Grade 7 | South Carolina College- and Career-Ready Mathematics Standards Correlation to *Eureka Math*®

About *Eureka Math*

Created by Great Minds®, a mission-driven Public Benefit Corporation, *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

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 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 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

Mathematical Process Standards	Aligned Components of *Eureka Math*
MPS.PS.1 Make sense of problems and persevere in solving them strategically.	Lessons in every module engage students in mathematical processes. These are designated in the Module Overview and labeled in lessons. For example:

MPS.RC.1

Explain ideas using precise and contextually appropriate mathematical language, tools, and models.

MPS.C.1

Demonstrate a deep and flexible conceptual understanding of mathematical ideas, operations, and relationships while making real-world connections.

MPS.AJ.1

Use critical thinking skills to reason both abstractly and quantitatively.

MPS.SP.1

Identify and apply regularity in repeated reasoning to make generalizations.

A STORY OF RATIOS — Lesson 13 — 7•3

Questions leading to finding a solution:

- What is a solution set of an inequality?
  - *A solution set contains more than one number that makes the inequality a true statement.*
- Is -3 a solution to our inequality in part (a)?
  - *Yes. When the value of -3 is substituted into the inequality, the resulting statement is true.*
- Could -4 be a solution to our inequality in part (a)?
  - *Substituting -4 does not result in a true statement because -12 is equal to, but not greater than -12.*
- We have found that $x = -3$ is a solution to the inequality in part (a) where $x = -4$ and $x = -5$ are not. What is meant by the minimum value in this inequality? Explain.

MP.2

  - *The minimum value is the smallest value that makes the inequality true. -3 is not the minimum value because there are rational numbers that are smaller than -3 but greater than -4. For example, $-3\frac{1}{2}$ is smaller than -3 but still creates a true statement.*
- How is solving an inequality similar to solving an equation? How is it different?
  - *Solving an equation and an inequality are similar in the sequencing of steps taken to solve for the variable. The same if-then moves are used to solve for the variable.*
  - *They are different because in an equation, you get one solution, but in an inequality, there are an infinite number of solutions.*

Data, Probability, and Statistical Reasoning
7.DPSR.1 Analyze data sets to identify their statistical elements.

South Carolina College- and Career-Ready Mathematics Standards	Aligned Components of *Eureka Math*
7.DPSR.1.1 Create stem-and-leaf plots to represent numerical data sets in mathematical and real-world situations.	*Supplemental material is necessary to address this standard.*
7.DPSR.1.2 Use the shape of the graph to select the measure of center (mean, median, or mode) that best describes the data set.	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 mode.*
7.DPSR.1.3 Calculate and interpret the measures of center (*mean, median, mode*) and spread (*mean absolute deviation, interquartile range, range*) in mathematical and real-world situations.	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 mode.*

South Carolina College- and Career-Ready Mathematics Standards	Aligned Components of *Eureka Math*
7.DPSR.1.4 Create histograms to represent data sets and interpret histograms to answer questions or draw conclusions about data sets.	G6 M6 Lesson 2: Displaying a Data Distribution G6 M6 Lesson 3: Creating a Dot Plot G6 M6 Lesson 4: Creating a Histogram G6 M6 Lesson 5: Describing a Distribution Displayed in a Histogram G6 M6 Lesson 6: Describing the Center of a Distribution Using the Mean G6 M6 Lesson 7: The Mean as a Balance Point G6 M6 Lesson 8: Variability in a Data Distribution G6 M6 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 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

Data, Probability, and Statistical Reasoning
7.DPSR.2 Calculate and interpret probability.

