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 that 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 academic 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

North Carolina Standard Course of Study Mathematics Correlation to *Eureka Math*®

GRADE 6 MATHEMATICS

The majority of the Grade 6 North Carolina Standard Course of Study for Mathematics is fully covered by the Grade 6 *Eureka Math* curriculum. The areas where the Grade 6 North Carolina Standard Course of Study for Mathematics and Grade 6 *Eureka Math* do not align are in the domain of The Number System. Standards from this domain will require the use of *Eureka Math* content from other grade levels or 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 Grade 6 North Carolina Standard Course of Study for Mathematics while still benefiting from the coherence and rigor of *Eureka Math*.

INDICATORS

GREEN	indicates the North Carolina standard is addressed in *Eureka Math*.
YELLOW	indicates the North Carolina standard may not be completely addressed in *Eureka Math*.
RED	indicates the North 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 North Carolina and in *Eureka Math*.

Standards for Mathematical Practice	Aligned Components of *Eureka Math*
1. Make sense of problems and persevere in solving them. In grade 6, students solve real world problems through the application of algebraic and geometric concepts. These problems involve ratio, rate, area and statistics. Students seek the meaning of a problem and look for efficient ways to represent and solve it. They may check their thinking by asking themselves, "What is the most efficient way to solve the problem?", "Does this make sense?", and "Can I solve the problem in a different way?" Students can explain the relationships between equations, verbal descriptions, tables and graphs. Mathematically proficient students check answers to problems using a different method.	Lessons in every module engage students in making sense of problems and persevering in solving them as required by this standard. This practice 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 abstractly and quantitatively. In grade 6, students represent a wide variety of real world contexts through the use of numbers and variables in mathematical expressions, equations, and inequalities. Students contextualize to understand the meaning of the number or variable as related to the problem and decontextualize to manipulate symbolic representations by applying properties of operations.	Lessons in every module engage students in reasoning abstractly and quantitatively as required by this standard. This practice 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

Standards for Mathematical Practice	Aligned Components of *Eureka Math*
3. Construct viable arguments and critique the reasoning of others. In grade 6, students construct arguments using verbal or written explanations accompanied by expressions, equations, inequalities, models, and graphs, tables, and other data displays (i.e., box plots, dot plots, histograms, etc.). They further refine their mathematical communication skills through mathematical discussions in which they critically evaluate their own thinking and the thinking of other students. They pose questions like "How did you get that?", "Why is that true?" "Does that always work?" They explain their thinking to others and respond to others' thinking.	Lessons in every module engage students in constructing viable arguments and critiquing the reasoning of others as required by this standard. This practice 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. Model with mathematics. In grade 6, students model problem situations symbolically, graphically, tabularly, and contextually. Students form expressions, equations, or inequalities from real world contexts and connect symbolic and graphical representations. Students begin to explore covariance and represent two quantities simultaneously. Students use number lines to compare numbers and represent inequalities. They use measures of center and descriptions of variability of data displays (i.e., box plots and histograms) to summarize and describe data. Students need many opportunities to connect and explain the connections between the different representations. They should be able to use all of these representations as appropriate to a problem context.	Lessons in every module engage students in modeling with mathematics as required by this standard. This practice 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

Standards for Mathematical Practice	Aligned Components of *Eureka Math*
5. Use appropriate tools strategically. Students consider available tools (including estimation and technology) when solving a mathematical problem and decide when certain tools might be helpful. For instance, students in grade 6 may decide to represent figures on the coordinate plane to calculate area. Number lines are used to understand division and to create dot plots, histograms and box plots to visually compare the center and variability of the data. Additionally, students might use physical objects or applets to construct nets and calculate the surface area of three-dimensional figures.	Lessons in every module engage students in using appropriate tools strategically as required by this standard. This practice 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 G6 M5: Area, Surface Area, and Volume Problems
6. Attend to precision. In grade 6, students continue to refine their mathematical communication skills by using clear and precise language in their discussions with others and in their own reasoning. Students use appropriate terminology when referring to rates, ratios, geometric figures, data displays, and components of expressions, equations or inequalities.	Lessons in every module engage students in attending to precision as required by this standard. This practice 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

