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

Alabama Course of Study: Mathematics Correlation to *Eureka Math*®

GRADE 6 MATHEMATICS

The majority of Grade 6 Alabama Course of Study: Mathematics standards are fully covered by the Grade 6 *Eureka Math* curriculum. One standard in the content area of Number Systems and Operations will require additional content. A detailed analysis of alignment is provided in the table below.

INDICATORS

GREEN	indicates the Alabama standard is addressed in *Eureka Math*.
YELLOW	indicates the Alabama standard may not be completely addressed in *Eureka Math*.
RED	indicates the Alabama standard is not addressed in *Eureka Math*.
BLUE	indicates there is a discrepancy between the grade level at which this standard is addressed in Alabama and in *Eureka Math*.

Standards for Mathematical Practice	Aligned Components of *Eureka Math*
1. Make sense of problems and persevere in solving them. These students start by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints, relationships, and goals. They make conjectures about the form and meaning of the solution and plan a solution pathway rather than simply jumping into a solution attempt. These students consider analogous problems and try special cases and simpler forms of the original problem in order to gain insight into its solution. They monitor and evaluate their progress and change course if necessary. Older students might, depending on the context of the problem, transform algebraic expressions or change the viewing window on their graphing calculators to obtain the information they need. Mathematically proficient students can explain correspondences among equations, verbal descriptions, tables, and graphs, or draw diagrams of important features and relationships, graph data, and search for regularity or trends. Younger students might rely on using concrete objects or pictures to help conceptualize and solve a problem. Mathematically proficient students check their answers to problems using a different method, and they continually ask themselves, “Does this make sense?” They can understand the approaches of others to solve complex problems and identify correspondences between different approaches.	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

Standards for Mathematical Practice	Aligned Components of *Eureka Math*
2. Reason abstractly and quantitatively. Mathematically proficient students make sense of quantities and their relationships in problem situations. They bring two complementary abilities to bear on problems involving quantitative relationships. One is the ability to *decontextualize*, to abstract a given situation, represent it symbolically, and manipulate the representing symbols as if they have a life of their own, without necessarily attending to their referents. The second is the ability to *contextualize*, to pause as needed during the manipulation process in order to probe into the referents for the symbols involved. Quantitative reasoning entails habits of creating a coherent representation of the problem at hand; considering the units involved; attending to the meaning of quantities, not just how to compute them; and knowing and flexibly using different properties of operations and objects.	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. These students understand and use stated assumptions, definitions, and previously established results in constructing arguments. They make conjectures and build a logical progression of statements to explore the truth of their conjectures. They are able to analyze situations by breaking them into cases, and can recognize and use counterexamples. These students justify their conclusions, communicate them to others, and respond to the arguments of others. They reason inductively about data, making plausible arguments that take into account the context from which the data arose. Mathematically proficient students are also able to compare the effectiveness of two plausible arguments; distinguish correct logic or reasoning from that which is flawed; and, if there is a flaw in an argument, explain what it is. Elementary students can construct arguments using concrete referents such as objects, drawings, diagrams, and actions. Such arguments can make sense and be correct, even though they are not generalized or made formal until the middle or upper grades. Later, students learn to determine domains to which an argument applies. Students in all grades can listen to or read the arguments of others, decide whether they make sense, and ask useful questions to clarify or improve the arguments.	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

Standards for Mathematical Practice	Aligned Components of *Eureka Math*
4. Model with mathematics. These students can apply the mathematics they know to solve problems arising in everyday life, society, and the workplace. In early grades, this might be as simple as writing an addition equation to describe a situation. In middle grades, students might apply proportional reasoning to plan a school event or analyze a problem in the community. By high school, students might use geometry to solve a design problem or use a function to describe how one quantity of interest depends on another. Mathematically proficient students who can apply what they know are comfortable making assumptions and approximations to simplify a complicated situation, realizing that these may need revision later. They are able to identify important quantities in a practical situation and map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts, and formulas and can analyze those relationships mathematically to draw conclusions. They routinely interpret their mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose.	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. Mathematically proficient students consider available tools when solving a mathematical problem. These tools might include pencil and paper, concrete models, a ruler, a protractor, a calculator, a spreadsheet, a computer algebra system, a statistical package, or dynamic geometry software. Proficient students are sufficiently familiar with tools appropriate for their grade or course to make sound decisions about when each of these tools might be helpful, recognizing both the insight to be gained and the tools' limitations. For example, mathematically proficient high school students analyze graphs of functions and solutions generated using a graphing calculator. They detect possible errors by strategically using estimation and other mathematical knowledge. When making mathematical models, they know that technology can enable them to visualize the results of varying assumptions, explore consequences, and compare predictions with data. Mathematically proficient students at various grade levels are able to identify relevant external mathematical resources, such as digital content located on a Web site, and use these to pose or solve problems. They are able to use technological tools to explore and deepen their understanding of concepts.	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

