Grade 7–8 | Georgia's K–12 Mathematics Standards (2021) Correlation to *Eureka Math²® (2027)*

Eureka Math² is a research-proven math curriculum that empowers teachers to center instructional techniques on student success. Teachers can foster more "aha!" learning moments by providing the support needed for all learners to build a more confident math mindset.

This *Eureka Math²* edition builds on a strong foundation of effective instruction. It provides teachers with guidance on delivering rigorous instruction that honors student choice and encourages confident problem-solving.

Eureka Math² carefully sequences mathematical content to maximize vertical alignment from kindergarten through high school. This kind of sequencing has proven to be essential in students' mastery of math.

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 into the teacher materials.

Accessibility

Eureka Math² incorporates Universal Design for Learning (UDL) principles so all learners can access the mathematics and take on challenging math concepts. UDL, Differentiation, and Multilingual Learner supports are built into the instructional design and are clearly identified in the *Teach* book.

The curriculum also carries a focus on readability. By eliminating unnecessary words and using 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.

Math Confidence

Eureka Math² fosters a classroom culture of learning by encouraging student-led discourse and cognitive engagement that results in confident learners. By leveraging consistent models, routines, and progressions, teachers can remove barriers and allow all students an avenue to success. Within the digital platform, each grade includes wordless videos and digital interactives that spark students' curiosity and help them make conceptual connections. Using the *Learn* books, students wonder, explore, and make sense of mathematics, which helps them develop 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's K–12 Mathematics Standards	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.	7–8 M1 Lesson 1: Adding Integers and Rational Numbers
7.NR.1.2 Show and explain $p + q$ as the number located a distance $\|q\|$ 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.	7–8 M1 Lesson 1: Adding Integers and Rational Numbers
7.NR.1.3 Represent addition and subtraction with rational numbers on a horizontal or a vertical number line diagram to solve authentic problems.	7–8 M1 Lesson 1: Adding Integers and Rational Numbers 7–8 M1 Lesson 2: KAKOOMA® with Rational Numbers 7–8 M1 Lesson 3: Finding Distances to Find Differences 7–8 M1 Lesson 4: Subtracting Integers 7–8 M1 Lesson 5: Subtracting Rational Numbers

Georgia's K–12 Mathematics Standards	Aligned Components of *Eureka Math²*
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.	7–8 M1 Lesson 3: Finding Distances to Find Differences 7–8 M1 Lesson 4: Subtracting Integers 7–8 M1 Lesson 5: Subtracting Rational Numbers
7.NR.1.5 Apply properties of operations, including part-whole reasoning, as strategies to add and subtract rational numbers.	7–8 M1 Lesson 1: Adding Integers and Rational Numbers 7–8 M1 Lesson 2: KAKOOMA® with Rational Numbers 7–8 M1 Lesson 3: Finding Distances to Find Differences 7–8 M1 Lesson 4: Subtracting Integers 7–8 M1 Lesson 5: Subtracting Rational Numbers
7.NR.1.6 Make sense of multiplication of rational numbers using realistic applications.	7–8 M1 Lesson 6: Multiplying Integers and 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.	7–8 M1 Lesson 8: Dividing Integers and Rational Numbers

Georgia's K–12 Mathematics Standards	Aligned Components of *Eureka Math²*
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.	7–8 M1 Lesson 6: Multiplying Integers and Rational Numbers 7–8 M1 Lesson 7: Exponential Expressions and Relating Multiplication to Division 7–8 M1 Lesson 8: Dividing Integers and 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.	7–8 M1 Lesson 6: Multiplying Integers and Rational Numbers 7–8 M1 Lesson 7: Exponential Expressions and Relating Multiplication to Division 7–8 M1 Lesson 8: Dividing Integers and Rational Numbers 7–8 M1 Lesson 9: Decimal Expansions of Rational Numbers
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.	6 M1 Lesson 22: Introduction to Percents 7–8 M1 Lesson 9: Decimal Expansions of 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.	7–8 M2 Lesson 11: Using Linear Equations to Solve Real-World Problems 7–8 M2 Lesson 17: Using Proportional Reasoning to Solve Multi-Step Problems 7–8 M2 Lesson 18: Handstand Sprint 7–8 M2 Lesson 23: What Is the Best Deal?

