 Lesson 15: Designs with Rigid Motions

Measurement and Geometry

8.MG.4 The student will apply the Pythagorean Theorem to solve problems involving right triangles, including those in context.

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math²*
8.MG.4.a Verify the Pythagorean Theorem using diagrams, concrete materials, and measurement.	8 M2 Lesson 17: Proving the Pythagorean Theorem 8 M2 Lesson 18: Proving the Converse of the Pythagorean Theorem 8 M2 Lesson 19: Using the Pythagorean Theorem and Its Converse

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math²*
8.MG.4.b Determine whether a triangle is a right triangle given the measures of its three sides.	8 M2 Lesson 19: Using the Pythagorean Theorem and Its Converse
8.MG.4.c Identify the parts of a right triangle (the hypotenuse and the legs) given figures in various orientations.	8 M1 Lesson 18: The Pythagorean Theorem 8 M1 Lesson 19: Using the Pythagorean Theorem 8 M1 Lesson 20: Square Roots 8 M2 Lesson 19: Using the Pythagorean Theorem and Its Converse 8 M2 Lesson 21: Applying the Pythagorean Theorem 8 M2 Lesson 22: On the Right Path
8.MG.4.d Determine the measure of a side of a right triangle, given the measures of the other two sides.	8 M1 Lesson 18: The Pythagorean Theorem 8 M1 Lesson 19: Using the Pythagorean Theorem 8 M1 Lesson 20: Square Roots 8 M2 Lesson 19: Using the Pythagorean Theorem and Its Converse 8 M2 Lesson 21: Applying the Pythagorean Theorem 8 M2 Lesson 22: On the Right Path
8.MG.4.e Apply the Pythagorean Theorem, and its converse, to solve problems involving right triangles in context.	8 M1 Lesson 18: The Pythagorean Theorem 8 M1 Lesson 19: Using the Pythagorean Theorem 8 M1 Lesson 20: Square Roots 8 M2 Lesson 19: Using the Pythagorean Theorem and Its Converse 8 M2 Lesson 20: Distance in the Coordinate Plane 8 M2 Lesson 21: Applying the Pythagorean Theorem 8 M2 Lesson 22: On the Right Path

Measurement and Geometry

8.MG.5 The student will solve area and perimeter problems involving composite plane figures, including those in context.

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math²*
8.MG.5.a Subdivide a plane figure into triangles, rectangles, squares, trapezoids, parallelograms, circles, and semicircles. Determine the area of subdivisions and combine to determine the area of the composite plane figure.	7 M4 Lesson 14: Composite Figures with Circular Regions 7 M4 Lesson 15: Watering a Lawn 7 M4 Lesson 16: Solving Area Problems by Composition and Decomposition
8.MG.5.b Subdivide a plane figure into triangles, rectangles, squares, trapezoids, parallelograms, and semicircles. Use the attributes of the subdivisions to determine the perimeter of the composite plane figure.	7 M4 Lesson 14: Composite Figures with Circular Regions *Supplemental material is necessary to fully address this standard.*
8.MG.5.c Apply perimeter, circumference, and area formulas to solve contextual problems involving composite plane figures.	7 M4 Lesson 14: Composite Figures with Circular Regions 7 M4 Lesson 15: Watering a Lawn 7 M4 Lesson 16: Solving Area Problems by Composition and Decomposition

Probability and Statistics

8.PS.1 The student will use statistical investigation to determine the probability of independent and dependent events, including those in context.

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math²*
8.PS.1.a Determine whether two events are independent or dependent and explain how replacement impacts the probability.	*Supplemental material is necessary to address this standard.*
8.PS.1.b Compare and contrast the probability of independent and dependent events.	*Supplemental material is necessary to address this standard.*
8.PS.1.c Determine the probability of two independent events.	7 M6 Lesson 4: Theoretical Probability 7 M6 Lesson 5: Multistage Experiments
8.PS.1.d Determine the probability of two dependent events.	*Supplemental material is necessary to address this standard.*

Probability and Statistics

8.PS.2 The student will apply the data cycle (formulate questions; collect or acquire data; organize and represent data; and analyze data and communicate results) with a focus on boxplots.

