EUREKA MATH™

GREAT MINDS

ABOUT *EUREKA MATH*

Created by the nonprofit Great Minds, *Eureka Math* helps teachers deliver unparalleled math instruction that provides students with a deep understanding and fluency in math. Crafted by teachers and math scholars, the curriculum carefully sequences the mathematical progressions to maximize coherence from Prekindergarten through Precalculus—a principle tested and proven to be essential in students' mastery of math.

Teachers and students using *Eureka Math* find the trademark "Aha!" moments in *Eureka Math* to be a source of joy and inspiration, lesson after lesson, year after year.

ALIGNED

Eureka Math is the only curriculum found by EdReports.org to align fully with the Common Core State Standards for Mathematics for all grades, Kindergarten through Grade 8. Great Minds offers detailed analyses which demonstrate how each grade of *Eureka Math* aligns with specific state standards. Access these free alignment studies at greatminds.org/state-studies.

DATA

Schools and districts nationwide are experiencing student growth and impressive test scores after using *Eureka Math*. See their stories and data at greatminds.org/data.

FULL SUITE OF RESOURCES

As a nonprofit, Great Minds offers the *Eureka Math* curriculum as PDF downloads for free, noncommercial use. Access the free PDFs at greatminds.org/math/curriculum.

The teacher–writers who created the curriculum have also developed essential resources, available only from Great Minds, including the following:

- Printed material in English and Spanish
- Digital resources
- Professional development
- Classroom tools and manipulatives
- Teacher support materials
- Parent resources

GRADE 6 MATHEMATICS

The majority of the Grade 6 South Carolina College- and Career-Ready Standards for Mathematics are fully covered by the Grade 6 *Eureka Math* curriculum. The areas where the Grade 6 South Carolina College- and Career-Ready Standards for Mathematics and Grade 6 *Eureka Math* do not align will require the use of supplemental materials. A detailed analysis of alignment is provided in the table below. With strategic placement of supplemental materials, *Eureka Math* can ensure students are successful in achieving the proficiencies of the South Carolina College- and Career-Ready Standards for Mathematics while still benefiting from the coherence and rigor of *Eureka Math*.

INDICATORS

- Green indicates that the South Carolina standard is fully addressed in *Eureka Math*.
- Yellow indicates that the South Carolina standard may not be completely addressed in *Eureka Math*.
- Red indicates that the South Carolina standard is not addressed in *Eureka Math*.
- Blue indicates there is a discrepancy between the grade level at which this standard is addressed in the South Carolina standards and in *Eureka Math*.

Mathematical Process Standards	Aligned Components of *Eureka Math*
1: Make sense of problems and persevere in solving them. a. Relate a problem to prior knowledge. b. Recognize there may be multiple entry points to a problem and more than one path to a solution. c. Analyze what is given, what is not given, what is being asked, and what strategies are needed, and make an initial attempt to solve a problem. d. Evaluate the success of an approach to solve a problem and refine it if necessary.	Lessons in every module engage students in making sense of problems and persevering in solving them as required by this standard. This process standard is analogous to the CCSSM Standards for Mathematical Practice 1, which is specifically addressed in the following modules: G6 M1: Ratios and Unit Rates G6 M2: Arithmetic Operations Including Division of Fractions G6 M5: Area, Surface Area, and Volume Problems G6 M6: Statistics
2: Reason both contextually and abstractly. a. Make sense of quantities and their relationships in mathematical and real-world situations. b. Describe a given situation using multiple mathematical representations. c. Translate among multiple mathematical representations and compare the meanings each representation conveys about the situation. d. Connect the meaning of mathematical operations to the context of a given situation.	Lessons in every module engage students in reasoning abstractly and quantitatively as required by this standard. This process standard is analogous to the CCSSM Standards for Mathematical Practice 2, which is specifically addressed in the following modules: G6 M1: Ratios and Unit Rates G6 M2: Arithmetic Operations Including Division of Fractions G6 M3: Rational Numbers G6 M4: Expressions and Equations G6 M6: Statistics