Numerical Reasoning

8.NR.1 Solve problems involving irrational numbers and rational approximations of irrational numbers to explain realistic applications.

Georgia's K–12 Mathematics Standards	Aligned Components of *Eureka Math²*
8.NR.1.1 Distinguish between rational and irrational numbers using decimal expansion. Convert a decimal expansion which repeats eventually into a rational number.	7–8 M1 Lesson 20: Using the Pythagorean Theorem 7–8 M1 Lesson 22: Rational and Irrational Numbers 7–8 M1 Lesson 23: Revisiting Equations with Squares and Cubes 7–8 M2 Lesson 6: Expressing Repeating Decimals as Fractions
8.NR.1.2 Approximate irrational numbers to compare the size of irrational numbers, locate them approximately on a number line, and estimate the value of expressions.	7–8 M1 Lesson 21: Approximating Values of Roots 7–8 M1 Lesson 22: Rational and Irrational Numbers

Numerical Reasoning

8.NR.2 Solve problems involving radicals and integer exponents including relevant application situations; apply place value understanding with scientific notation and use scientific notation to explain real phenomena.

Georgia's K–12 Mathematics Standards	Aligned Components of *Eureka Math²*
8.NR.2.1 Apply the properties of integer exponents to generate equivalent numerical expressions.	7–8 M1 Lesson 11: Products of Exponential Expressions with Positive Whole-Number Exponents 7–8 M1 Lesson 12: More Properties of Exponents 7–8 M1 Lesson 13: Making Sense of Integer Exponents

Georgia's K–12 Mathematics Standards	Aligned Components of *Eureka Math²*
8.NR.2.2 Use square root and cube root symbols to represent solutions to equations. Recognize that $x^2 = p$ (where p is a positive rational number and $\|x\| \leq 25$) has two solutions and $x^3 = p$ (where p is a negative or positive rational number and $\|x\| \leq 10$) has one solution. Evaluate square roots of perfect squares ≤ 625 and cube roots of perfect cubes $\geq -1{,}000$ and $\leq 1{,}000$.	7–8 M1 Lesson 18: Solving Equations with Squares and Cubes 7–8 M1 Lesson 19: The Pythagorean Theorem 7–8 M1 Lesson 20: Using the Pythagorean Theorem 7–8 M1 Lesson 21: Approximating Values of Roots 7–8 M1 Lesson 23: Revisiting Equations with Squares and Cubes
8.NR.2.3 Use numbers expressed in scientific notation to estimate very large or very small quantities, and to express how many times as much one is than the other.	7–8 M1 Lesson 10: Large and Small Positive Numbers 7–8 M1 Lesson 14: Writing Very Large and Very Small Numbers in Scientific Notation 7–8 M1 Lesson 15: Operations with Numbers Written in Scientific Notation 7–8 M1 Lesson 16: Applications with Numbers Written in Scientific Notation 7–8 M1 Lesson 17: Get to the Point
8.NR.2.4 Add, subtract, multiply and divide numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Interpret scientific notation that has been generated by technology (e.g., calculators or online technology tools).	7–8 M1 Lesson 15: Operations with Numbers Written in Scientific Notation 7–8 M1 Lesson 16: Applications with Numbers Written in Scientific Notation 7–8 M1 Lesson 17: Get to the Point

Patterning and Algebraic Reasoning

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

Georgia's K–12 Mathematics Standards	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.	7–8 M2 Lesson 2: Using Equivalent Expressions to Solve Equations
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.	7–8 M2 Lesson 2: Using Equivalent Expressions to Solve Equations 7–8 M2 Lesson 21: Discount, Markup, Sales Tax, and Tip 7–8 M2 Lesson 22: Percent Increase and Percent Decrease

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's K–12 Mathematics Standards	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.	7–8 M2 Lesson 1: Finding Unknown Angle Measures 7–8 M2 Lesson 3: Solving Equations 7–8 M2 Lesson 5: Solving Problems Involving Equations and Inequalities

