Grade 7 | Georgia State Standards for Mathematics 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.

Standards for Mathematical Practice	Aligned Components of *Eureka Math²*
MP.1 Make sense of problems and persevere in solving them.	Lessons in every module engage students in mathematical practices. These are indicated in margin notes included with every lesson.
MP.2 Reason abstractly and quantitatively.	Lessons in every module engage students in mathematical practices. These are indicated in margin notes included with every lesson.
MP.3 Construct viable arguments and critique the reasoning of others.	Lessons in every module engage students in mathematical practices. These are indicated in margin notes included with every lesson.
MP.4 Model with mathematics.	Lessons in every module engage students in mathematical practices. These are indicated in margin notes included with every lesson.
MP.5 Use appropriate tools strategically.	Lessons in every module engage students in mathematical practices. These are indicated in margin notes included with every lesson.
MP.6 Attend to precision.	Lessons in every module engage students in mathematical practices. These are indicated in margin notes included with every lesson.
MP.7 Look for and make use of structure.	Lessons in every module engage students in mathematical practices. These are indicated in margin notes included with every lesson.
MP.8 Look for and express regularity in repeated reasoning.	Lessons in every module engage students in mathematical practices. These are indicated in margin notes included with every lesson.

Numerical Reasoning

7.NR.1 Solve relevant, mathematical problems, including multi-step problems, involving the four operations with rational numbers and quantities in any form (integers, percentages, fractions, and decimal numbers).

Georgia State Standards for Mathematics	Aligned Components of *Eureka Math²*
7.NR.1.1 Show that a number and its opposite have a sum of 0 (are additive inverses). Describe situations in which opposite quantities combine to make 0.	7 M2 Lesson 1: Combining Opposites 7 M2 Lesson 12: The Integer Game
7.NR.1.2 Show and explain $p + q$ as the number located a distance $\lvert q \rvert$ from p, in the positive or negative direction, depending on whether q is positive or negative. Interpret sums of rational numbers by describing applicable situations.	7 M2 Topic A: Adding Rational Numbers 7 M2 Lesson 8: Subtracting Integers, Part 1
7.NR.1.3 Represent addition and subtraction with rational numbers on a horizontal or a vertical number line diagram to solve authentic problems.	7 M2 Topic A: Adding Rational Numbers 7 M2 Topic B: Subtracting Rational Numbers
7.NR.1.4 Show and explain subtraction of rational numbers as adding the additive inverse, $p - q = p + (-q)$. Show that the distance between two rational numbers on the number line is the absolute value of their difference and apply this principle in contextual situations.	7 M2 Topic B: Subtracting Rational Numbers

Georgia State Standards for Mathematics	Aligned Components of *Eureka Math²*
7.NR.1.5 Apply properties of operations, including part-whole reasoning, as strategies to add and subtract rational numbers.	7 M2 Topic A: Adding Rational Numbers 7 M2 Topic B: Subtracting Rational Numbers
7.NR.1.6 Make sense of multiplication of rational numbers using realistic applications.	7 M2: Operations with Rational Numbers
7.NR.1.7 Show and explain that integers can be divided, assuming the divisor is not zero, and every quotient of integers is a rational number.	7 M2 Lesson 18: Understanding Negative Divisors 7 M2 Lesson 21: Comparing and Ordering Rational Numbers
7.NR.1.8 Represent the multiplication and division of integers using a variety of strategies and interpret products and quotients of rational numbers by describing them based on the relevant situation.	7 M2 Topic C: Multiplying Rational Numbers
7.NR.1.9 Apply properties of operations as strategies to solve multiplication and division problems involving rational numbers represented in an applicable scenario.	7 M2 Topic C: Multiplying Rational Numbers 7 M2 Topic D: Dividing Rational Numbers 7 M2 Lesson 24: Order of Operations with Rational Numbers

Georgia State Standards for Mathematics	Aligned Components of *Eureka Math²*
7.NR.1.10 Convert rational numbers between forms to include fractions, decimal numbers, and percentages, using understanding of the part divided by the whole. Know that the decimal form of a rational number terminates in 0s or eventually repeats.	7 M2 Topic D: Dividing Rational Numbers
7.NR.1.11 Solve multi-step, contextual problems involving rational numbers, converting between forms as appropriate, and assessing the reasonableness of answers using mental computation and estimation strategies.	7 M2 Lesson 25: Writing and Evaluating Expressions with Rational Numbers, Part 1 7 M2 Lesson 26: Writing and Evaluating Expressions with Rational Numbers, Part 2 7 M3 Topic B: Unknown Angle Measurements 7 M3 Lesson 11: Dominoes and Dominoes 7 M3 Lesson 16: Using Equations to Solve Rate Problems 7 M3 Lesson 17: Using Equations to Solve Problems

Patterning and Algebraic Reasoning

7.PAR.2 Use properties of operations, generate equivalent expressions, and interpret the expressions to explain relevant situations.