Standards for Mathematical Practice	Aligned Components of *Eureka Math*
6. Attend to precision. These students try to communicate mathematical ideas and concepts precisely. They try to use clear definitions in discussion with others and in their own reasoning. They state the meaning of the symbols they choose, including using the equal sign consistently and appropriately. Mathematically proficient students are careful about specifying units of measure and labeling axes to clarify the correspondence with quantities in a problem. They calculate accurately and efficiently, and express numerical answers with a degree of precision appropriate for the problem context. In the elementary grades, students give carefully formulated explanations to each other. By the time they reach high school they have learned to examine claims and make explicit use of definitions.	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. Mathematically proficient students look closely to discern a pattern or structure. Young students, for example, might notice that three and seven more is the same amount as seven and three more, or they may sort a collection of shapes according to how many sides the shapes have. Later, students will see 7×8 equals $7 \times 5 + 7 \times 3$, in preparation for learning about the distributive property. In the expression $x^2 + 9x + 14$, older students can see the 14 as 2×7 and the 9 as $2 + 7$. They recognize the significance of an existing line in a geometric figure and can use the strategy of drawing an auxiliary line for solving problems. These students also can pause and reflect for an overview or a shift in perspective. They can observe the complexities of mathematics, such as seeing some algebraic expressions as single objects or as being composed of several objects. For example, they can see $5 - 3(x - y)^2$ as 5 minus a positive number times a square and use that mental picture to realize that the value of the expression cannot be more than 5 for any real numbers x and y.	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

Standards for Mathematical Practice	Aligned Components of *Eureka Math*
8. Look for and express regularity in repeated reasoning. Mathematically proficient students notice if calculations are repeated, and look both for general methods and for shortcuts. Upper elementary students might notice when dividing 25 by 11 that they are repeating the same calculations over and over again and conclude they have a repeating decimal. By paying attention to the calculation of slope as they repeatedly check whether points are on the line through (1, 2) with slope 3, middle school students might abstract the equation $(y – 2)/(x – 1) = 3$. Noticing the regularity in the way terms cancel when expanding $(x – 1)(x + 1)$, $(x – 1)(x^2 + x + 1)$, and $(x – 1)(x^3 + x^2 + x + 1)$ might lead them to the general formula for the sum of a geometric series. As students work to solve a problem, mathematically proficient students maintain oversight of the process while attending to the details and continually evaluate the reasonableness of their intermediate results.	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

Content Area	Standards for Mathematical Content	Aligned Components of *Eureka Math*
Proportional Reasoning	**Cluster: Develop an understanding of ratio concepts and use reasoning about ratios to solve problems.**	
	1. Use appropriate notations [*a*/*b*, *a to b*, *a*:*b*] to represent a proportional relationship between quantities and use ratio language to describe the relationship between quantities.	G6 M1 Lesson 1: Ratios G6 M1 Lesson 2: Ratios
	2. Use unit rates to represent and describe ratio relationships.	G6 M1 Topic C: Unit Rates
	3. Use ratio and rate reasoning to solve mathematical and real-world problems (including but not limited to percent, measurement conversion, and equivalent ratios) using a variety of models, including tables of equivalent ratios, tape diagrams, double number lines, and equations.	G6 M1 Topic B: Collections of Equivalent Ratios G6 M1 Topic C: Unit Rates G6 M1 Topic D: Percent
Number Systems and Operations	**Cluster: Use prior knowledge of multiplication and division to divide fractions.**	
	4. Interpret and compute quotients of fractions using visual models and equations to represent problems. a. Use quotients of fractions to analyze and solve problems.	G6 M2 Topic A: Dividing Fractions by Fractions G6 M2 Lesson 5: Creating Division Stories G6 M2 Lesson 6: More Division Stories