Standards for Mathematical Practice	Aligned Components of *Eureka Math*
7. Look for and make use of structure. Students routinely seek patterns or structures to model and solve problems. For instance, students recognize patterns that exist in ratio tables recognizing both the additive and multiplicative properties. Students apply properties to generate equivalent expressions (i.e. $6 + 2x = 2(3 + x)$ by distributive property) and solve equations (i.e. $2c + 3 = 15$, $2c = 12$ by subtraction property of equality, $c = 6$ by division property of equality).	Lessons in every module engage students in looking for and making use of structure as required by this standard. This practice standard is analogous to the CCSSM Standards for Mathematical Practice 7, 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
8. Look for and express regularity in repeated reasoning. In grade 6, students use repeated reasoning to understand algorithms and make generalizations about patterns. During multiple opportunities to solve and model problems, they may notice that $a/b \div c/d = ad/bc$ and construct other examples and models that confirm their generalization. Students connect place value and their prior work with operations to understand algorithms to fluently divide multi-digit numbers and perform all operations with multi-digit decimals. Students informally begin to make connections between covariance, rates, and representations showing the relationships between quantities.	Lessons in every module engage students in looking for and expressing regularity in repeated reasoning as required by this standard. This practice standard is analogous to the CCSSM Standards for Mathematical Practice 8, which is specifically addressed in the following modules: G6 M2: Arithmetic Operations Including Division of Fractions G6 M4: Expressions and Equations

Domain	Standards for Mathematical Content	Aligned Components of *Eureka Math*
Ratio and Proportional Relationship	**Cluster: Understand ratio concepts and use ratio reasoning to solve problems.**	
	NC.6.RP.1 Understand the concept of a ratio and use ratio language to: • Describe a ratio as a multiplicative relationship between two quantities. • Model a ratio relationship using a variety of representations.	G6 M1 Lesson 1: Ratios G6 M1 Lesson 2: Ratios
	NC.6.RP.2 Understand that ratios can be expressed as equivalent unit ratios by finding and interpreting both unit ratios in context.	G6 M1 Topic C: Unit Rates
	NC.6.RP.3 Use ratio reasoning with equivalent whole-number ratios to solve real-world and mathematical problems by: • Creating and using a table to compare ratios. • Finding missing values in the tables. • Using a unit ratio. • Converting and manipulating measurements using given ratios. • Plotting the pairs of values on the coordinate plane.	G6 M1 Lesson 14: From Ratio Tables, Equations, and Double Number Line Diagrams to Plots on the Coordinate Plane G6 M1 Lesson 15: A Synthesis of Representations of Equivalent Ratio Collections G6 M1 Topic C: Unit Rates

Domain	Standards for Mathematical Content	Aligned Components of *Eureka Math*
	NC.6.RP.4 Use ratio reasoning to solve real-world and mathematical problems with percents by: • Understanding and finding a percent of a quantity as a ratio per 100. • Using equivalent ratios, such as benchmark percents (50%, 25%, 10%, 5%, 1%), to determine a part of any given quantity. • Finding the whole, given a part and the percent.	G6 M1 Topic D: Percent
The Number System	**Cluster: Apply and extend previous understandings of multiplication and division to divide fractions by fractions.**	
	NC.6.NS.1 Use visual models and common denominators to: • Interpret and compute quotients of fractions. • Solve real-world and mathematical problems involving division of fractions.	G6 M2 Topic A: Dividing Fractions by Fractions
	Cluster: Compute fluently with multi-digit numbers and find common factors and multiples.	
	NC.6.NS.2 Fluently divide using long division with a minimum of a four-digit dividend and interpret the quotient and remainder in context.	G6 M2 Lesson 12: Estimating Digits in a Quotient G6 M2 Lesson 13: Dividing Multi-Digit Numbers Using the Algorithm