Mathematical Process Standards	Aligned Components of *Eureka Math*
3: Use critical thinking skills to justify mathematical reasoning and critique the reasoning of others. a. Construct and justify a solution to a problem. b. Compare and discuss the validity of various reasoning strategies. c. Make conjectures and explore their validity. d. Reflect on and provide thoughtful responses to the reasoning of others.	Lessons in every module engage students in constructing viable arguments and critiquing the reasoning of others as required by this standard. This process standard is analogous to the CCSSM Standards for Mathematical Practice 3, which is specifically addressed in the following modules: G6 M5: Area, Surface Area, and Volume Problems G6 M6: Statistics
4: Connect mathematical ideas and real-world situations through modeling. a. Identify relevant quantities and develop a model to describe their relationships. b. Interpret mathematical models in the context of the situation. c. Make assumptions and estimates to simplify complicated situations. d. Evaluate the reasonableness of a model and refine if necessary.	Lessons in every module engage students in modeling with mathematics as required by this standard. This process standard is analogous to the CCSSM Standards for Mathematical Practice 4, which is specifically addressed in the following modules: G6 M3: Rational Numbers G6 M5: Area, Surface Area, and Volume Problems G6 M6: Statistics
5: Use a variety of mathematical tools effectively and strategically. a. Select and use appropriate tools when solving a mathematical problem. b. Use technological tools and other external mathematical resources to explore and deepen understanding of concepts.	Lessons in every module engage students in using appropriate tools strategically as required by this standard. This process standard is analogous to the CCSSM Standards for Mathematical Practice 5, which is specifically addressed in the following modules: G6 M1: Ratios and Unit Rates

Mathematical Process Standards	Aligned Components of *Eureka Math*
6: Communicate mathematically and approach mathematical situations with precision. a. Express numerical answers with the degree of precision appropriate for the context of a situation. b. Represent numbers in an appropriate form according to the context of the situation. c. Use appropriate and precise mathematical language. d. Use appropriate units, scales, and labels.	Lessons in every module engage students in attending to precision as required by this standard. This process standard is analogous to the CCSSM Standards for Mathematical Practice 6, which is specifically addressed in the following modules: G6 M1: Ratios and Unit Rates G6 M2: Arithmetic Operations Including Division of Fractions G6 M3: Rational Numbers G6 M4: Expressions and Equations G6 M5: Area, Surface Area, and Volume Problems G6 M6: Statistics
7: Identify and utilize structure and patterns. a. Recognize complex mathematical objects as being composed of more than one simple object. b. Recognize mathematical repetition in order to make generalizations. c. Look for structures to interpret meaning and develop solution strategies.	Lessons in every module engage students in looking for and making use of structure as required by this standard. This process standard is analogous to the CCSSM Standards for Mathematical Practice 7 and 8, which are specifically addressed in the following modules: G6 M1: Ratios and Unit Rates G6 M2: Arithmetic Operations Including Division of Fractions G6 M3: Rational Numbers G6 M4: Expressions and Equations

Key Concepts	Content Standards for Mathematics		Aligned Components of *Eureka Math*
The Number System	**6.NS.1** Compute and represent quotients of positive fractions using a variety of procedures (e.g., visual models, equations, and real-world situations).		G6 M2 Topic A: Dividing Fractions by Fractions
	6.NS.2 Fluently divide multi-digit whole numbers using a standard algorithmic approach.		G6 M2 Topic C: Dividing Whole Numbers and Decimals
	6.NS.3 Fluently add, subtract, multiply, and divide multi-digit decimal numbers using a standard algorithmic approach.		G6 M2: Arithmetic Operations Including Division of Fractions
	6.NS.4 Find common factors and multiples using two whole numbers.		
	a. Compute the greatest common factor (GCF) of two numbers both less than or equal to 100.		G6 M2 Topic D: Number Theory—Thinking Logically About Multiplicative Arithmetic
	b. Compute the least common multiple (LCM) of two numbers both less than or equal to 12.		G6 M2 Topic D: Number Theory—Thinking Logically About Multiplicative Arithmetic

