

### Grade 6 | Georgia's K-12 Mathematics Standards Correlation to Eureka Math®

#### About Eureka Math

Created by Great Minds<sup>®</sup>, a mission-driven Public Benefit Corporation, *Eureka Math*<sup>®</sup> 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

Great Minds offers detailed analyses that demonstrate how each grade of *Eureka Math* aligns with specific state standards. Access these free alignment studies at <u>greatminds.org/state-studies</u>.

#### Data

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

#### **Full Suite of Resources**

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

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

#### 6 | Georgia's K–12 Mathematics Standards Correlation to Eureka Math

Standards for Mathematical Practice	Aligned Components of Eureka Math
MP.1 Make sense of problems and persevere in solving them. MP.2 Reason abstractly and quantitatively.	Lessons in every module engage students in mathematical practices. These are designated in the Module Overview and labeled in lessons. For example:
MP.3 Construct viable arguments and critique the reasoning of others.	Lesson 11: Absolute Value—Magnitude and Distance Student Outcomes
MP.4 Model with mathematics.	<ul> <li>Students understand the absolute value of a number as its distance from zero on the number line.</li> <li>Students use absolute value to find the magnitude of a positive or negative quantity in a real-world situation.</li> </ul>
MP.5 Use appropriate tools strategically.	For this warm-up exercise, students work individually to record two different rational numbers that are the same distance from zero. Students find as many examples as possible and reach a conclusion about what must be true for every pair of numbers that lie that same distance from zero.
<b>MP.6</b> Attend to precision.	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$
<b>MP.7</b> Look for and make use of structure.	<ul> <li>After two minutes:</li> <li>What are some examples you found (pairs of numbers that are the same distance from zero)?</li> <li>- <sup>1</sup>/<sub>2</sub> and <sup>1</sup>/<sub>2</sub>, 8.01 and -8.01, -7 and 7.</li> <li>What is the relationship between each pair of numbers?</li> </ul>
<b>MP.8</b> Look for and express regularity in repeated reasoning.	<ul> <li>They are opposites.</li> <li>How does each pair of numbers relate to zero?</li> <li>Both numbers in each pair are the same distance from zero.</li> </ul>

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Mathematical Modeling Framework	Aligned Components of Eureka Math
MF.1	Lessons in every module engage students in mathematical modeling.
Explore and describe real-life, mathematical situations or problems.	
MF.2	
Gather information, make assumptions, and define variables related to the problem.	
MF.3	
Create a model and arrive at a solution to explain the problem presented.	
MF.4	
Analyze and revise models, as necessary.	
MF.5	
Evaluate the model and interpret solutions generated from other models. Draw and validate conclusions.	

Framework for Statistical Reasoning	Aligned Components of Eureka Math
SR	Lessons in Module 6 engage students in statistical reasoning.
Formulate an investigative question, and collect, model, and analyze data distributions for variability to answer statistical questions and solve problems in context.	
SR.1	
Ask: Create a statistical investigative question that can be answered by gathering data from real situations and determine strategies for gathering data to answer the statistical investigative question.	
SR.2	
Ask: Distinguish between statistical and non-statistical questions.	
SR.3	
Ask: Write a statistical investigative question as one that anticipates variability in the data.	
SR.4	
Collect: Summarize categorical and quantitative (numerical) data sets in relation to the context: display the distributions of quantitative (numerical) data in plots on a number line, including dot plots, histograms, and box plots and display the distribution of categorical data using bar graphs.	

Framework for Statistical Reasoning	Aligned Components of Eureka Math
SR.5	Lessons in Module 6 engage students in statistical reasoning.
Collect: Design simple experiments and collect data. Use data gathered from realistic scenarios and simulations to determine quantitative measures of center (median and/or mean) and variability (interquartile range and range). Use these quantities to draw conclusions about the data, compare different numerical data sets, and make predictions.	
SR.6	
Analyze: Relate the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered.	
SR.7	
Analyze: Describe the impact that inserting or deleting a data point has on the mean and the median of a data set. Create data displays using a dot plot or box plot to examine this impact.	
SR.8	
Interpret: Interpret numerical data to answer the statistical investigative question created.	
SR.9	
Interpret: Describe the distribution of a quantitative (numerical) variable collected, including its center, variability, and overall shape, to answer a statistical investigative question.	