Georgia's K–12 Mathematics Standards	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.	7–8 M2 Lesson 4: Using Equations to Solve Inequalities 7–8 M2 Lesson 5: Solving Problems Involving Equations and 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's K–12 Mathematics Standards	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.	7–8 M2 Lesson 12: An Experiment with Ratios and Rates 7–8 M2 Lesson 13: Exploring Tables of 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.	7–8 M2 Lesson 14: Exploring Graphs of Proportional Relationships 7–8 M2 Lesson 15: Relating Representations of Proportional Relationships 7–8 M2 Lesson 16: Applying Proportional Reasoning

Georgia's K–12 Mathematics Standards	Aligned Components of *Eureka Math²*
7.PAR.4.3 Determine whether two quantities presented in authentic problems are in a proportional relationship.	7–8 M2 Lesson 12: An Experiment with Ratios and Rates 7–8 M2 Lesson 13: Exploring Tables of Proportional Relationships 7–8 M2 Lesson 14: Exploring Graphs of Proportional Relationships 7–8 M2 Lesson 15: Relating Representations of Proportional Relationships 7–8 M2 Lesson 19: Proportional Reasoning and Percents
7.PAR.4.4 Identify, represent, and use proportional relationships.	7–8 M2 Lesson 13: Exploring Tables of Proportional Relationships 7–8 M2 Lesson 14: Exploring Graphs of Proportional Relationships 7–8 M2 Lesson 15: Relating Representations of Proportional Relationships 7–8 M2 Lesson 16: Applying Proportional Reasoning 7–8 M2 Lesson 17: Using Proportional Reasoning to Solve Multi-Step Problems 7–8 M2 Lesson 18: Handstand Sprint 7–8 M2 Lesson 19: Proportional Reasoning and Percents
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.	7–8 M2 Lesson 14: Exploring Graphs of Proportional Relationships 7–8 M2 Lesson 15: Relating Representations of 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.	7–8 M3 Lesson 18: Scale Drawings 7–8 M3 Lesson 19: Finding Actual Distances from a Scale Drawing 7–8 M3 Lesson 20: Scale and Scale Factor 7–8 M3 Lesson 21: Modeling with Scale Drawings 7–8 M3 Lesson 22: Dilations

Georgia's K–12 Mathematics Standards	Aligned Components of *Eureka Math²*
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.	7–8 M4 Lesson 5: Proportional Relationships and Slope 7–8 M4 Lesson 6: Slopes of Rising Lines and Falling Lines 7–8 M4 Lesson 7: Using Coordinates to Find Slope 7–8 M4 Lesson 8: Slope-Intercept Form of the Equation of a Line
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.	7–8 M4 Lesson 4: Comparing Proportional Relationships 7–8 M4 Lesson 5: Proportional Relationships and Slope
7.PAR.4.9 Use proportional relationships to solve multi-step ratio and percent problems presented in applicable situations.	7–8 M2 Lesson 16: Applying Proportional Reasoning 7–8 M2 Lesson 17: Using Proportional Reasoning to Solve Multi-Step Problems 7–8 M2 Lesson 18: Handstand Sprint 7–8 M2 Lesson 19: Proportional Reasoning and Percents 7–8 M2 Lesson 20: Commissions, Fees, and Taxes 7–8 M2 Lesson 21: Discount, Markup, Sales Tax, and Tip 7–8 M2 Lesson 22: Percent Increase and Percent Decrease 7–8 M2 Lesson 23: What Is the Best Deal? 7–8 M2 Lesson 24: Simple Interest 7–8 M2 Lesson 25: Applying Percent Error

Georgia's K–12 Mathematics Standards	Aligned Components of *Eureka Math²*
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.	7–8 M6 Lesson 10: Populations and Samples 7–8 M6 Lesson 11: Selecting a Sample 7–8 M6 Lesson 12: Sampling Variability When Estimating a Population Mean 7–8 M6 Lesson 13: Sampling Variability and the Effect of Sample Size 7–8 M6 Lesson 14: Sampling Variability When Estimating a Population Proportion
7.PAR.4.11 Analyze sampling methods and conclude that random sampling produces and supports valid inferences.	7–8 M6 Lesson 10: Populations and Samples 7–8 M6 Lesson 11: Selecting a Sample 7–8 M6 Lesson 12: Sampling Variability When Estimating a Population Mean
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.	7–8 M6 Lesson 12: Sampling Variability When Estimating a Population Mean 7–8 M6 Lesson 13: Sampling Variability and the Effect of Sample Size 7–8 M6 Lesson 14: Sampling Variability When Estimating a Population Proportion

Patterning and Algebraic Reasoning

8.PAR.3 Create and interpret expressions within relevant situations. Create, interpret, and solve linear equations and linear inequalities in one variable to model and explain real phenomena.