Content Area	Standards for Mathematical Content		Aligned Components of *Eureka Math*
	Cluster: Compute multi-digit numbers fluently and determine common factors and multiples.		
	5. Fluently divide multi-digit whole numbers using a standard algorithm to solve real-world and mathematical problems.		G6 M2 Lesson 12: Estimating Digits in a Quotient G6 M2 Lesson 13: Dividing Multi-Digit Numbers Using the Algorithm
	6. Add, subtract, multiply, and divide decimals using a standard algorithm.		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
	7. Use the distributive property to express the sum of two whole numbers with a common factor as a multiple of a sum of two whole numbers with no common factor.		G6 M4 Lesson 11: Factoring Expressions G6 M4 Lesson 12: Distributing Expressions
	8. Find the greatest common factor (GCF) and least common multiple (LCM) of two or more whole numbers. a. Use factors and multiples to determine prime factorization.		G6 M2 Lesson 18: Least Common Multiple and Greatest Common Factor

	Cluster: Apply knowledge of the number system to represent and use rational numbers in a variety of forms.	
	9. Use signed numbers to describe quantities that have opposite directions or values and to represent quantities in real-world contexts.	G6 M3 Topic A: Understanding Positive and Negative Numbers on the Number Line
	10. Locate integers and other rational numbers on a horizontal or vertical line diagram. a. Define *opposites* as numbers located on opposite sides of 0 and the same distance from 0 on a number line. b. Use rational numbers in real-world and mathematical situations, explaining the meaning of 0 in each situation.	G6 M3 Lesson 2: Real-World Positive and Negative Numbers and Zero G6 M3 Lesson 3: Real-World Positive and Negative Numbers and Zero G6 M3 Lesson 4: The Opposite of a Number G6 M3 Lesson 5: The Opposite of a Number's Opposite G6 M3 Lesson 6: Rational Numbers on the Number Line
	11. Find the position of pairs of integers and other rational numbers on the coordinate plane. a. Identify quadrant locations of ordered pairs on the coordinate plane based on the signs of the x and y coordinates. b. Identify (a,b) and (a,-b) as reflections across the x-axis.	G6 M3 Lesson 13: Statements of Order in the Real World G6 M3 Topic C: Rational Numbers and the Coordinate Plane

Content Area	Standards for Mathematical Content	Aligned Components of *Eureka Math*
	c. Identify (*a*,*b*) and (*a*,-*b*) as reflections across the *y*-axis. d. Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane, including finding distances between points with the same first or second coordinate.	
	12. Explain the meaning of absolute value and determine the absolute value of rational numbers in real-world contexts.	G6 M3 Lesson 11: Absolute Value—Magnitude and Distance G6 M3 Lesson 12: The Relationship Between Absolute Value and Order
	13. Compare and order rational numbers and absolute value of rational numbers with and without a number line in order to solve real-world and mathematical problems.	G6 M3 Topic B: Order and Absolute Value
Algebra and Functions	**Cluster: Apply knowledge of arithmetic to read, write, and evaluate algebraic expressions.**	
	14. Write, evaluate, and compare expressions involving whole number exponents.	G6 M4 Lesson 9: Writing Addition and Subtraction Expressions G6 M4 Lesson 10: Writing and Expanding Multiplication Expressions
	15. Write, read, and evaluate expressions in which letters represent numbers in real-world contexts. a. Interpret a variable as an unknown value for any number in a specified set, depending on the context.	G6 M4 Lesson 6: The Order of Operations G6 M4 Topic C: Replacing Letters and Numbers

Content Area	Standards for Mathematical Content	Aligned Components of *Eureka Math*
	b. Write expressions to represent verbal statements and real-world scenarios. c. Identify parts of an expression using mathematical terms such as *sum*, *term*, *product*, *factor*, *quotient*, and *coefficient*. d. Evaluate expressions (which may include absolute value and whole number exponents) with respect to order of operations.	G6 M4 Lesson 9: Writing Addition and Subtraction Expressions G6 M4 Lesson 10: Writing and Expanding Multiplication Expressions. G6 M4 Topic F: Writing and Evaluating Expressions and Formulas
	16. Generate equivalent algebraic expressions using the properties of operations, including inverse, identity, commutative, associative, and distributive.	G6 M4 Lesson 18: Writing and Evaluating Expressions—Addition and Subtraction G6 M4 Lesson 20: Writing and Evaluating Expressions—Multiplication and Division
	17. Determine whether two expressions are equivalent and justify the reasoning.	G6 M4 Lesson 23: True and False Number Sentences G6 M4 Lesson 24: True and False Number Sentences
	Cluster: Use equations and inequalities to represent and solve real-world or mathematical problems.	
	18. Determine whether a value is a solution to an equation or inequality by using substitution to conclude whether a given value makes the equation or inequality true.	G6 M4 Topic G: Solving Equations