Key Concepts	Content Standards for Mathematics		Aligned Components of *Eureka Math*
	c. Express sums of two whole numbers, each less than or equal to 100, using the distributive property to factor out a common factor of the original addends.		G6 M4 Lesson 11: Factoring Expressions G6 M4 Lesson 12: Distributing Expressions Note: Supplemental material is necessary to completely address this standard.
	6.NS.5 Understand that the positive and negative representations of a number are opposites in direction and value. Use integers to represent quantities in real-world situations and explain the meaning of zero in each situation.		G6 M3 Topic A: Understanding Positive and Negative Numbers on the Number Line G6 M3 Lesson 13: Statements of Order in the Real World
	6.NS.6 Extend the understanding of the number line to include all rational numbers and apply this concept to the coordinate plane.		
	a. Understand the concept of opposite numbers, including zero, and their relative locations on the number line.		G6 M3 Lesson 4: The Opposite of a Number G6 M3 Lesson 5: The Opposite of a Number's Opposite
	b. Understand that the signs of the coordinates in ordered pairs indicate their location on an axis or in a quadrant on the coordinate plane.		G6 M3 Topic C: Rational Numbers and the Coordinate Plane
	c. Recognize when ordered pairs are reflections of each other on the coordinate plane across one axis, both axes, or the origin.		G6 M3 Topic C: Rational Numbers and the Coordinate Plane

Key Concepts	Content Standards for Mathematics		Aligned Components of *Eureka Math*
	d. Plot rational numbers on number lines and ordered pairs on coordinate planes.		G6 M3: Rational Numbers
	6.NS.7 Understand and apply the concepts of comparing, ordering, and finding absolute value to rational numbers.		
	a. Interpret statements using equal to (=) and not equal to (≠).		G6 M3: Rational Numbers Note: Supplemental material is necessary to incorporate not equal to (≠).
	b. Interpret statements using less than (<), greater than (>), and equal to (=) as relative locations on the number line.		G6 M3 Topic B: Order and Absolute Value
	c. Use concepts of equality and inequality to write and to explain real-world and mathematical situations.		G6 M3 Topic B: Order and Absolute Value
	d. Understand that absolute value represents a number's distance from zero on the number line and use the absolute value of a rational number to represent real-world situations.		G6 M3 Lesson 11: Absolute Value—Magnitude and Distance G6 M3 Lesson 13: Statements of Order in the Real World

Key Concepts	Content Standards for Mathematics		Aligned Components of *Eureka Math*
	e. Recognize the difference between comparing absolute values and ordering rational numbers. For negative rational numbers, understand that as the absolute value increases, the value of the negative number decreases.		G6 M3 Lesson 11: Absolute Value—Magnitude and Distance G6 M3 Lesson 12: The Relationship Between Absolute Value and Order G6 M3 Lesson 13: Statements of Order in the Real World
	6.NS.8 Extend knowledge of the coordinate plane to solve real-world and mathematical problems involving rational numbers.		
	a. Plot points in all four quadrants to represent the problem.		G6 M3 Topic C: Rational Numbers and the Coordinate Plane
	b. Find the distance between two points when ordered pairs have the same x-coordinates or same y-coordinates.		G6 M3 Topic C: Rational Numbers and the Coordinate Plane G6 M5 Topic B: Polygons on the Coordinate Plane
	c. Relate finding the distance between two points in a coordinate plane to absolute value using a number line.		G6 M3 Topic C: Rational Numbers and the Coordinate Plane
	6.NS.9 Investigate and translate among multiple representations of rational numbers (fractions, decimal numbers, percentages). Fractions should be limited to those with denominators of 2, 3, 4, 5, 8, 10, and 100.		G6 M1 Topic D: Percent