### Numerical Reasoning—multiplication and division of whole numbers and fractions, and all four operations with decimal numbers

6.NR.1 Solve relevant, mathematical problems involving operations with whole numbers, fractions, and decimal numbers.

Georgia's K–12 Mathematics Standards	Aligned Components of Eureka Math
<b>6.NR.1.1</b> Fluently add and subtract any combination of fractions to solve problems.	<ul> <li>G5 M3 Lesson 3: Add fractions with unlike units using the strategy of creating equivalent fractions.</li> <li>G5 M3 Lesson 4: Add fractions with sums between 1 and 2.</li> <li>G5 M3 Lesson 5: Subtract fractions with unlike units using the strategy of creating equivalent fractions.</li> <li>G5 M3 Lesson 6: Subtract fractions from numbers between 1 and 2.</li> <li>G5 M3 Topic C: Making Like Units Numerically</li> <li>G5 M3 Lesson 14: Strategize to solve multi-term problems.</li> <li>G5 M6 Lesson 26: Solidify writing and interpreting numerical expressions.</li> </ul>
<b>6.NR.1.2</b> Multiply and divide any combination of whole numbers, fractions, and mixed numbers using a student-selected strategy. Interpret products and quotients of fractions and solve word problems.	G6 M2 TA: Arithmetic Operations Including Dividing by a Fraction Supplemental material is necessary to address using a student-selected strategy.
<b>6.NR.1.3</b> Perform operations with multi-digit decimal numbers fluently using models and student-selected strategies.	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 into Whole Number Division Using Mental Math

### Numerical Reasoning—multiplication and division of whole numbers and fractions, and all four operations with decimal numbers

6.NR.2 Apply operations with whole numbers, fractions and decimals within relevant applications.

Mathematics Standards	Aligned Components of Eureka Math
6.NR.2.1	G6 M6 Lesson 7: The Mean as a Balance Point
Describe and interpret the center of the distribution by the equal share value (mean).	G6 M6 Lesson 8: Variability in a Data Distribution
	G6 M6 Lesson 9: The Mean Absolute Deviation (MAD)
	G6 M6 Lesson 10: Describing Distributions Using the Mean and MAD
	G6 M6 Lesson 11: Describing Distributions Using the Mean and MAD
	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
6.NR.2.2	G6 M6 Lesson 2: Displaying a Data Distribution
Summarize categorical and quantitative	G6 M6 Lesson 3: Creating a Dot Plot
(numerical) data sets in relation	G6 M6 Lesson 4: Creating a Histogram
of quantitative (numerical) data in plots	G6 M6 Lesson 5: Describing a Distribution Displayed in a Histogram
on a number line, including dot plots,	G6 M6 Lesson 6: Describing the Center of a Distribution Using the Mean
histograms, and box plots and display	G6 M6 Lesson 7: The Mean as a Balance Point
bar graphs.	G6 M6 Lesson 8: Variability in a Data Distribution
	G6 M6 Lesson 10: Describing Distributions Using the Mean and MAD
	G6 M6 Lesson 11: Describing Distributions Using the Mean and MAD
	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
	G6 M6 Lesson 17: Developing a Statistical Project

Mathematics Standards	Aligned Components of Eureka Math
6.NR.2.2 continued	G6 M6 Lesson 18: Connecting Graphical Representations and Numerical Summaries
	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
	G6 M6 Lesson 22: Presenting a Summary of a Statistical Project
	Supplemental material is necessary to address categorical data.
6.NR.2.3	G6 M6 Lesson 4: Creating a Histogram
Interpret numerical data to answer a statistical investigative question created. Describe the distribution of a quantitative (numerical) variable collected, including its center, variability, and overall shape.	G6 M6 Lesson 5: Describing a Distribution Displayed in a Histogram
	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 Lesson 17: Developing a Statistical Project
	G6 M6 Lesson 18: Connecting Graphical Representations and Numerical Summaries
	G6 M6 Lesson 19: Comparing Data Distributions
	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