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math²*
8.PS.2.a Formulate questions that require the collection or acquisition of data with a focus on boxplots.	A1 M1 Lesson 20: Using Center to Compare Data Distributions A1 M1 Lesson 22: Estimating Variability in Data Distributions *Supplemental material is necessary to address a focus on boxplots.*
8.PS.2.b Determine the data needed to answer a formulated question and collect the data (or acquire existing data) using various methods (e.g., observations, measurement, surveys, experiments).	7 M6 Lesson 12: Selecting a Sample 7 M6 Lesson 14: Sampling Variability When Estimating a Population Mean A1 M1 Lesson 18: Distributions and Their Shapes
8.PS.2.c Determine how statistical bias might affect whether the data collected from the sample is representative of the larger population.	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
8.PS.2.d Organize and represent a numeric data set of no more than 20 items, using boxplots, with and without the use of technology.	A1 M1 Lesson 18: Distributions and Their Shapes A1 M1 Lesson 19: Describing the Center of a Distribution A1 M1 Lesson 20: Using Center to Compare Data Distributions

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math²*
8.PS.2.e Identify and describe the lower extreme (minimum), upper extreme (maximum), median, upper quartile, lower quartile, range, and interquartile range given a data set, represented by a boxplot.	A1 M1 Lesson 18: Distributions and Their Shapes A1 M1 Lesson 19: Describing the Center of a Distribution A1 M1 Lesson 20: Using Center to Compare Data Distributions
8.PS.2.f Describe how the presence of an extreme data point (outlier) affects the shape and spread of the data distribution of a boxplot.	A1 M1 Lesson 18: Distributions and Their Shapes A1 M1 Lesson 19: Describing the Center of a Distribution A1 M1 Lesson 20: Using Center to Compare Data Distributions
8.PS.2.g Analyze data represented in a boxplot by making observations and drawing conclusions.	A1 M1 Lesson 18: Distributions and Their Shapes A1 M1 Lesson 19: Describing the Center of a Distribution A1 M1 Lesson 20: Using Center to Compare Data Distributions
8.PS.2.h Compare and analyze two data sets represented in boxplots.	A1 M1 Lesson 18: Distributions and Their Shapes A1 M1 Lesson 19: Describing the Center of a Distribution A1 M1 Lesson 20: Using Center to Compare Data Distributions
8.PS.2.i Given a contextual situation, justify which graphical representation (e.g., pictographs, bar graphs, line graphs, line plots/dot plots, stem-and-leaf plots, circle graphs, histograms, and boxplots) best represents the data.	A1 M1 Lesson 18: Distributions and Their Shapes A1 M1 Lesson 19: Describing the Center of a Distribution A1 M1 Lesson 20: Using Center to Compare Data Distributions *Supplemental material is necessary to address pictographs, bar graphs, line graphs, stem-and-leaf plots, and circle graphs.*

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math²*
8.PS.2.j Identify components of graphical displays that can be misleading.	*Supplemental material is necessary to address this standard.*

Probability and Statistics

8.PS.3 The student will apply the data cycle (formulate questions; collect or acquire data; organize and represent data; and analyze data and communicate results) with a focus on scatterplots.

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math²*
8.PS.3.a Formulate questions that require the collection or acquisition of data with a focus on scatterplots.	8 M6 Lesson 16: Using the Investigative Process 8 M6 Lesson 17: Analyzing the Model
8.PS.3.b Determine the data needed to answer a formulated question and collect the data (or acquire existing data) of no more than 20 items using various methods (e.g., observations, measurement, surveys, experiments).	8 M6 Lesson 16: Using the Investigative Process 8 M6 Lesson 17: Analyzing the Model
8.PS.3.c Organize and represent numeric bivariate data using scatterplots with and without the use of technology.	8 M6 Lesson 11: Scatter Plots 8 M6 Lesson 15: Linear Models 8 M6 Lesson 16: Using the Investigative Process

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math²*
8.PS.3.d Make observations about a set of data points in a scatterplot as having a positive linear relationship, a negative linear relationship, or no relationship.	8 M6 Lesson 11: Scatter Plots 8 M6 Lesson 12: Patterns in Scatter Plots
8.PS.3.e Analyze and justify the relationship of the quantitative bivariate data represented in scatterplots.	8 M6 Lesson 11: Scatter Plots 8 M6 Lesson 12: Patterns in Scatter Plots
8.PS.3.f Sketch the line of best fit for data represented in a scatterplot.	8 M6 Lesson 13: Informally Fitting a Line to Data 8 M6 Lesson 14: Determining an Equation of a Line Fit to Data 8 M6 Lesson 15: Linear Models 8 M6 Lesson 16: Using the Investigative Process 8 M6 Lesson 17: Analyzing the Model

Patterns, Functions, and Algebra

8.PFA.1 The student will represent, simplify, and generate equivalent algebraic expressions in one variable.