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Ratios and Proportional Relationships	**6.RP.1** Interpret the concept of a ratio as the relationship between two quantities, including part to part and part to whole.		G6 M1: Ratios and Unit Rates
	6.RP.2 Investigate relationships between ratios and rates.		
	a. Translate between multiple representations of ratios (i.e., a/b, $a:b$, a to b, visual models).		G6 M1: Ratios and Unit Rates
	b. Recognize that a rate is a type of ratio involving two different units.		G6 M1 Topic C: Unit Rates
	c. Convert from rates to unit rates.		G6 M1 Topic C: Unit Rates
	6.RP.3 Apply the concepts of ratios and rates to solve real-world and mathematical problems.		
	a. Create a table consisting of equivalent ratios and plot the results on the coordinate plane.		G6 M1 Topic B: Collections of Equivalent Ratios G6 M3 Topic C: Rational Numbers and the Coordinate Plane
	b. Use multiple representations, including tape diagrams, tables, double number lines, and equations, to find missing values of equivalent ratios.		G6 M1 Topic B: Collections of Equivalent Ratios
	c. Use two tables to compare related ratios.		G6 M1 Topic B: Collections of Equivalent Ratios

Key Concepts	Content Standards for Mathematics		Aligned Components of *Eureka Math*
	d. Apply concepts of unit rate to solve problems, including unit pricing and constant speed.		G6 M1 Topic C: Unit Rates
	e. Understand that a percentage is a rate per 100 and use this to solve problems involving wholes, parts, and percentages.		G6 M1 Topic D: Percent
	f. Solve one-step problems involving ratios and unit rates (e.g., dimensional analysis).		G6 M1: Ratios and Unit Rates
Expressions, Equations, and Inequalities	**6.EEI.1** Write and evaluate numerical expressions involving whole-number exponents and positive rational number bases using the Order of Operations.		G6 M4 Topic B: Special Notations of Operations G6 M4 Lesson 16: Write Expressions in Which Letters Stand for Numbers
	6.EEI.2 Extend the concepts of numerical expressions to algebraic expressions involving positive rational numbers.		
	a. Translate between algebraic expressions and verbal phrases that include variables.		G6 M4 Topic D: Expanding, Factoring, and Distributing Expressions G6 M4 Topic E: Expressing Operations in Algebraic Form G6 M4 Topic F: Writing and Evaluating Expressions and Formulas

Key Concepts	Content Standards for Mathematics		Aligned Components of *Eureka Math*
	b. Investigate and identify parts of algebraic expressions using mathematical terminology, including term, coefficient, constant, and factor.		G6 M4 Topic D: Expanding, Factoring, and Distributing Expressions G6 M4 Topic E: Expressing Operations in Algebraic Form
	c. Evaluate real-world and algebraic expressions for specific values using the Order of Operations. Grouping symbols should be limited to parentheses, braces, and brackets. Exponents should be limited to whole numbers.		G6 M4 Topic B: Special Notations of Operations G6 M4 Topic C: Replacing Letters and Numbers
	6.EEI.3 Apply mathematical properties (e.g., commutative, associative, distributive) to generate equivalent expressions.		G6 M4 Topic A: Relationships of the Operations G6 M4 Topic D: Expanding, Factoring, and Distributing Expressions
	6.EEI.4 Apply mathematical properties (e.g., commutative, associative, distributive) to justify that two expressions are equivalent.		G6 M4 Topic C: Replacing Letters and Numbers G6 M4 Topic D: Expanding, Factoring, and Distributing Expressions
	6.EEI.5 Understand that if any solutions exist, the solution set for an equation or inequality consists of values that make the equation or inequality true.		G6 M4 Topic G: Solving Equations G6 M4 Topic H: Applications of Equations

Key Concepts	Content Standards for Mathematics		Aligned Components of *Eureka Math*
	6.EEI.6 Write expressions using variables to represent quantities in real-world and mathematical situations. Understand the meaning of the variable in the context of the situation.		G6 M4 Topic F: Writing and Evaluating Expressions and Formulas G6 M4 Topic G: Solving Equations G6 M4 Topic H: Applications of Equations
	6.EEI.7 Write and solve one-step linear equations in one variable involving nonnegative rational numbers for real-world and mathematical situations.		G6 M4 Topic G: Solving Equations G6 M4 Topic H: Applications of Equations
	6.EEI.8 Extend knowledge of inequalities used to compare numerical expressions to include algebraic expressions in real-world and mathematical situations.		
	a. Write an inequality of the form $x > c$ or $x < c$ and graph the solution set on a number line.		G6 M4 Lesson 33: From Equations to Inequalities G6 M4 Lesson 34: Writing and Graphing Inequalities in Real-World Problems
	b. Recognize that inequalities have infinitely many solutions.		G6 M4 Topic G: Solving Equations G6 M4 Topic H: Applications of Equations