#### Georgia's K–12 lathematics Standards

Mathematics Standards	Aligned Components of Eureka Math
6.NR.2.4	G6 M6 Lesson 2: Displaying a Data Distribution
Design simple experiments and	G6 M6 Lesson 3: Creating a Dot Plot
collect data. Use data gathered from	G6 M6 Lesson 4: Creating a Histogram
to determine quantitative measures	G6 M6 Lesson 5: Describing a Distribution Displayed in a Histogram
of center (median and/or mean) and variability (interquartile range and range). Use these quantities to draw conclusions about the data, compare different numerical data sets, and make predictions.	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
6.NR.2.5	G6 M6 Lesson 2: Displaying a Data Distribution
Relate the choice of measures of center	G6 M6 Lesson 3: Creating a Dot Plot
and variability to the shape of the data	G6 M6 Lesson 4: Creating a Histogram
data were gathered.	G6 M6 Lesson 5: Describing a Distribution Displayed in a Histogram
	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
6.NR.2.6	Supplemental material is necessary to address this standard.
Describe the impact that inserting or deleting a data point has on the mean and the median of a data set. Create data displays using a dot plot or box plot to examine this impact.	

### Numerical Reasoning—multiplication and division of whole numbers and fractions, and all four operations with decimal numbers

6.NR.3 Solve a variety of problems involving whole numbers and their opposites; model rational numbers on a number line to describe problems presented in relevant, mathematical situations.

Georgia's K–12 Mathematics Standards	Aligned Components of Eureka Math
<b>6.NR.3.1</b> Identify and compare integers and explain the meaning of zero based on multiple authentic situations.	<ul> <li>G6 M3 Lesson 2: Real-World Positive and Negative Numbers and Zero</li> <li>G6 M3 Lesson 3: Real-World Positive and Negative Numbers and Zero</li> <li>G6 M3 Lesson 4: The Opposite of a Number</li> <li>G6 M3 Lesson 5: The Opposite of a Number's Opposite</li> <li>G6 M3 Lesson 6: Rational Numbers on the Number Line</li> <li>G6 M3 Lesson 13: Statements of Order in the Real World</li> </ul>
<b>6.NR.3.2</b> Order and plot integers on a number line and use distance from zero to discover the connection between integers and their opposites.	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
<b>6.NR.3.3</b> Recognize and explain that opposite signs of integers indicate locations on opposite sides of zero on the number line; recognize and explain that the opposite of the opposite of a number is the number itself.	<ul> <li>G6 M3 Lesson 2: Real-World Positive and Negative Numbers and Zero</li> <li>G6 M3 Lesson 3: Real-World Positive and Negative Numbers and Zero</li> <li>G6 M3 Lesson 4: The Opposite of a Number</li> <li>G6 M3 Lesson 5: The Opposite of a Number's Opposite</li> <li>G6 M3 Lesson 6: Rational Numbers on the Number Line</li> <li>G6 M3 Lesson 13: Statements of Order in the Real World</li> </ul>

Aligned Components of Eureka Math
G6 M3 Lesson 8: Ordering Integers and Other Rational Numbers
G6 M3 Lesson 11: Absolute Value–Magnitude and Distance G6 M3 Lesson 12: The Relationship Between Absolute Value and Order G6 M3 Lesson 13: Statements of Order in the Real World
G6 M3 Lesson 11: Absolute Value–Magnitude and Distance
G6 M3 Lesson 12: The Relationship Between Absolute Value and Order
G6 M3 Lesson 12: The Relationship Between Absolute Value and Order

#### Georgia's K–12 Mathematics Standards

### Numerical Reasoning—multiplication and division of whole numbers and fractions, and all four operations with decimal numbers

6.NR.4 Solve a variety of contextual problems involving ratios, unit rates, equivalent ratios, percentages, and conversions within measurement systems using proportional reasoning.

Georgia's K–12 Mathematics Standards	Aligned Components of Eureka Math
<b>6.NR.4.1</b> Explain the concept of a ratio, represent ratios, and use ratio language to describe a relationship between two quantities.	G6 M1 Topic A: Representing and Reasoning About Ratios G6 M1 Topic B: Collections of Equivalent Ratios G6 M1 Topic C: Unit Rates G6 M1 Lesson 24: Percent and Rates per 100 G6 M1 Lesson 25: A Fraction as a Percent
<b>6.NR.4.2</b> Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios.	G6 M1 Topic A: Representing and Reasoning About Ratios
<b>6.NR.4.3</b> Solve problems involving proportions using a variety of student-selected strategies.	<ul> <li>G6 M1 Lesson 3: Equivalent Ratios</li> <li>G6 M1 Lesson 4: Equivalent Ratios</li> <li>G6 M1 Lesson 5: Solving Problems by Finding Equivalent Ratios</li> <li>G6 M1 Lesson 6: Solving Problems by Finding Equivalent Ratios</li> <li>G6 M1 Lesson 7: Associated Ratios and the Value of a Ratio</li> <li>G6 M1 Lesson 8: Equivalent Ratios Defined Through the Value of a Ratio</li> <li>G6 M1 Topic B: Collections of Equivalent Ratios</li> <li>G6 M1 Lesson 16: From Ratios to Rates</li> <li>G6 M1 Lesson 17: From Rates to Ratios</li> </ul>