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math²*
8.PFA.1.a Represent algebraic expressions using concrete manipulatives or pictorial representations (e.g., colored chips, algebra tiles), including expressions that apply the distributive property.	*Supplemental material is necessary to address this standard.*

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math²*
8.PFA.1.b Simplify and generate equivalent algebraic expressions in one variable by applying the order of operations and properties of real numbers. Expressions may need to be expanded (using the distributive property) or require combining like terms to simplify. Expressions will include only linear and numeric terms. Coefficients and numeric terms may be rational.	7 M3 Topic A: Equivalent Expressions

Patterns, Functions, and Algebra

8.PFA.2 The student will determine whether a given relation is a function and determine the domain and range of a function.

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math²*
8.PFA.2.a Determine whether a relation, represented by a set of ordered pairs, a table, or a graph of discrete points is a function. Sets are limited to no more than 10 ordered pairs.	8 M6 Lesson 1: Motion and Speed 8 M6 Lesson 2: Definition of a Function 8 M6 Lesson 4: More Examples of Functions 8 M6 Lesson 5: Graphs of Functions and Equations
8.PFA.2.b Identify the domain and range of a function represented as a set of ordered pairs, a table, or a graph of discrete points.	A1 M3 Topic A: Functions and Their Graphs

Patterns, Functions, and Algebra

8.PFA.3 The student will represent and solve problems, including those in context, by using linear functions and analyzing their key characteristics (the value of the y-intercept (b) and the coordinates of the ordered pairs in graphs will be limited to integers).

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math²*
8.PFA.3.a Determine how adding a constant (b) to the equation of a proportional relationship $y = mx$ will translate the line on a graph.	8 M3 Lesson 17: Similar Triangles on a Line 8 M4 Lesson 16: Proportional Relationships and Slope 8 M4 Lesson 17: Slopes of Rising Lines 8 M4 Lesson 18: Slopes of Falling Lines 8 M4 Lesson 19: Using Coordinates to Find Slope 8 M4 Lesson 20: Slope-Intercept Form of the Equation of a Line
8.PFA.3.b Describe key characteristics of linear functions including slope (m), y-intercept (b), and independent and dependent variables.	8 M6 Lesson 2: Definition of a Function 8 M6 Lesson 3: Linear Functions and Proportionality 8 M6 Lesson 6: Linear Functions and Rate of Change 8 M6 Lesson 7: Interpreting Rate of Change and Initial Value
8.PFA.3.c Graph a linear function given a table, equation, or a situation in context.	8 M6 Lesson 6: Linear Functions and Rate of Change 8 M6 Lesson 7: Interpreting Rate of Change and Initial Value 8 M6 Lesson 25: Applications of Volume
8.PFA.3.d Create a table of values for a linear function given a graph, equation in the form of $y = mx + b$, or context.	8 M6 Lesson 6: Linear Functions and Rate of Change 8 M6 Lesson 7: Interpreting Rate of Change and Initial Value 8 M6 Lesson 25: Applications of Volume

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math²*
8.PFA.3.e Write an equation of a linear function in the form $y = mx + b$, given a graph, table, or a situation in context.	8 M4 Topic F: Graphing and Writing Linear Equations 8 M6 Lesson 6: Linear Functions and Rate of Change 8 M6 Lesson 7: Interpreting Rate of Change and Initial Value 8 M6 Lesson 25: Applications of Volume
8.PFA.3.f Create a context for a linear function given a graph, table, or equation in the form $y = mx + b$.	*Supplemental material is necessary to address this standard.*

Patterns, Functions, and Algebra

8.PFA.4 The student will write and solve multistep linear equations in one variable, including problems in context that require the solution of a multistep linear equation in one variable.

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math²*
8.PFA.4.a Represent and solve multistep linear equations in one variable with the variable on one or both sides of the equation (up to four steps) using a variety of concrete materials and pictorial representations.	8 M4 Lesson 1: Equations 8 M4 Lesson 2: Solving Linear Equations 8 M4 Lesson 3: Solving Linear Equations with Rational Coefficients 8 M4 Lesson 5: An Interesting Application of Linear Equations, Part 1 8 M4 Lesson 6: An Interesting Application of Linear Equations, Part 2 8 M4 Topic B: The Structure of Linear Equations in One Variable *Supplemental material is necessary to address using concrete materials and pictorial representations.*