Domain	Standards for Mathematical Content	Aligned Components of *Eureka Math*
	NC.6.NS.3 Apply and extend previous understandings of decimals to develop and fluently use the standard algorithms for addition, subtraction, multiplication and division of decimals.	G6 M2 Topic B: Multi-Digit Decimal Operations—Adding, Subtracting, and Multiplying G6 M2 Lesson 14: The Division Algorithm—Converting Decimal Division into Whole Number Division Using Fractions G6 M2 Lesson 15: The Division Algorithm—Converting Decimal Division to Whole Number Division Using Mental Math
	NC.6.NS.4 Understand and use prime factorization and the relationships between factors to: • Find the unique prime factorization for a whole number. • Find the greatest common factor of two whole numbers less than or equal to 100. • Use the greatest common factor and the distributive property to rewrite the sum of two whole numbers, each less than or equal to 100. • Find the least common multiple of two whole numbers less than or equal to 12 to add and subtract fractions with unlike denominators.	G5 M3 Lesson 3: Add fractions with unlike units using the strategy of creating equivalent fractions. G5 M3 Lesson 5: Subtract fractions with unlike units using the strategy of creating equivalent fractions. G5 M3 Lesson 9: Add fractions making like units numerically. G5 M3 Lesson 11: Subtract fractions making like units numerically. G6 M2 Topic D: Number Theory—Thinking Logically About Multiplicative Arithmetic

Domain	Standards for Mathematical Content	Aligned Components of *Eureka Math*
	Cluster: Apply and extend previous understandings of numbers to the system of rational numbers.	

	NC.6.NS.5
	Understand and use rational numbers to:
	• Describe quantities having opposite directions or values.
	• Represent quantities in real-world contexts, explaining the meaning of 0 in each situation.
	• Understand the absolute value of a rational number as its distance from 0 on the number line to:
	  ○ Interpret absolute value as magnitude for a positive or negative quantity in a real-world context.
	  ○ Distinguish comparisons of absolute value from statements about order.
		G6 M3 Topic A: Understanding Positive and Negative Numbers on the Number Line
		G6 M3 Topic B: Order and Absolute Value

Domain	Standards for Mathematical Content	Aligned Components of *Eureka Math*
	NC.6.NS.6 Understand rational numbers as points on the number line and as ordered pairs on a coordinate plane. a. On a number line: • Recognize opposite signs of numbers as indicating locations on opposite sides of 0 and that the opposite of the opposite of a number is the number itself. • Find and position rational numbers on a horizontal or vertical number line. b. On a coordinate plane: • Understand signs of numbers in ordered pairs as indicating locations in quadrants. • Recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes. • Find and position pairs of rational numbers on acoordinate plane.	G6 M3 Topic A: Understanding Positive and Negative Numbers on the Number Line G6 M3 Lesson 7: Ordering Integers and Other Rational Numbers G6 M3 Lesson 8: Ordering Integers and Other Rational Numbers G6 M3 Topic C: Rational Numbers and the Coordinate Plane

Domain	Standards for Mathematical Content	Aligned Components of *Eureka Math*
	NC.6.NS.7 Understand ordering of rational numbers. a. Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram. b. Write, interpret, and explain statements of order for rational numbers in real-world contexts.	G6 M3 Lesson 7: Ordering Integers and Other Rational Numbers G6 M3 Lesson 8: Ordering Integers and Other Rational Numbers G6 M3 Lesson 10: Writing and Interpreting Inequality Statements Involving Rational Numbers G6 M3 Lesson 13: Statements of Order in the Real World
	NC.6.NS.8 Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.	G6 M3 Lesson 17: Drawing the Coordinate Plane and Points on the Plane G6 M3 Lesson 18: Distance on the Coordinate Plane