Georgia's K–12 Mathematics Standards	Aligned Components of Eureka Math
6.NR.4.3 continued	G6 M1 Lesson 18: Finding a Rate by Dividing Two Quantities G6 M1 Lesson 19: Comparison Shopping–Unit Price and Related Measurement Conversions G6 M1 Lesson 20: Comparison Shopping–Unit Price and Related Measurement Conversions
<b>6.NR.4.4</b> Describe the concept of rates and unit rate in the context of a ratio relationship.	G6 M1 Topic C: Unit Rates
<b>6.NR.4.5</b> Solve unit rate problems including those involving unit pricing and constant speed.	G6 M1 Lesson 21: Getting the Job Done–Speed, Work, and Measurement Units G6 M1 Lesson 22: Getting the Job Done–Speed, Work, and Measurement Units G6 M1 Lesson 23: Problem-Solving Using Rates, Unit Rates, and Conversions
<b>6.NR.4.6</b> Calculate a percent of a quantity as a rate per 100 and solve everyday problems given a percent.	G6 M1 Topic D: Percent
<b>6.NR.4.7</b> Use ratios to convert within measurement systems (customary and metric) to solve authentic problems that exist in everyday life.	G6 M1 Lesson 21: Getting the Job Done–Speed, Work, and Measurement Units G6 M1 Lesson 22: Getting the Job Done–Speed, Work, and Measurement Units G6 M1 Lesson 23: Problem-Solving Using Rates, Unit Rates, and Conversions

## Geometric & Spatial Reasoning—area of polygons, volume of right rectangular prisms, surface area of 3-D figures

6.GSR.5 Solve relevant problems involving area, surface area, and volume.

Georgia's K–12 Mathematics Standards	Aligned Components of Eureka Math
6.GSR.5.1	G6 M5 Topic A: Area of Triangles, Quadrilaterals, and Polygons
Explore area as a measurable attribute	G6 M5 Lesson 8: Drawing Polygons in the Coordinate Plane
polygons conceptually by composing or decomposing into rectangles, triangles, and other shapes. Find the area of these geometric figures to solve problems.	G6 M5 Lesson 9: Determining Perimeter and Area of Polygons on the Coordinate Plane
6.GSR.5.2	G6 M5 Topic D: Nets and Surface Area
Given the net of three-dimensional	
faces, determine the surface area	
of these figures.	
6.GSR.5.3	G6 M5 Topic C: Volume of Right Rectangular Prisms
Calculate the volume of right rectangular prisms with fractional edge lengths by applying the formula, $V = (area of base) \times (height).$	G6 M5 Lesson 19: Surface Area and Volume in the Real World
	G6 M5 Lesson 20: Addendum Lesson for Modeling–Applying Surface Area and Volume to Aquariums

# Patterning & Algebraic Reasoning—numerical and algebraic expressions, factors, multiples, algebraic expressions, plotting points in all four quadrants, rational numbers on a number line, polygons in the coordinate plane

6.PAR.6 Identify, write, evaluate, and interpret numerical and algebraic expressions as mathematical models to explain authentic situations.

#### Georgia's K–12 Mathematics Standards

Aligned Components of Eureka Math

<b>6.PAR.6.1</b> Write and evaluate numerical	G6 M4 Lesson 6: The Order of Operations
expressions involving rational bases and whole-number exponents.	
6.PAR.6.2	G6 M2 Lesson 17: Divisibility Tests for 3 and 9
Determine greatest common factors and least common multiples using a variety of strategies to make sense of applicable problems.	G6 M2 Lesson 18: Least Common Multiple and Greatest Common Factor
	G6 M2 Lesson 19: The Euclidean Algorithm as an Application of the Long Division Algorithm
6.PAR.6.3	G6 M4 Topic C: Replacing Letters and Numbers
Write and read expressions that represent operations with numbers and variables in realistic situations.	G6 M4 Topic D: Expanding, Factoring, and Distributing Expressions
	G6 M4 Topic E: Expressing Operations in Algebraic Form
	G6 M4 Topic F: Writing and Evaluating Expressions and Formulas
6.PAR.6.4	G6 M4 Topic C: Replacing Letters and Numbers
Evaluate expressions when given values for the variables, including expressions that arise in everyday situations.	G6 M4 Topic D: Expanding, Factoring, and Distributing Expressions
	G6 M4 Topic E: Expressing Operations in Algebraic Form
	G6 M4 Topic F: Writing and Evaluating Expressions and Formulas