South Carolina College- and Career-Ready Mathematics Standards	Aligned Components of *Eureka Math*
7.DPSR.2.1 Identify the sample space for a simple event.	G7 M5 Lesson 1: Chance Experiments
7.DPSR.2.2 Calculate and interpret the theoretical probability of a simple random event.	G7 M5 Lesson 4: Calculating Probabilities for Chance Experiments with Equally Likely Outcomes
7.DPSR.2.3 Calculate and interpret the experimental probability of a random event related to a simple experiment.	G7 M5 Lesson 2: Estimating Probabilities by Collecting Data G7 M5 Lesson 3: Chance Experiments with Equally Likely Outcomes G7 M5 Lesson 4: Calculating Probabilities for Chance Experiments with Equally Likely Outcomes G7 M5 Lesson 5: Chance Experiments with Outcomes That Are Not Equally Likely G7 M5 Lesson 8: The Difference Between Theoretical Probabilities and Estimated Probabilities G7 M5 Lesson 12: Applying Probability to Make Informed Decisions
7.DPSR.2.4 Compare and contrast the experimental and theoretical probabilities for a simple experiment.	G7 M5 Lesson 2: Estimating Probabilities by Collecting Data G7 M5 Lesson 3: Chance Experiments with Equally Likely Outcomes G7 M5 Lesson 4: Calculating Probabilities for Chance Experiments with Equally Likely Outcomes G7 M5 Lesson 5: Chance Experiments with Outcomes That Are Not Equally Likely G7 M5 Lesson 8: The Difference Between Theoretical Probabilities and Estimated Probabilities G7 M5 Lesson 12: Applying Probability to Make Informed Decisions

Measurement, Geometry, and Spatial Reasoning
7.MGSR.1 Determine the measurements of geometric figures.

South Carolina College- and Career-Ready Mathematics Standards	Aligned Components of *Eureka Math*
7.MGSR.1.1 Identify the parts of a circle. Limit the parts to *center*, *radius*, *diameter*, and *chord*.	G7 M3 Lesson 16: The Most Famous Ratio of All *Supplemental material is necessary to address identifying chords of a circle.*
7.MGSR.1.2 Describe the relationship between the *radius*, *diameter*, and *circumference* of a circle.	G7 M3 Lesson 16: The Most Famous Ratio of All G7 M3 Lesson 17: The Area of a Circle G7 M3 Lesson 18: More Problems on Area and Circumference G7 M3 Lesson 20: Composite Area Problems
7.MGSR.1.3 Solve mathematical and real-world situations involving circumference or area of circles.	G7 M3 Lesson 16: The Most Famous Ratio of All G7 M3 Lesson 17: The Area of a Circle G7 M3 Lesson 18: More Problems on Area and Circumference G7 M3 Lesson 20: Composite Area Problems
7.MGSR.1.4 Determine if three given side lengths can form a triangle using the *Triangle Inequality Theorem*.	G7 M6 Topic B: Constructing Triangles

South Carolina College- and Career-Ready Mathematics Standards	Aligned Components of *Eureka Math*
7.MGSR.1.5 In mathematical and real-world situations, find the volume of right prisms and right pyramids having triangular or quadrilateral bases.	G6 M5 Topic C: Volume of Right Rectangular Prisms 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 G7 M3 Lesson 23: The Volume of a Right Prism G7 M3 Lesson 24: The Volume of a Right Prism G7 M3 Lesson 25: Volume and Surface Area G7 M3 Lesson 26: Volume and Surface Area G7 M6 Topic E: Problems Involving Volume G8 M7 Lesson 19: Cones and Spheres G8 M7 Lesson 20: Truncated Cones
7.MGSR.1.6 In mathematical and real-world situations, find the surface area of right prisms and right pyramids having triangular or quadrilateral bases.	G7 M3 Lesson 21: Surface Area G7 M3 Lesson 22: Surface Area G7 M3 Lesson 25: Volume and Surface Area G7 M3 Lesson 26: Volume and Surface Area G7 M6 Lesson 23: Surface Area G7 M6 Lesson 24: Surface Area

Measurement, Geometry, and Spatial Reasoning
7.MGSR.2 Determine angle and/or side relationships.

South Carolina College- and Career-Ready Mathematics Standards	Aligned Components of *Eureka Math*
7.MGSR.2.1 Determine the measure of the third angle given the measure of the other two angles of a triangle using the *Triangle Sum Theorem.*	G7 M6 Topic B: Constructing Triangles
7.MGSR.2.2 Solve mathematical and real-world situations involving dimensions and areas of geometric figures including scale drawings and scale factors.	G7 M1 Lesson 17: The Unit Rate as the Scale Factor G7 M1 Lesson 18: Computing Actual Lengths from a Scale Drawing G7 M1 Lesson 19: Computing Actual Areas from a Scale Drawing G7 M1 Lesson 20: An Exercise in Creating a Scale Drawing G7 M1 Lesson 21: An Exercise in Changing Scales G7 M1 Lesson 22: An Exercise in Changing Scales G7 M4 Topic C: Scale Drawings
7.MGSR.2.3 Identify the relationships and measures among angles formed by two intersecting lines, given the measure of one angle. Limit to supplementary, complementary, vertical, and adjacent relationships.	G7 M3 Lesson 10: Angle Problems and Solving Equations G7 M3 Lesson 11: Angle Problems and Solving Equations G7 M6 Topic A: Unknown Angles