Content Area	Standards for Mathematical Content	Aligned Components of *Eureka Math*
	19. Write and solve an equation in the form of $x + p = q$ or $px = q$ for cases in which p, q, and x are all non-negative rational numbers to solve real-world and mathematical problems. a. Interpret the solution of an equation in the context of the problem.	G6 M4 Topic G: Solving Equations
	20. Write and solve inequalities in the form of $x > c$, $x < c$, $x \geq c$, or $x \leq c$ to represent a constraint or condition in a real-world or mathematical problem. a. Interpret the solution of an inequality in the context of a problem. b. Represent the solutions of inequalities on a number line and explain that the solution set may contain infinitely many solutions.	G6 M4 Lesson 23: True and False Number Sentences G6 M4 Lesson 24: True and False Number Sentences
	Cluster: Identify and analyze relationships between independent and dependent variables.	
	21. Identify, represent, and analyze two quantities that change in relationship to one another in real-world or mathematical situations. a. Use tables, graphs, and equations to represent the relationship between independent and dependent variables.	G6 M4 Topic H: Applications of Equations

Content Area	Standards for Mathematical Content	Aligned Components of Eureka Math
Data Analysis, Statistics, and Probability	**Cluster: Use real-world and mathematical problems to analyze data and demonstrate an understanding of statistical variability and measures of center.**	
	22. Write examples and non-examples of statistical questions, explaining that a statistical question anticipates variability in the data related to the question.	G6 M6 Lesson 1: Posing Statistical Questions
	23. Calculate, interpret, and compare measures of center (mean, median, mode) and variability (range and interquartile range) in real-world data sets. a. Determine which measure of center best represents a real-world data set. b. Interpret the measures of center and variability in the context of a problem.	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 G6 M6 Topic D: Summarizing and Describing Distributions
	24. Represent numerical data graphically, using dot plots, line plots, histograms, stem and leaf plots, and box plots. a. Analyze the graphical representation of data by describing the center, spread, shape (including approximately symmetric or skewed), and unusual features (including gaps, peaks, clusters, and extreme values). b. Use graphical representations of real-world data to describe the context from which they were collected.	G6 M6 Topic A: Understanding Distributions G6 M6 Topic C: Summarizing a Distribution that is Skewed Using the Median and the Interquartile Range G6 M6 Lesson 20: Describing Center, Variability, and Shape of a Data Distribution from a Graphic Representation G6 M6 Lesson 21: Summarizing a Data Distribution by Describing Center, Variability, and Shape

Content Area	Standards for Mathematical Content	Aligned Components of Eureka Math
Geometry and Measurement	**Cluster: Graph polygons in the coordinate plane to solve real-world and mathematical problems.**	
	25. Graph polygons in the coordinate plane given coordinates of the vertices to solve real-world and mathematical problems. a. Determine missing vertices of a rectangle with the same *x*-coordinate or the same *y*-coordinate when graphed in the coordinate plane. b. Use coordinates to find the length of a side between points having the same *x*-coordinate or the same *y*-coordinate. c. Calculate perimeter and area of a polygon graphed in the coordinate plane (limiting to polygons in which consecutive vertices have the same *x*-coordinate or the same *y*-coordinate).	G6 M5 Topic B: Polygons on the Coordinate Plane
	Cluster: Solve real-world and mathematical problems to determine area, surface area, and volume.	
	26. Calculate the area of triangles, special quadrilaterals, and other polygons by composing and decomposing them into known shapes. a. Apply the techniques of composing and decomposing polygons to find area in the context of solving real-world and mathematical problems.	G6 M5 Lesson 5: The Area of Polygons Through Composition and Decomposition G6 M5 Lesson 6: Area in the Real World
	27. Determine the surface area of three-dimensional figures by representing them with nets composed of rectangles and triangles to solve real-world and mathematical problems.	G6 M5 Topic D: Nets and Surface Area

	28. Apply previous understanding of volume of right rectangular prisms to those with fractional edge lengths to solve real-world and mathematical problems. a. Use models (cubes or drawings) and the volume formulas ($V = lwh$ and $V = Bh$) to find and compare volumes of right rectangular prisms.		G6 M5 Topic C: Volume of Right Rectangular Prisms