Georgia State Standards for Mathematics	Aligned Components of *Eureka Math²*
7.PAR.2.1 Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.	7 M3 Topic A: Equivalent Expressions

Georgia State Standards for Mathematics	Aligned Components of *Eureka Math²*
7.PAR.2.2 Rewrite an expression in different forms from a contextual problem to clarify the problem and show how the quantities in it are related.	7 M3 Topic B: Unknown Angle Measurements 7 M3 Lesson 9: Solving Equations to Determine Unknown Angle Measures 7 M5 Topic C: More or Less Than 100% 7 M5 Lesson 15: Tips and Taxes 7 M5 Lesson 16: Markups and Discounts 7 M5 Lesson 23: Percents of Percents

Patterning and Algebraic Reasoning

7.PAR.3 Represent authentic situations using equations and inequalities with variables; solve equations and inequalities symbolically, using the properties of equality.

Georgia State Standards for Mathematics	Aligned Components of *Eureka Math²*
7.PAR.3.1 Construct algebraic equations to solve practical problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p, q, and r are specific rational numbers. Interpret the solution based on the situation.	7 M3: Expressions, Equations, and Inequalities

Georgia State Standards for Mathematics	Aligned Components of *Eureka Math²*
7.PAR.3.2 Construct algebraic inequalities to solve problems, leading to inequalities of the form $px \pm q > r$, $px \pm q < r$, $px \pm q \leq r$, or $px \pm q \geq r$, where p, q, and r are specific rational numbers. Graph and interpret the solution based on the realistic situation that the inequalities represent.	7 M3 Topic D: Inequalities

Patterning and Algebraic Reasoning

7.PAR.4 Recognize proportional relationships in relevant, mathematical problems; represent, solve, and explain these relationships with tables, graphs, and equations.

Georgia State Standards for Mathematics	Aligned Components of *Eureka Math²*
7.PAR.4.1 Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units presented in realistic problems.	7 M1 Topic A: Understanding Proportional Relationships
7.PAR.4.2 Determine the unit rate (constant of proportionality) in tables, graphs $(1, r)$, equations, diagrams, and verbal descriptions of proportional relationships to solve realistic problems.	7 M1: Ratios and Proportional Relationships

Georgia State Standards for Mathematics	Aligned Components of *Eureka Math²*
7.PAR.4.3 Determine whether two quantities presented in authentic problems are in a proportional relationship.	7 M1 Topic A: Understanding Proportional Relationships 7 M1 Lesson 14: Extreme Bicycles
7.PAR.4.4 Identify, represent, and use proportional relationships.	7 M1: Ratios and Proportional Relationships 7 M5: Percent and Applications of Percent
7.PAR.4.5 Use context to explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points $(0, 0)$ and $(1, r)$ where r is the unit rate.	7 M1 Lesson 4: Exploring Graphs of Proportional Relationships 7 M1 Lesson 5: Analyzing Graphs of Proportional Relationships 7 M1 Lesson 9: Comparing Proportional Relationships
7.PAR.4.6 Solve everyday problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing, and reproducing a scale drawing at a different scale.	7 M1 Topic C: Scale Drawings and Proportional Relationships 7 M5 Lesson 1: Proportionality and Scale Factor 7 M5 Lesson 14: Scale Factor—Percent Increase and Decrease
7.PAR.4.7 Use similar triangles to explain why the slope, m, is the same between any two distinct points on a non-vertical line in the coordinate plane.	8 M4 Topic D: Slope of a Line

Georgia State Standards for Mathematics	Aligned Components of *Eureka Math²*
7.PAR.4.8 Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways.	8 M4 Lesson 15: Comparing Proportional Relationships 8 M4 Lesson 16: Proportional Relationships and Slope
7.PAR.4.9 Use proportional relationships to solve multi-step ratio and percent problems presented in applicable situations.	7 M1 Topic B: Working with Proportional Relationships 7 M5: Percent and Applications of Percent
7.PAR.4.10 Predict characteristics of a population by examining the characteristics of a representative sample. Recognize the potential limitations and scope of the sample to the population.	7 M6 Topic C: Random Sampling
7.PAR.4.11 Analyze sampling methods and conclude that random sampling produces and supports valid inferences.	7 M6 Topic C: Random Sampling
7.PAR.4.12 Use data from repeated random samples to evaluate how much a sample mean is expected to vary from a population mean. Simulate multiple samples of the same size.	7 M6 Topic C: Random Sampling