Georgia's K–12 Mathematics Standards	Aligned Components of *Eureka Math²*
8.PAR.3.1 Interpret expressions and parts of an expression, in context, by utilizing formulas or expressions with multiple terms and/or factors.	7–8 M2 Lesson 2: Using Equivalent Expressions to Solve Equations 7–8 M2 Lesson 21: Discount, Markup, Sales Tax, and Tip 7–8 M2 Lesson 22: Percent Increase and Percent Decrease
8.PAR.3.2 Describe and solve linear equations in one variable with one solution $(x = a)$, infinitely many solutions $(a = a)$, or no solutions $(a = b)$. Show which of these possibilities is the case by successively transforming the given equation into simpler forms, until an equivalent equation of the form $x = a$, $a = a$, or $a = b$ results (where a and b are different numbers).	7–8 M2 Lesson 8: Solving Equations with Rational Coefficients 7–8 M2 Lesson 9: Linear Equations with More Than One Solution 7–8 M2 Lesson 10: Another Possible Number of Solutions
8.PAR.3.3 Create and solve linear equations and inequalities in one variable within a relevant application.	7–8 M2 Lesson 7: Solving Multi-Step Equations 7–8 M2 Lesson 8: Solving Equations with Rational Coefficients 7–8 M2 Lesson 11: Using Linear Equations to Solve Real-World Problems A1 M1 Lesson 13: Solving Linear Inequalities in One Variable *Supplemental material is necessary to address creating linear inequalities with a variable on both sides.*

Georgia's K–12 Mathematics Standards	Aligned Components of *Eureka Math²*
8.PAR.3.4 Using algebraic properties and the properties of real numbers, justify the steps of a one-solution equation or inequality.	7–8 M2 Lesson 7: Solving Multi-Step Equations 7–8 M2 Lesson 8: Solving Equations with Rational Coefficients 7–8 M2 Lesson 9: Linear Equations with More Than One Solution 7–8 M2 Lesson 10: Another Possible Number of Solutions 7–8 M2 Lesson 11: Using Linear Equations to Solve Real-World Problems A1 M1 Lesson 13: Solving Linear Inequalities in One Variable
8.PAR.3.5 Solve linear equations and inequalities in one variable with coefficients represented by letters and explain the solution based on the contextual, mathematical situation.	*Supplemental material is necessary to address this standard.*
8.PAR.3.6 Use algebraic reasoning to fluently manipulate linear and literal equations expressed in various forms to solve relevant, mathematical problems.	A1 M1 Lesson 12: Rearranging Formulas

Patterning and Algebraic Reasoning

8.PAR.4 Show and explain the connections between proportional and non-proportional relationships, lines, and linear equations; create and interpret graphical mathematical models and use the graphical, mathematical model to explain real phenomena represented in the graph.

Georgia's K–12 Mathematics Standards	Aligned Components of *Eureka Math²*
8.PAR.4.1 Use the equation $y = mx$ (proportional) for a line through the origin to derive the equation $y = mx + b$ (non-proportional) for a line intersecting the vertical axis at b.	7–8 M4 Lesson 5: Proportional Relationships and Slope 7–8 M4 Lesson 6: Slopes of Rising Lines and Falling Lines 7–8 M4 Lesson 7: Using Coordinates to Find Slope 7–8 M4 Lesson 8: Slope-Intercept Form of the Equation of a Line
8.PAR.4.2 Show and explain that the graph of an equation representing an applicable situation in two variables is the set of all its solutions plotted in the coordinate plane.	7–8 M4 Lesson 1: Solutions to Linear Equations in Two Variables 7–8 M4 Lesson 2: The Graph of a Linear Equation in Two Variables