South Carolina College- and Career-Ready Mathematics Standards	Aligned Components of *Eureka Math*
7.MGSR.2.4 Write and solve equations to solve mathematical and real-world situations involving the relationships among angles formed by two intersecting lines. Limit to supplementary, complementary, vertical, and adjacent relationships.	G7 M3 Lesson 10: Angle Problems and Solving Equations G7 M3 Lesson 11: Angle Problems and Solving Equations G7 M6 Topic A: Unknown Angles

Measurement, Geometry, and Spatial Reasoning

7.MGSR.3 Graph on the coordinate plane.

South Carolina College- and Career-Ready Mathematics Standards	Aligned Components of *Eureka Math*
7.MGSR.3.1 Find distances between ordered pairs on the coordinate plane, limited to the same x-coordinate or the same y-coordinate.	G6 M3 Lesson 18: Distance on the Coordinate Plane G6 M3 Lesson 19: Problem Solving and the Coordinate Plane G6 M5 Lesson 7: Distance on the Coordinate Plane G6 M5 Lesson 10: Distance, Perimeter, and Area in the Real World

Numerical Reasoning

7.NR.1 Translate among multiple representations of rational numbers.

South Carolina College- and Career-Ready Mathematics Standards	Aligned Components of *Eureka Math*
7.NR.1.1 Convert rational numbers into equivalent forms among fractions (including mixed numbers), decimals, and percentages. Exclude the conversion of repeating decimals to fractions.	G7 M1 Lesson 11: Ratios of Fractions and Their Unit Rates G7 M2 Lesson 13: Converting Between Fractions and Decimals Using Equivalent Fractions G7 M2 Lesson 14: Converting Rational Numbers to Decimals Using Long Division G7 M4 Lesson 1: Percent G7 M4 Topic C: Scale Drawings

Numerical Reasoning

7.NR.2 Utilize rational numbers in mathematical and real-world situations.

South Carolina College- and Career-Ready Mathematics Standards	Aligned Components of *Eureka Math*
7.NR.2.1 Compare two rational numbers and write statements using *is equal to* ($=$), *is not equal to* ($\neq$), *is less than* ($<$), *is greater than* ($>$), *is greater than or equal to* ($\geq$), and/or *is less than or equal to* ($\leq$) in mathematical and real-world situations.	G6 M3 Topic B: Order and Absolute Value *Supplemental material is necessary to address writing statements using* is not equal to *($\neq$).*

Patterns, Algebra, and Functional Reasoning

7.PAFR.1 Use tables, graphs, verbal descriptions, or equations to represent a function.

South Carolina College- and Career-Ready Mathematics Standards	Aligned Components of *Eureka Math*
7.PAFR.1.1 Apply proportional reasoning to solve problems in mathematical and real-world situations involving ratios and percentages.	G7 M1 Lesson 14: Multi-Step Ratio Problems G7 M4 Lesson 1: Percent G7 M4 Lesson 3: Comparing Quantities with Percent G7 M4 Lesson 4: Percent Increase and Decrease G7 M4 Lesson 5: Find One Hundred Percent Given Another Percent G7 M4 Lesson 6: Fluency with Percents G7 M4 Topic B: Percent Problems Including More than One Whole G7 M4 Topic D: Population, Mixture, and Counting Problems Involving Percents
7.PAFR.1.2 Create a model with functions that address a proportional relationship in real-world situations.	G8 M6 Lesson 1: Modeling Linear Relationships G8 M6 Lesson 2: Interpreting Rate of Change and Initial Value G8 M6 Lesson 3: Representations of a Line
7.PAFR.1.3 Identify the constant of proportionality within proportional relationships.	G7 M1 Topic B: Unit Rate and Constant of Proportionality G7 M1 Lesson 16: Relating Scale Drawings to Ratios and Rates G7 M1 Lesson 17: The Unit Rate as the Scale Factor G7 M4 Lesson 12: The Scale Factor as a Percent for a Scale Drawing

Patterns, Algebra, and Functional Reasoning
7.PAFR.2 Write, simplify, and evaluate algebraic expressions; write and solve algebraic equations and inequalities.