Geometric and Spatial Reasoning

7.GSR.5 Solve practical problems involving angle measurement, circles, area of circles, surface area of prisms and cylinders, and volume of cylinders and prisms composed of cubes and right prisms.

Georgia State Standards for Mathematics	Aligned Components of *Eureka Math²*
7.GSR.5.1 Measure angles in whole non-standard units.	*Supplemental material is necessary to address measurement of angles with non-standard units.* *Eureka Math² does include this content in grade 4.* 4 M6 Topic B: Angle Measurement 4 M6 Topic C: Determine Unknown Angle Measures
7.GSR.5.2 Measure angles in whole number degrees using a protractor.	*Supplemental material is necessary to address measurement of angles with a protractor.* *Eureka Math² does include this content in grade 4.* 4 M6 Topic B: Angle Measurement
7.GSR.5.3 Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve equations for an unknown angle in a figure.	7 M3 Topic B: Unknown Angle Measurements
7.GSR.5.4 Explore and describe the relationship between pi, radius, diameter, circumference, and area of a circle to derive the formulas for the circumference and area of a circle.	7 M4 Lesson 10: The Outside of a Circle 7 M4 Lesson 11: The Inside of a Circle 7 M4 Lesson 12: Exploring the Area and Circumference of a Circle

Georgia State Standards for Mathematics	Aligned Components of *Eureka Math²*
7.GSR.5.5 Given the formula for the area and circumference of a circle, solve problems that exist in everyday life.	7 M4 Topic C: Circumference and Area of Circles
7.GSR.5.6 Solve realistic problems involving surface area of right prisms and cylinders.	7 M4 Lesson 14: Composite Figures with Circular Regions 7 M4 Topic D: Area and Surface Area 7 M4 Topic E: Cross Sections and Volume
7.GSR.5.7 Describe the two-dimensional figures (cross sections) that result from slicing three-dimensional figures, as in the plane sections of right rectangular prisms, right rectangular pyramids, cones, cylinders, and spheres.	7 M4 Lesson 22: Understanding Planes and Cross Sections 7 M4 Lesson 23: Cross Section Scavenger Hunt
7.GSR.5.8 Explore volume as a measurable attribute of cylinders and right prisms. Find the volume of these geometric figures using concrete problems.	8 M6 Topic E: Volume

Probability Reasoning

7.PR.6 Using mathematical reasoning, investigate chance processes and develop, evaluate, and use probability models to find probabilities of simple events presented in authentic situations.

Georgia State Standards for Mathematics	Aligned Components of *Eureka Math²*
7.PR.6.1 Represent the probability of a chance event as a number between 0 and 1 that expresses the likelihood of the event occurring. Describe that a probability near 0 indicates an unlikely event, a probability around $\frac{1}{2}$ indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event.	7 M6 Lesson 1: What is Probability?
7.PR.6.2 Approximate the probability of a chance event by collecting data on an event and observing its long-run relative frequency will approach the theoretical probability.	7 M6 Topic A: Calculating and Interpreting Probabilities 7 M6 Lesson 8: Picking Blue
7.PR.6.3 Develop a probability model and use it to find probabilities of simple events. Compare experimental and theoretical probabilities of events. If the probabilities are not close, explain possible sources of the discrepancy.	7 M6 Lesson 7: The Law of Large Numbers

Georgia State Standards for Mathematics	Aligned Components of *Eureka Math²*
7.PR.6.4 Develop a uniform probability model by assigning equal probability to all outcomes and use the model to determine probabilities of events.	7 M6 Lesson 4: Theoretical Probability 7 M6 Lesson 7: The Law of Large Numbers
7.PR.6.5 Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process.	7 M6 Lesson 6: Outcomes That Are Not Equally Likely 7 M6 Lesson 8: Picking Blue
7.PR.6.6 Use appropriate graphical displays and numerical summaries from data distributions with categorical or quantitative (numerical) variables as probability models to draw informal inferences about two samples or populations.	7 M6: Probability and Populations