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's K–12 Mathematics Standards	Aligned Components of *Eureka Math²*
7.GSR.5.1 Measure angles in whole non-standard units.	*Supplemental material is necessary to address this standard.*
7.GSR.5.2 Measure angles in whole number degrees using a protractor.	*Supplemental material is necessary to address this standard.*
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.	7–8 M2 Lesson 1: Finding Unknown Angle Measures 7–8 M2 Lesson 2: Using Equivalent Expressions to Solve Equations 7–8 M2 Lesson 7: Solving Multi-Step Equations
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.	7–8 M3 Lesson 3: Exploring and Constructing Circles 7–8 M3 Lesson 4: Area and Circumference of a Circle 7–8 M3 Lesson 5: Area and Circumference of Circular Regions

Georgia's K–12 Mathematics Standards	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.	7–8 M3 Lesson 3: Exploring and Constructing Circles 7–8 M3 Lesson 4: Area and Circumference of a Circle 7–8 M3 Lesson 5: Area and Circumference of Circular Regions 7–8 M3 Lesson 6: Watering a Lawn
7.GSR.5.6 Solve realistic problems involving surface area of right prisms and cylinders.	7–8 M5 Lesson 11: Surface Areas of Prisms and Pyramids 7–8 M5 Lesson 12: Surface Area of Cylinders 7–8 M5 Lesson 18: Designing a Fish Tank
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.	7–8 M5 Lesson 13: Understanding Planes and Cross Sections 7–8 M5 Lesson 14: Cross Section Scavenger Hunt 7–8 M5 Lesson 15: Proportionality and Scale Factor of Cross Sections *Supplemental material is necessary to address cross sections of cones, cylinders, and spheres.*
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.	7–8 M5 Lesson 16: Volume of Prisms 7–8 M5 Lesson 17: Volume of Cylinders

Geometric and Spatial Reasoning

8.GSR.8 Solve geometric problems involving the Pythagorean Theorem and the volume of geometric figures to explain real phenomena.

Georgia's K–12 Mathematics Standards	Aligned Components of *Eureka Math²*
8.GSR.8.1 Explain a proof of the Pythagorean Theorem and its converse using visual models.	7–8 M1 Lesson 19: The Pythagorean Theorem 7–8 M3 Lesson 15: Proving the Pythagorean Theorem 7–8 M3 Lesson 16: Proving the Converse of the Pythagorean Theorem
8.GSR.8.2 Apply the Pythagorean Theorem to determine unknown side lengths in right triangles within authentic, mathematical problems in two and three dimensions.	7–8 M1 Lesson 19: The Pythagorean Theorem 7–8 M3 Lesson 16: Proving the Converse of the Pythagorean Theorem 7–8 M3 Lesson 17: Applications of the Pythagorean Theorem 7–8 M3 Lesson 29: Using Similar Figures to Find Unknown Side Lengths 7–8 M5 Lesson 19: Volumes of Pyramids and Cones
8.GSR.8.3 Apply the Pythagorean Theorem to find the distance between two points in a coordinate system in practical, mathematical problems.	7–8 M3 Lesson 17: Applications of the Pythagorean Theorem
8.GSR.8.4 Apply the formulas for the volume of cones, cylinders, and spheres and use them to solve in relevant problems.	7–8 M5 Lesson 16: Volume of Prisms 7–8 M5 Lesson 17: Volume of Cylinders 7–8 M5 Lesson 18: Designing a Fish Tank 7–8 M5 Lesson 19: Volumes of Pyramids and Cones 7–8 M5 Lesson 20: Volume of Spheres 7–8 M5 Lesson 21: Volume of Composite Solids 7–8 M5 Lesson 22: Volumes of Truncated Cones and Pyramids 7–8 M5 Lesson 23: Applications of 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's K–12 Mathematics Standards	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.	7–8 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.	7–8 M6 Lesson 1: What Is Probability? 7–8 M6 Lesson 2: Outcomes of Chance Experiments 7–8 M6 Lesson 5: Outcomes That Are Not Equally Likely 7–8 M6 Lesson 7: 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.	7–8 M6 Lesson 6: The Law of Large Numbers