Key Concepts	Content Standards for Mathematics		Aligned Components of *Eureka Math*
	6.EEI.9 Investigate multiple representations of relationships in real-world and mathematical situations.		
	a. Write an equation that models a relationship between independent and dependent variables.		G6 M4 Lesson 31: Problems in Mathematical Terms G6 M4 Lesson 32: Multi-Step Problems in the Real World
	b. Analyze the relationship between independent and dependent variables using graphs and tables.		G6 M4 Lesson 31: Problems in Mathematical Terms G6 M4 Lesson 32: Multi-Step Problems in the Real World
	c. Translate among graphs, tables, and equations.		G6 M1: Ratios and Unit Rates
Geometry and Measurement	**6.GM.1** Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.		G6 M5: Area, Surface Area, and Volume Problems
	6.GM.2 Use visual models (e.g., model by packing) to discover that the formulas for the volume of a right rectangular prism ($V = lwh$, $V = Bh$) are the same for whole or fractional edge lengths. Apply these formulas to solve real-world and mathematical problems.		G6 M5 Topic C: Volume of Right Rectangular Prisms G6 M5 Lesson 19: Surface Area and Volume in the Real World G6 M5 Lesson 19a: Addendum Lesson for Modeling—Applying Surface Area and Volume to Aquariums

Key Concepts	Content Standards for Mathematics		Aligned Components of *Eureka Math*
	6.GM.3 Apply the concepts of polygons and the coordinate plane to real-world and mathematical situations.		
	a. Given coordinates of the vertices, draw a polygon in the coordinate plane.		G6 M3 Topic C: Rational Numbers and the Coordinate Plane G6 M5 Topic B: Polygons on the Coordinate Plane
	b. Find the length of an edge if the vertices have the same *x*-coordinates or same *y*-coordinates.		G6 M5 Topic B: Polygons on the Coordinate Plane
	6.GM.4 Unfold three-dimensional figures into two-dimensional rectangles and triangles (nets) to find the surface area and to solve real-world mathematical problems.		G6 M5 Topic D: Nets and Surface Area
Data Analysis and Statistics	**6.DS.1** Differentiate between statistical and non-statistical questions.		G6 M6 Lesson 1: Posing Statistical Questions
	6.DS.2 Use center (mean, median, mode), spread (range, interquartile range, mean absolute value), and shape (symmetrical, skewed left, skewed right) to describe the distribution of a set of data collected to answer a statistical question.		G6 M6: Statistics Note: Supplemental material is necessary to address mode.

Key Concepts	Content Standards for Mathematics		Aligned Components of *Eureka Math*
	6.DS.3 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.		G6 M6: Statistics
	6.DS.4 Select and create an appropriate display for numerical data, including dot plots, histograms, and box plots.		G6 M6: Statistics
	6.DS.5 Describe numerical data sets in relation to their real-world context.		
	a. State the sample size.		G6 M6: Statistics
	b. Describe the qualitative aspects of the data (e.g., how it was measured, units of measurement).		G6 M6: Statistics
	c. Give measures of center (median, mean).		G6 M6: Statistics
	d. Find measures of variability (interquartile range, mean absolute deviation) using a number line.		G6 M6: Statistics
	e. Describe the overall pattern (shape) of the distribution.		G6 M6: Statistics

Key Concepts	Content Standards for Mathematics		Aligned Components of *Eureka Math*
	f. Justify the choices for measure of center and measure of variability based on the shape of the distribution.		G6 M6: Statistics
	g. Describe the impact that inserting or deleting a data point has on the measures of center (median, mean) for a data set.		G6 M6: Statistics