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math²*
8.PFA.4.b Apply properties of real numbers and properties of equality to solve multistep linear equations in one variable (up to four steps). Coefficients and numeric terms will be rational. Equations may contain expressions that need to be expanded (using the distributive property) or require combining like terms to solve.	8 M4 Lesson 1: Equations 8 M4 Lesson 2: Solving Linear Equations 8 M4 Lesson 3: Solving Linear Equations with Rational Coefficients 8 M4 Lesson 5: An Interesting Application of Linear Equations, Part 1 8 M4 Lesson 6: An Interesting Application of Linear Equations, Part 2 8 M4 Lesson 7: Linear Equations with More Than One Solution 8 M4 Lesson 8: Another Possible Number of Solutions 8 M4 Lesson 10: Using Linear Equations to Solve Real-World Problems 8 M4 Lesson 11: Planning a Trip
8.PFA.4.c Write a multistep linear equation in one variable to represent a verbal situation, including those in context.	8 M4 Lesson 1: Equations 8 M4 Lesson 2: Solving Linear Equations 8 M4 Lesson 3: Solving Linear Equations with Rational Coefficients 8 M4 Lesson 4: Using Linear Equations to Solve Problems 8 M4 Lesson 7: Linear Equations with More Than One Solution 8 M4 Lesson 8: Another Possible Number of Solutions 8 M4 Lesson 10: Using Linear Equations to Solve Real-World Problems 8 M4 Lesson 11: Planning a Trip
8.PFA.4.d Create a verbal situation in context given a multistep linear equation in one variable.	*Supplemental material is necessary to address this standard.*

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math²*
8.PFA.4.e Solve problems in context that require the solution of a multistep linear equation.	8 M4 Lesson 1: Equations 8 M4 Lesson 2: Solving Linear Equations 8 M4 Lesson 3: Solving Linear Equations with Rational Coefficients 8 M4 Lesson 4: Using Linear Equations to Solve Problems 8 M4 Lesson 7: Linear Equations with More Than One Solution 8 M4 Lesson 8: Another Possible Number of Solutions 8 M4 Lesson 10: Using Linear Equations to Solve Real-World Problems 8 M4 Lesson 11: Planning a Trip
8.PFA.4.f Interpret algebraic solutions in context to linear equations in one variable.	8 M4 Lesson 1: Equations 8 M4 Lesson 2: Solving Linear Equations 8 M4 Lesson 3: Solving Linear Equations with Rational Coefficients 8 M4 Lesson 4: Using Linear Equations to Solve Problems 8 M4 Lesson 7: Linear Equations with More Than One Solution 8 M4 Lesson 8: Another Possible Number of Solutions 8 M4 Lesson 10: Using Linear Equations to Solve Real-World Problems 8 M4 Lesson 11: Planning a Trip
8.PFA.4.g Confirm algebraic solutions to linear equations in one variable.	8 M4 Lesson 1: Equations 8 M4 Lesson 2: Solving Linear Equations 8 M4 Lesson 3: Solving Linear Equations with Rational Coefficients 8 M4 Lesson 4: Using Linear Equations to Solve Problems 8 M4 Lesson 7: Linear Equations with More Than One Solution 8 M4 Lesson 8: Another Possible Number of Solutions 8 M4 Lesson 10: Using Linear Equations to Solve Real-World Problems 8 M4 Lesson 11: Planning a Trip

Patterns, Functions, and Algebra

8.PFA.5 The student will write and solve multistep linear inequalities in one variable, including problems in context that require the solution of a multistep linear inequality in one variable.

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math²*
8.PFA.5.a Apply properties of real numbers and properties of inequality to solve multistep linear inequalities (up to four steps) in one variable with the variable on one or both sides of the inequality. Coefficients and numeric terms will be rational. Inequalities may contain expressions that need to be expanded (using the distributive property) or require combining like terms to solve.	A1 M1 Lesson 13: Solving Linear Inequalities in One Variable
8.PFA.5.b Represent solutions to inequalities algebraically and graphically using a number line.	A1 M1 Lesson 13: Solving Linear Inequalities in One Variable
8.PFA.5.c Write multistep linear inequalities in one variable to represent a verbal situation, including those in context.	A1 M1 Lesson 13: Solving Linear Inequalities in One Variable
8.PFA.5.d Create a verbal situation in context given a multistep linear inequality in one variable.	*Supplemental material is necessary to address this standard.*

Mathematics Standards of Learning for Virginia Public Schools	Aligned Components of *Eureka Math²*
8.PFA.5.e Solve problems in context that require the solution of a multistep linear inequality in one variable.	A1 M1 Lesson 13: Solving Linear Inequalities in One Variable
8.PFA.5.f Identify a numerical value(s) that is part of the solution set of a given inequality.	A1 M1 Lesson 13: Solving Linear Inequalities in One Variable
8.PFA.5.g Interpret algebraic solutions in context to linear inequalities in one variable.	A1 M1 Lesson 13: Solving Linear Inequalities in One Variable