Domain	Standards for Mathematical Content		Aligned Components of *Eureka Math*
	NC.6.NS.9 Apply and extend previous understandings of addition and subtraction. • Describe situations in which opposite quantities combine to make 0. • Understand p + q as the number located a distance q from p, in the positive or negative direction depending on the sign of q. Show that a number and its additive inverse create a zero pair. • Understand subtraction of integers as adding the additive inverse, p − q = p + (–q). Show that the distance between two integers on the number line is the absolute value of their difference. • Use models to add and subtract integers from −20 to 20 and describe real-world contexts using sums and differences.		G7 M2 Topic A: Addition and Subtraction of Integers and Rational Numbers

Domain	Standards for Mathematical Content	Aligned Components of *Eureka Math*
Expressions and Equations	**Cluster: Apply and extend previous understandings of arithmetic to algebraic expressions.**	
	NC.6.EE.1 Write and evaluate numerical expressions, with and without grouping symbols, involving whole-number exponents.	G6 M4 Topic B: Special Notations of Operations
	NC.6.EE.2 Write, read, and evaluate algebraic expressions. • Write expressions that record operations with numbers and with letters standing for numbers. • Identify parts of an expression using mathematical terms and view one or more of those parts as a single entity. • Evaluate expressions at specific values of their variables using expressions that arise from formulas used in real-world problems.	G6 M4 Topic C: Replacing Letters and Numbers G6 M4 Topic E: Expressing Operations in Algebraic Form G6 M4 Topic F: Writing and Evaluating Expressions and Formulas
	NC.6.EE.3 Apply the properties of operations to generate equivalent expressions without exponents.	G6 M4 Topic D: Expanding, Factoring, and Distributing Expressions
	NC.6.EE.4 Identify when two expressions are equivalent and justify with mathematical reasoning.	G6 M4 Topic F: Writing and Evaluating Expressions and Formulas

Domain	Standards for Mathematical Content	Aligned Components of *Eureka Math*
	Cluster: Reason about and solve one-variable equations.	
	NC.6.EE.5 Use substitution to determine whether a given number in a specified set makes an equation true.	G6 M4 Lesson 23: True and False Number Sentences G6 M4 Lesson 24: True and False Number Sentences G6 M4 Lesson 25: Finding Solutions to Make Equations True
	NC.6.EE.6 Use variables to represent numbers and write expressions when solving a real-world or mathematical problem.	G6 M4 Topic H: Applications of Equations
	NC.6.EE.7 Solve real-world and mathematical problems by writing and solving equations of the form: $x + p = q$ in which p, q and x are all nonnegative rational numbers; and, $p \cdot x = q$ for cases in which p, q and x are all nonnegative rational numbers.	G6 M4 Topic G: Solving Equations G6 M4 Topic H: Applications of Equations

Domain	Standards for Mathematical Content	Aligned Components of *Eureka Math*
	Cluster: Reason about one variable inequalities.	
	NC.6.EE.8 Reason about inequalities by: • Using substitution to determine whether a given number in a specified set makes an inequality true. • Writing an inequality of the form x > c or x < c to represent a constraint or condition in a real-world or mathematical problem. • Recognizing that inequalities of the form x > c or x < c have infinitely many solutions. • Representing solutions of inequalities on number line diagrams.	G6 M4 Topic G: Solving Equations G6 M4 Topic H: Applications of Equations G6 M4 Lesson 33**:** From Equations to Inequalities G6 M4 Lesson 34: Writing and Graphing Inequalities in Real-World Problems
	Cluster: Represent and analyze quantitative relationships between dependent and independent variables.	
	NC.6.EE.9 Represent and analyze quantitative relationships by: • Using variables to represent two quantities in a real-world or mathematical context that change in relationship to one another. • Analyze the relationship between quantities in different representations (context, equations, tables, and graphs).	G6 M4 Topic H: Applications of Equations

