Grade 8 | South Carolina College- and Career-Ready Mathematics Standards 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 Standards	Aligned Components of *Eureka Math²*
MPS.PS.1 Make sense of problems and persevere in solving them strategically.	Lessons in every module engage students in mathematical processes. These are indicated in margin notes included with every lesson.
MPS.RC.1 Explain ideas using precise and contextually appropriate mathematical language, tools, and models.	Lessons in every module engage students in mathematical processes. These are indicated in margin notes included with every lesson.
MPS.C.1 Demonstrate a deep and flexible conceptual understanding of mathematical ideas, operations, and relationships while making real-world connections.	Lessons in every module engage students in mathematical processes. These are indicated in margin notes included with every lesson.
MPS.AJ.1 Use critical thinking skills to reason both abstractly and quantitatively.	Lessons in every module engage students in mathematical processes. These are indicated in margin notes included with every lesson.
MPS.SP.1 Identify and apply regularity in repeated reasoning to make generalizations.	Lessons in every module engage students in mathematical processes. These are indicated in margin notes included with every lesson.

Data, Probability, and Statistical Reasoning

8.DPSR.1 Analyze data sets to identify their statistical elements.

South Carolina College- and Career-Ready Mathematics Standards	Aligned Components of *Eureka Math²*
8.DPSR.1.1 Create and analyze scatter plots to represent numerical data sets in mathematical and real-world situations.	8 M6 Lesson 11: Scatter Plots 8 M6 Lesson 12: Patterns in Scatter Plots
8.DPSR.1.2 Draw inferences about data sets from two populations using the shape of the distribution, measures of center, and measures of variability. Limit measures to *mean*, *median*, *mode*, *range*, *mean absolute deviation*, and *interquartile range*.	7 M6 Lesson 17: Comparing Sample Means 7 M6 Lesson 18: Comparing Population Means 7 M6 Lesson 19: Memory Games *Supplemental material is necessary to address drawing inferences about data sets from two populations using* median, mode, range, *and* interquartile range.
8.DPSR.1.3 Describe how adding and deleting data throughout the data set can affect the mean, median, mode, and distribution of the data set.	*Supplemental material is necessary to address this standard.*

South Carolina College- and Career-Ready Mathematics Standards	Aligned Components of *Eureka Math²*
8.DPSR.1.4 For two data sets (numerical or graphical), compare and interpret the centers, spreads, and overlap of data to draw inferences about data in mathematical and real-world situations. Limit displays to double line graphs, back-to-back stem-and-leaf plots, and double box plots.	A1 M1 Lesson 20: Using Center to Compare Data Distributions A1 M1 Lesson 22: Estimating Variability in Data Distributions A1 M1 Lesson 23: Comparing Distributions of Univariate Data *Supplemental material is necessary to address comparing and interpreting data sets displayed with double line graphs and back-to-back stem-and-leaf plots.*

Data, Probability, and Statistical Reasoning

8.DPSR.2 Calculate and interpret probability.

South Carolina College- and Career-Ready Mathematics Standards	Aligned Components of *Eureka Math²*
8.DPSR.2.1 Determine the sample space for a compound event.	7 M6 Lesson 5: Multistage Experiments
8.DPSR.2.2 Calculate and interpret the probability of compound independent and dependent events.	7 M6 Lesson 5: Multistage Experiments *Supplemental material is necessary to address calculating and interpreting the probability of compound dependent events.*

Measurement, Geometry, and Spatial Reasoning

8.MGSR.1 Determine the measurements of geometric figures.

South Carolina College- and Career-Ready Mathematics Standards	Aligned Components of *Eureka Math²*
8.MGSR.1.1 Given the geometric formulas, find the volume of cones, cylinders, and spheres in mathematical and real-world situations.	8 M6 Lesson 22: Volume of Cylinders 8 M6 Lesson 23: Volume of Cones 8 M6 Lesson 24: Volume of Spheres 8 M6 Lesson 25: Applications of Volume
8.MGSR.1.2 Find the distance between any two points in the coordinate plane using the *Pythagorean Theorem*.	8 M2 Lesson 20: Distance in the Coordinate Plane 8 M2 Lesson 22: On the Right Path
8.MGSR.1.3 Given the *Pythagorean Theorem*, determine unknown side lengths in right triangles in mathematical and real-world situations.	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 M3 Lesson 16: Similar Right Triangles
8.MGSR.1.4 Determine if a given set of sides forms a right triangle.	8 M1 Lesson 18: The Pythagorean Theorem 8 M1 Lesson 19: Using the Pythagorean Theorem

Measurement, Geometry, and Spatial Reasoning

8.MGSR.2 Determine angle and/or side relationships.