South Carolina College- and Career-Ready Mathematics Standards	Aligned Components of *Eureka Math*
7.PAFR.2.1 Write and solve multi-step equations and inequalities in one variable involving rational numbers in mathematical and real-world situations.	G7 M2 Lesson 17: Comparing Tape Diagram Solutions to Algebraic Solutions G7 M2 Lesson 21: If-Then Moves with Integer Number Cards G7 M2 Lesson 22: Solving Equations Using Algebra G7 M2 Lesson 23: Solving Equations Using Algebra G7 M3 Topic B: Solve Problems Using Expressions, Equations, and Inequalities G7 M4 Lesson 10: Simple Interest G7 M4 Lesson 11: Tax, Commissions, Fees, and Other Real-World Percent Applications G7 M4 Lesson 17: Mixture Problems
7.PAFR.2.2 Write and evaluate expressions in one variable that model mathematical and real-world situations.	G7 M3 Topic A: Use Properties of Operations to Generate Equivalent Expressions
7.PAFR.2.3 Compute unit rates, including those involving complex fractions with like or different units.	G7 M1 Lesson 11: Ratios of Fractions and Their Unit Rates G7 M1 Lesson 12: Ratios of Fractions and Their Unit Rates G7 M1 Lesson 13: Finding Equivalent Ratios Given the Total Quantity G7 M1 Lesson 15: Equations of Graphs of Proportional Relationships Involving Fractions
7.PAFR.2.4 Use dimensional analysis to convert units between metric and customary systems.	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

Patterns, Algebra, and Functional Reasoning

7.PAFR.3 Apply mathematical patterns, properties, and algorithms to the set of rational numbers to find sums, differences, products, and quotients and to write equivalent expressions.

South Carolina College- and Career-Ready Mathematics Standards	Aligned Components of *Eureka Math*
7.PAFR.3.1 Simplify numerical expressions that include integer exponents using the laws of exponents: the *Product of Powers*, *Quotient of Powers*, *Power of a Power*, *Power of a Product*, *Power of a Quotient*, *Zero Power*, and *Negative Exponent*.	G8 M1 Topic A: Exponential Notation and Properties of Integer Exponents
7.PAFR.3.2 Identify linear expressions that are equivalent.	G7 M2 Lesson 18: Writing, Evaluating, and Finding Equivalent Expressions with Rational Numbers G7 M2 Lesson 19: Writing, Evaluating, and Finding Equivalent Expressions with Rational Numbers G7 M2 Lesson 21: If-Then Moves with Integer Number Cards G7 M3 Lesson 3: Writing Products as Sums and Sums as Products G7 M3 Lesson 4: Writing Products as Sums and Sums as Products
7.PAFR.3.3 Recognize that algebraic expressions may have a variety of equivalent forms and determine an appropriate form for a given real-world situation.	G7 M2 Lesson 18: Writing, Evaluating, and Finding Equivalent Expressions with Rational Numbers G7 M2 Lesson 19: Writing, Evaluating, and Finding Equivalent Expressions with Rational Numbers G7 M2 Lesson 21: If-Then Moves with Integer Number Cards G7 M3 Lesson 3: Writing Products as Sums and Sums as Products G7 M3 Lesson 4: Writing Products as Sums and Sums as Products

South Carolina College- and Career-Ready Mathematics Standards	**Aligned Components of *Eureka Math***
7.PAFR.3.4 Factor linear expressions with integer coefficients using the greatest common factor (GCF).	G6 M2 Lesson 18: Least Common Multiple and Greatest Common Factor G6 M4 Lesson 11: Factoring Expressions G7 M2 Lesson 19: Writing, Evaluating, and Finding Equivalent Expressions with Rational Numbers G7 M3 Lesson 4: Writing Products as Sums and Sums as Products
7.PAFR.3.5 Apply all operations with rational numbers to solve problems in mathematical and real-world situations.	G7 M2 Lesson 18: Writing, Evaluating, and Finding Equivalent Expressions with Rational Numbers G7 M2 Lesson 19: Writing, Evaluating, and Finding Equivalent Expressions with Rational Numbers G7 M2 Lesson 20: Investments—Performing Operations with Rational Numbers G7 M2 Lesson 21: If-Then Moves with Integer Number Cards