Mathematics Standards	Aligned Components of Eureka Math
6.PAR.6.5	G6 M4 Topic A: Relationships of the Operations
Apply the properties of operations to identify and generate equivalent expressions.	G6 M4 Lesson 9: Writing Addition and Subtraction Expressions
	G6 M4 Lesson 11: Factoring Expressions
	G6 M4 Lesson 12: Distributing Expressions

#### Patterning & Algebraic Reasoning-numerical and algebraic expressions, factors, multiples, algebraic expressions, plotting points in all four quadrants, rational numbers on a number line, polygons in the coordinate plane

6.PAR.7 Write and solve one-step equations and inequalities as mathematical models to explain authentic, realistic situations.

Georgia's K–12
Mathematics Standards

#### Aligned Components of Eureka Math

<b>6.PAR.7.1</b> Solve one-step equations and inequalities involving variables when values for the variables are given. Determine whether an equation and inequality involving a variable is true or false for a given value of the variable.	G6 M4 Topic G: Solving Equations G6 M4 Topic H: Applications of Equations
<b>6.PAR.7.2</b> Write one-step equations and inequalities to represent and solve problems; explain that a variable can represent an unknown number or any number in a specified set.	G6 M4 Topic F: Writing and Evaluating Expressions and Formulas G6 M4 Topic G: Solving Equations G6 M4 Topic H: Applications of Equations

Mathematics Standards	Aligned Components of Eureka Math
6.PAR.7.3	G6 M4 Lesson 26: One-Step Equations–Addition and Subtraction
Solve problems by writing and	G6 M4 Lesson 27: One-Step Equations–Multiplication and Division
solving equations of the form	G6 M4 Lesson 28: Two-Step Problems–All Operations
in which p, q and x are all nonnegative	G6 M4 Lesson 29: Multi-Step Problems–All Operations
rational numbers.	G6 M4 Lesson 30: One-Step Problems in the Real World
	G6 M4 Lesson 31: Problems in Mathematical Terms
	G6 M4 Lesson 32: Multi-Step Problems in the Real World
6.PAR.7.4	G6 M4 Lesson 33: From Equations to Inequalities
Recognize and generate inequalities of the form $x > c$ , $x \ge c$ , $x < c$ , or $x \le c$ to explain situations that have infinitely many solutions; represent solutions of such inequalities on a number line.	G6 M4 Lesson 34: Writing and Graphing Inequalities in Real-World Problems

# Patterning & Algebraic Reasoning—numerical and algebraic expressions, factors, multiples, algebraic expressions, plotting points in all four quadrants, rational numbers on a number line, polygons in the coordinate plane

6.PAR.8 Graph rational numbers as points on the coordinate plane to represent and solve contextual, mathematical problems; draw polygons using the coordinates for their vertices and find the length of a side of a polygon.

Mathematics Standards	Aligned Components of Eureka Math
6.PAR.8.1	G6 M3 Topic A: Understanding Positive and Negative Numbers on the Number Line
Locate and position rational numbers on a horizontal or vertical number line; find and position pairs of integers and other rational numbers on a coordinate plane.	G6 M3 Topic C: Rational Numbers and the Coordinate Plane
6.PAR.8.2	G6 M3 Topic C: Rational Numbers and the Coordinate Plane
Show and explain that signs of numbers in ordered pairs indicate locations in quadrants of the coordinate plane and determine how two ordered pairs may differ based only on the signs.	
6.PAR.8.3	G6 M3 Topic C: Rational Numbers and the Coordinate Plane
Solve 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 <i>x</i> -coordinate or the same <i>y</i> -coordinate.	

Mathematics Standards	Aligned Components of Eureka Math
6.PAR.8.4	G6 M3 Topic C: Rational Numbers and the Coordinate Plane
Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same <i>x</i> -coordinate or the same <i>y</i> -coordinate.	

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