South Carolina College- and Career-Ready Mathematics Standards	Aligned Components of *Eureka Math²*
8.MGSR.2.1 Determine missing angle measurements created when parallel lines are cut by a transversal.	8 M3 Lesson 12: Exploring Angles in Similar Triangles 8 M3 Lesson 14: Using Similar Figures to Find Unknown Side Lengths 8 M3 Lesson 15: Applications of Similar Figures 8 M3 Lesson 16: Similar Right Triangles
8.MGSR.2.2 Determine if two-dimensional figures are congruent or similar.	8 M2 Lesson 10: Congruent Figures 8 M2 Lesson 11: Showing Figures Are Congruent 8 M3 Lesson 11: Similar Figures 8 M3 Lesson 12: Exploring Angles in Similar Triangles 8 M3 Lesson 13: Similar Triangles
8.MGSR.2.3 Identify the congruent corresponding angles of similar polygons.	8 M3 Lesson 11: Similar Figures 8 M3 Lesson 12: Exploring Angles in Similar Triangles 8 M3 Lesson 13: Similar Triangles
8.MGSR.2.4 Discover and apply the *Exterior Angle Theorem* of triangles to find a missing angle.	8 M2 Lesson 15: Exterior Angles of Triangles 8 M2 Lesson 16: Find Unknown Angle Measures
8.MGSR.2.5 Apply proportional reasoning to find the missing side lengths of two similar figures.	8 M3 Lesson 14: Using Similar Figures to Find Unknown Side Lengths 8 M3 Lesson 15: Applications of Similar Figures 8 M3 Lesson 16: Similar Right Triangles

Measurement, Geometry, and Spatial Reasoning

8.MGSR.3 Graph on a coordinate plane.

South Carolina College- and Career-Ready Mathematics Standards	Aligned Components of *Eureka Math²*
8.MGSR.3.1 Identify the transformation as a rotation, reflection, and/or translation. Limit rotations to multiples of 90 degrees centered on the origin.	8 M2 Lesson 1: Motions of the Plane 8 M2 Lesson 2: Translations 8 M2 Lesson 3: Reflections 8 M2 Lesson 5: Rotations
8.MGSR.3.2 Identify congruent angles and congruent line segments of a preimage and its image.	8 M2 Topic B: Rigid Motions and Congruent Figures 8 M2 Lesson 12: Lines Cut by a Transversal
8.MGSR.3.3 Translate geometric figures vertically and/or horizontally.	8 M2 Lesson 1: Motions of the Plane 8 M2 Lesson 2: Translations
8.MGSR.3.4 Reflect geometric figures with respect to the x-axis and/or y-axis.	8 M2 Lesson 1: Motions of the Plane 8 M2 Lesson 3: Reflections
8.MGSR.3.5 Rotate geometric figures 90, 180, and 270 degrees, both clockwise and counterclockwise, about the origin in a coordinate plane.	8 M2 Lesson 1: Motions of the Plane 8 M2 Lesson 5: Rotations

South Carolina College- and Career-Ready Mathematics Standards	Aligned Components of *Eureka Math²*
8.MGSR.3.6 Create a dilation using a given scale factor and describe the effect of a dilation.	8 M3 Topic A: Dilations 8 M3 Topic B: Properties of Dilations 8 M3 Lesson 9: Describing Dilations 8 M3 Lesson 10: Sequencing Transformations 8 M3 Lesson 16: Similar Right Triangles
8.MGSR.3.7 Describe the effect of a series of transformations, including *dilations*, *translations*, *rotations*, and *reflections*, on two-dimensional figures using coordinates on the coordinate plane.	8 M2 Lesson 4: Translations and Reflections on the Coordinate Plane 8 M2 Lesson 6: Rotations on the Coordinate Plane 8 M2 Lesson 9: Ordering Sequences of Rigid Motions 8 M3 Lesson 8: Dilations on the Coordinate Plane 8 M3 Lesson 9: Describing Dilations 8 M3 Lesson 10: Sequencing Transformations

Numerical Reasoning

8.NR.1 Translate among multiple representations of rational numbers.

South Carolina College- and Career-Ready Mathematics Standards	Aligned Components of *Eureka Math²*
8.NR.1.1 Convert any form of a rational number to any other form including fractions (mixed numbers), decimals, and percentages.	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 7 M5 Lesson 2: Racing for Percents 7 M5 Lesson 7: Finding Discounts 7 M5 Lesson 14: Scale Factor—Percent Increase and Decrease 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

Numerical Reasoning

8.NR.2 Utilize real numbers in mathematical and real-world situations.

South Carolina College- and Career-Ready Mathematics Standards	Aligned Components of *Eureka Math²*
8.NR.2.1 Compare real numbers and write statements using *is equal to* (=), *is not equal to* (≠), *is less than* (<), *is greater than* (>), *is greater than or equal to* (≥), or *is less than or equal to* (≤).	8 M1 Lesson 23: Ordering Irrational Numbers *Supplemental material is necessary to fully address this standard.*

South Carolina College- and Career-Ready Mathematics Standards	Aligned Components of *Eureka Math²*
8.NR.2.2 Classify and order the subsets of real numbers in the number system including natural, whole, integer, rational, and irrational numbers.	8 M1 Lesson 22: Familiar and Not So Familiar Numbers *Supplemental material is necessary to address natural numbers, whole numbers, and integers.*

Patterns, Algebra, and Functional Reasoning

8.PAFR.1 Determine if a table, graph, verbal description, or equation represents a function and describe its characteristics.