Georgia's K–12 Mathematics Standards	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.	7–8 M6 Lesson 3: Theoretical Probability 7–8 M6 Lesson 6: 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.	7–8 M6 Lesson 6: The Law of Large Numbers 7–8 M6 Lesson 7: 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.	7–8 M6 Lesson 14: Sampling Variability When Estimating a Population Proportion 7–8 M6 Lesson 15: Comparing Sample Means 7–8 M6 Lesson 16: Comparing Population Means 7–8 M6 Lesson 17: Memory Games *Supplemental material is necessary to address drawing inferences about two populations with categorical data.*

Functional and Graphical Reasoning

8.FGR.5 Describe the properties of functions to define, evaluate, and compare relationships, and use functions and graphs of functions to model and explain real phenomena.

Georgia's K–12 Mathematics Standards	Aligned Components of *Eureka Math²*
8.FGR.5.1 Show and explain that a function is a rule that assigns to each input exactly one output.	7–8 M5 Lesson 1: Motion and Speed 7–8 M5 Lesson 2: Definition of a Function 7–8 M5 Lesson 4: More Examples of Functions 7–8 M5 Lesson 5: Graphs of Functions and Equations
8.FGR.5.2 Within realistic situations, identify and describe examples of functions that are linear or nonlinear. Sketch a graph that exhibits the qualitative features of a function that has been described verbally.	7–8 M5 Lesson 9: Increasing and Decreasing Functions 7–8 M5 Lesson 10: Graphs of Nonlinear Functions
8.FGR.5.3 Relate the domain of a linear function to its graph and where applicable to the quantitative relationship it describes.	A1 M3 Lesson 1: The Definition of a Function A1 M3 Lesson 2: Representing, Naming, and Evaluating Functions A1 M3 Lesson 3: The Graph of a Function A1 M3 Lesson 4: The Graph of the Equation $y = f(x)$ A1 M3 Lesson 5: Using Pseudocode to Compare Graphs of Functions and Graphs of Equations A1 M3 Lesson 6: Representations of Functions A1 M3 Lesson 7: Inverses of Linear Functions

Georgia's K–12 Mathematics Standards	Aligned Components of *Eureka Math²*
8.FGR.5.4 Compare properties (rate of change and initial value) of two functions used to model an authentic situation each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions).	7–8 M5 Lesson 7: Interpreting Rate of Change and Initial Value 7–8 M5 Lesson 8: Comparing Functions
8.FGR.5.5 Write and explain the equations $y = mx + b$ (slope-intercept form), $Ax + By = C$ (standard form), and $(y - y_1) = m(x - x_1)$ (point-slope form) as defining a linear function whose graph is a straight line to reveal and explain different properties of the function.	7–8 M4 Lesson 1: Solutions to Linear Equations in Two Variables 7–8 M4 Lesson 2: The Graph of a Linear Equation in Two Variables 7–8 M4 Lesson 8: Slope-Intercept Form of the Equation of a Line 7–8 M4 Lesson 9: Point-Slope Form of the Equation of a Line 7–8 M4 Lesson 10: Comparing Equations in Different Forms 7–8 M5 Lesson 3: Linear Functions and Proportionality 7–8 M5 Lesson 6: Linear Functions and Rate of Change 7–8 M5 Lesson 7: Interpreting Rate of Change and Initial Value
8.FGR.5.6 Write a linear function defined by an expression in different but equivalent forms to reveal and explain different properties of the function.	*Supplemental material is necessary to address this standard.*

Georgia's K–12 Mathematics Standards	Aligned Components of *Eureka Math²*
8.FGR.5.7 Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) values, including reading these from a table or from a graph.	7–8 M5 Lesson 6: Linear Functions and Rate of Change 7–8 M5 Lesson 7: Interpreting Rate of Change and Initial Value 7–8 M5 Lesson 23: Applications of Volume
8.FGR.5.8 Explain the meaning of the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.	7–8 M5 Lesson 6: Linear Functions and Rate of Change 7–8 M5 Lesson 7: Interpreting Rate of Change and Initial Value
8.FGR.5.9 Graph and analyze linear functions expressed in various algebraic forms and show key characteristics of the graph to describe applicable situations.	7–8 M4 Lesson 8: Slope-Intercept Form of the Equation of a Line 7–8 M4 Lesson 9: Point-Slope Form of the Equation of a Line 7–8 M4 Lesson 10: Comparing Equations in Different Forms

Functional and Graphical Reasoning

8.FGR.6 Solve practical, linear problems involving situations using bivariate quantitative data.