Domain	Standards for Mathematical Content	Aligned Components of *Eureka Math*
Geometry	**Cluster: Solve real-world and mathematical problems involving area, surface area, and volume.**	
	NC.6.G.1 Create geometric models to solve real-world and mathematical problems to: • Find the area of triangles by composing into rectangles and decomposing into right triangles. • Find the area of special quadrilaterals and polygons by decomposing into triangles or rectangles.	G6 M5 Topic A: Area of Triangles, Quadrilaterals, and Polygons
	NC.6.G.2 Apply and extend previous understandings of the volume of a right rectangular prism to find the volume of right rectangular prisms with fractional edge lengths. Apply this understanding to the context of solving real-world and mathematical problems.	G6 M5 Lesson 11: Volume with Fractional Edge Lengths and Unit Cubes
	NC.6.G.3 Use the coordinate plane to solve real-world and mathematical problems by: • Drawing polygons in the coordinate plane given coordinates for the vertices. • Using coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate.	G6 M5 Topic B: Polygons on the Coordinate Plane

Domain	Standards for Mathematical Content	Aligned Components of *Eureka Math*
	NC.6.G.4 Represent right prisms and right pyramids using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems.	G6 M5 Topic C: Volume of Right Rectangular Prisms G6 M5 Topic D: Nets and Surface Area
Statistics and Probability	**Cluster: Develop understanding of statistical variability.**	
	NC.6.SP.1 Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers.	G6 M6 Lesson 1: Posing Statistical Questions
	NC.6.SP.2 Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape.	G6 M6 Topic A: Understanding Distributions

Domain	Standards for Mathematical Content	Aligned Components of *Eureka Math*
	NC.6.SP.3 Understand that both a measure of center and a description of variability should be considered when describing a numerical data set. a. Determine the measure of center of a data set and understand that it is a single number that summarizes all the values of that data set. • Understand that a mean is a measure of center that represents a balance point or fair share of a data set and can be influenced by the presence of extreme values within the data set. • Understand the median as a measure of center that is the numerical middle of an ordered data set. b. Understand that describing the variability of a data set is needed to distinguish between data sets in the same scale, by comparing graphical representations of different data sets in the same scale that have similar measures of center, but different spreads.	G6 M6 Topic B: Summarizing a Distribution That Is Approximately Symmetric Using the Mean and Mean Absolute Deviation G6 M6 Topic C: Summarizing a Distribution That Is Skewed Using the Median and the Interquartile Range

Domain	Standards for Mathematical Content	Aligned Components of *Eureka Math*
	Cluster: Summarize and describe distributions.	
	NC.6.SP.4 Display numerical data in plots on a number line. • Use dot plots, histograms, and box plots to represent data. • Compare the attributes of different representations of the same data.	G6 M6 Lesson 3: Creating a Dot Plot G6 M6 Lesson 4: Creating a Histogram G6 M6 Lesson 14: Summarizing a Distribution Using a Box Plot G6 M6 Lesson 15: More Practice with Box Plots G6 M6 Lesson 16: Understanding Box Plots
	NC.6.SP.5 Summarize numerical data sets in relation to their context. a. Describe the collected data by: • Reporting the number of observations in dot plots and histograms. • Communicating the nature of the attribute under investigation, how it was measured, and the units of measurement. b. Analyze center and variability by: • Giving quantitative measures of center, describing variability, and any overall pattern, and noting any striking deviations. • Justifying the appropriate choice of measures of center using the shape of the data distribution.	G6 M6 Topic A: Understanding Distributions G6 M6 Lesson 6: Describing the Center of a Distribution Using the Mean G6 M6 Lesson 7: The Mean as a Balance Point G6 M6 Lesson 8: Variability in a Data Distribution G6 M6 Topic D: Summarizing and Describing Distributions