South Carolina College- and Career-Ready Mathematics Standards	Aligned Components of *Eureka Math²*
8.PAFR.1.1 Define an equation in slope-intercept form ($y = mx + b$) as being a linear function.	8 M6 Lesson 3: Linear Functions and Proportionality 8 M6 Lesson 6: Linear Functions and Rate of Change 8 M6 Lesson 10: Graphs of Nonlinear Functions
8.PAFR.1.2 Identify and describe the constant rate of change and the y-intercept of a linear function.	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.PAFR.1.3 Determine if a graph, table, mapping, or verbal description is a function (linear or nonlinear) or not a function.	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

South Carolina College- and Career-Ready Mathematics Standards	Aligned Components of *Eureka Math²*
8.PAFR.1.4 Describe the key features of given functions, including *domain*, *range*, *intervals of increasing or decreasing*, *constant*, *discrete*, *continuous*, and *intercepts*.	A1 M3 Lesson 7: Exploring Key Features of a Function and Its Graph A1 M3 Lesson 8: Identifying Key Features of a Function and Its Graph A1 M3 Lesson 9: Representing Functions from Verbal Descriptions A1 M3 Lesson 11: Comparing Functions A1 M3 Lesson 12: Mars Curiosity Rover A1 M3 Lesson 13: Modeling Elevation as a Function of Time *Supplemental material is necessary to address describing key features of given functions using the terms* discrete *and* continuous.
8.PAFR.1.5 Use multiple representations including mappings, tables, graphs, verbal description, and equations (only when linear) of two functions to compare the functions and draw conclusions.	8 M6 Lesson 7: Interpreting Rate of Change and Initial Value 8 M6 Lesson 8: Comparing Functions
8.PAFR.1.6 Translate among the multiple representations, including mappings, tables, graphs, verbal description, and equations (only when linear) of a function.	A1 M3 Lesson 6: Representations of Functions

Patterns, Algebra, and Functional Reasoning

8.PAFR.2 Write, simplify, and evaluate algebraic expressions; write and solve algebraic equations and inequalities.

South Carolina College- and Career-Ready Mathematics Standards	Aligned Components of *Eureka Math²*
8.PAFR.2.1 Solve multi-step one-variable equations and inequalities with variables on both sides with rational coefficients.	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 A1 M1 Lesson 13: Solving Linear Inequalities in One Variable
8.PAFR.2.2 Describe single-variable equations as having one solution, no solution, or an infinite number of solutions.	8 M4 Lesson 7: Linear Equations with More Than One Solution 8 M4 Lesson 8: Another Possible Number of Solutions 8 M4 Lesson 9: Writing Linear Equations 8 M4 Lesson 10: Using Linear Equations to Solve Real-World Problems
8.PAFR.2.3 Identify the rate of change for a linear function as the slope of the line.	8 M4 Lesson 16: Proportional Relationships and Slope

South Carolina College- and Career-Ready Mathematics Standards	Aligned Components of *Eureka Math²*
8.PAFR.2.4 Explain why the slope, m, is the same between any two distinct points on a linear graph.	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.PAFR.2.5 Given a table or a graph, identify the slope and the y-intercept of a line and write a linear equation to express that line.	8 M4 Lesson 20: Slope-Intercept Form of the Equation of a Line 8 M4 Lesson 23: Comparing Equations in Different Forms 8 M4 Lesson 24: The Patterns, the Pops, and the Pastries 8 M4 Lesson 25: Lines, Lines, and More Lines 8 M6 Lesson 6: Linear Functions and Rate of Change

Patterns, Algebra, and Functional Reasoning

8.PAFR.3 Apply mathematical patterns, properties, and algorithms to the set of rational numbers to find sums, differences, products, and quotients and to write equivalent expressions.

South Carolina College- and Career-Ready Mathematics Standards	Aligned Components of *Eureka Math²*
8.PAFR.3.1 Analyze patterns of perfect squares and perfect cubes to evaluate square roots and cube roots. Limit to square roots less than or equal to 400 and cube roots less than or equal to $1{,}000$.	8 M1 Lesson 16: Perfect Squares and Perfect Cubes 8 M1 Lesson 17: Solving Equations with Squares and Cubes

South Carolina College- and Career-Ready Mathematics Standards	Aligned Components of *Eureka Math²*
8.PAFR.3.2 Approximate non-perfect square roots and cube roots to the nearest tenth. Limit to square roots less than or equal to 400 and cube roots less than or equal to $1{,}000$.	8 M1 Lesson 21: Approximating Values of Roots and π^2 8 M1 Lesson 23: Ordering Irrational Numbers
8.PAFR.3.3 Apply laws of exponents to simplify algebraic expressions involving no more than three variables and integer exponents.	8 M1 Topic B: Properties and Definitions of Exponents