Georgia's K–12 Mathematics Standards	Aligned Components of *Eureka Math²*
8.FGR.6.1 Show that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, visually fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line of best fit.	7–8 M6 Lesson 20: Informally Fitting a Line to Data 7–8 M6 Lesson 21: Linear Models
8.FGR.6.2 Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercepts.	7–8 M6 Lesson 20: Informally Fitting a Line to Data 7–8 M6 Lesson 21: Linear Models
8.FGR.6.3 Explain the meaning of the predicted slope (rate of change) and the predicted intercept (constant term) of a linear model in the context of the data.	7–8 M6 Lesson 20: Informally Fitting a Line to Data 7–8 M6 Lesson 21: Linear Models
8.FGR.6.4 Use appropriate graphical displays from data distributions involving lines of best fit to draw informal inferences and answer the statistical investigative question posed in an unbiased statistical study.	7–8 M6 Lesson 21: Linear Models 8 M6 Lesson 16: Using the Investigative Process 8 M6 Lesson 17: Analyzing the Model

Functional and Graphical Reasoning

8.FGR.7 Justify and use various strategies to solve systems of linear equations to model and explain realistic phenomena.

Georgia's K–12 Mathematics Standards	Aligned Components of *Eureka Math²*
8.FGR.7.1 Interpret and solve relevant mathematical problems leading to two linear equations in two variables.	7–8 M4 Lesson 17: Writing and Solving Systems of Equations for Mathematical Problems 7–8 M4 Lesson 18: Writing and Solving Systems of Equations for Real-World Problems 7–8 M4 Lesson 20: Modeling a Real-World Problem
8.FGR.7.2 Show and explain that solutions to a system of two linear equations in two variables correspond to points of intersection of their graphs, because the points of intersection satisfy both equations simultaneously.	7–8 M4 Lesson 11: Introduction to Systems of Linear Equations 7–8 M4 Lesson 12: Identifying Solutions 7–8 M4 Lesson 13: More Than One Solution 7–8 M4 Lesson 16: Choosing a Solution Method 7–8 M4 Lesson 19: Back to the Coordinate Plane 7–8 M4 Lesson 20: Modeling a Real-World Problem
8.FGR.7.3 Approximate solutions of two linear equations in two variables by graphing the equations and solving simple cases by inspection.	7–8 M4 Lesson 11: Introduction to Systems of Linear Equations 7–8 M4 Lesson 12: Identifying Solutions 7–8 M4 Lesson 13: More Than One Solution 7–8 M4 Lesson 16: Choosing a Solution Method 7–8 M4 Lesson 19: Back to the Coordinate Plane 7–8 M4 Lesson 20: Modeling a Real-World Problem

Georgia's K–12 Mathematics Standards	Aligned Components of *Eureka Math²*
8.FGR.7.4 Analyze and solve systems of two linear equations in two variables algebraically to find exact solutions.	7–8 M4 Lesson 14: Solving Systems of Linear Equations Without Graphing 7–8 M4 Lesson 15: The Substitution Method 7–8 M4 Lesson 16: Choosing a Solution Method 7–8 M4 Lesson 17: Writing and Solving Systems of Equations for Mathematical Problems 7–8 M4 Lesson 18: Writing and Solving Systems of Equations for Real-World Problems 7–8 M4 Lesson 19: Back to the Coordinate Plane 7–8 M4 Lesson 20: Modeling a Real-World Problem A1 M2 Lesson 9: A New Way to Solve Systems A1 M2 Lesson 10: The Elimination Method A1 M2 Lesson 11: Applications of Systems of Equations
8.FGR.7.5 Create and compare the equations of two lines that are either parallel to each other, perpendicular to each other, or neither parallel nor perpendicular.	7–8 M4 Lesson 12: Identifying Solutions *Supplemental material is necessary to address equations of lines that are perpendicular to each other.*