EUREKA MATH™

GREAT MINDS

ABOUT *EUREKA MATH*

Created by the nonprofit Great Minds, *Eureka Math* helps teachers deliver unparalleled math instruction that provides students with a deep understanding and fluency in math. Crafted by teachers and math scholars, the curriculum carefully sequences the mathematical progressions to maximize coherence from Prekindergarten through Precalculus—a principle tested and proven to be essential in students' mastery of math.

Teachers and students using *Eureka Math* find the trademark "Aha!" moments in *Eureka Math* to be a source of joy and inspiration, lesson after lesson, year after year.

ALIGNED

Eureka Math is the only curriculum found by EdReports.org to align fully with the Common Core State Standards for Mathematics for all grades, Kindergarten through Grade 8. Great Minds offers detailed analyses which 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

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

The teacher–writers who created the curriculum have also developed essential resources, available only from Great Minds, including the following:

- Printed material in English and Spanish
- Digital resources
- Professional development
- Classroom tools and manipulatives
- Teacher support materials
- Parent resources

GRADE 4 MATHEMATICS

The majority of the Grade 4 South Carolina College- and Career-Ready Standards for Mathematics are fully covered by the Grade 4 *Eureka Math* curriculum. The primary area where the Grade 4 South Carolina College- and Career-Ready Standards for Mathematics and Grade 4 *Eureka Math* do not align is in the key concept of Measurement and Data Analysis. One standard from this key concept will require the use of *Eureka Math* content from another grade level. A detailed analysis of alignment is provided in the table below.

INDICATORS

Green indicates that the South Carolina standard is fully addressed in *Eureka Math*.

Yellow indicates that the South Carolina standard may not be completely addressed in *Eureka Math*.

Red indicates that the South Carolina standard is not addressed in *Eureka Math*.

Blue indicates there is a discrepancy between the grade level at which this standard is addressed in the South Carolina standards and in *Eureka Math*.

Mathematical Process Standards	Aligned Components of *Eureka Math*
1: Make sense of problems and persevere in solving them. a. Relate a problem to prior knowledge. b. Recognize there may be multiple entry points to a problem and more than one path to a solution. c. Analyze what is given, what is not given, what is being asked, and what strategies are needed, and make an initial attempt to solve a problem. d. Evaluate the success of an approach to solve a problem and refine it if necessary.	Lessons in every module engage students in making sense of problems and persevering in solving them as required by this standard. This process standard is analogous to the CCSSM Standards for Mathematical Practice 1, which is specifically addressed in the following modules: G4 M1: Place Value, Rounding, and Algorithms for Addition and Subtraction G4 M2: Unit Conversions and Problem Solving with Metric Measurement
2: Reason both contextually and abstractly. a. Make sense of quantities and their relationships in mathematical and real-world situations. b. Describe a given situation using multiple mathematical representations. c. Translate among multiple mathematical representations and compare the meanings each representation conveys about the situation. d. Connect the meaning of mathematical operations to the context of a given situation.	Lessons in every module engage students in reasoning abstractly and quantitatively as required by this standard. This process standard is analogous to the CCSSM Standards for Mathematical Practice 2, which is specifically addressed in the following modules: G4 M1: Place Value, Rounding, and Algorithms for Addition and Subtraction G4 M3: Multi-Digit Multiplication and Division G4 M4: Angle Measure and Plane Figures G4 M5: Fraction Equivalence, Ordering, and Operations G4 M6: Decimal Fractions G4 M7: Exploring Measurement with Multiplication

Mathematical Process Standards	Aligned Components of *Eureka Math*
3: Use critical thinking skills to justify mathematical reasoning and critique the reasoning of others. a. Construct and justify a solution to a problem. b. Compare and discuss the validity of various reasoning strategies. c. Make conjectures and explore their validity. d. Reflect on and provide thoughtful responses to the reasoning of others.	Lessons in every module engage students in constructing viable arguments and critiquing the reasoning of others as required by this standard. This process standard is analogous to the CCSSM Standards for Mathematical Practice 3, which is specifically addressed in the following modules: G4 M1: Place Value, Rounding, and Algorithms for Addition and Subtraction G4 M4: Angle Measure and Plane Figures G4 M5: Fraction Equivalence, Ordering, and Operations G4 M7: Exploring Measurement with Multiplication
4: Connect mathematical ideas and real-world situations through modeling. a. Identify relevant quantities and develop a model to describe their relationships. b. Interpret mathematical models in the context of the situation. c. Make assumptions and estimates to simplify complicated situations. d. Evaluate the reasonableness of a model and refine if necessary.	Lessons in every module engage students in modeling with mathematics as required by this standard. This process standard is analogous to the CCSSM Standards for Mathematical Practice 4, which is specifically addressed in the following modules: G4 M3: Multi-Digit Multiplication and Division G4 M5: Fraction Equivalence, Ordering, and Operations G4 M6: Decimal Fractions

Mathematical Process Standards	Aligned Components of *Eureka Math*
5: Use a variety of mathematical tools effectively and strategically. a. Select and use appropriate tools when solving a mathematical problem. b. Use technological tools and other external mathematical resources to explore and deepen understanding of concepts.	Lessons in every module engage students in using appropriate tools strategically as required by this standard. This process standard is analogous to the CCSSM Standards for Mathematical Practice 5, which is specifically addressed in the following modules: G4 M1: Place Value, Rounding, and Algorithms for Addition and Subtraction G4 M3: Multi-Digit Multiplication and Division G4 M4: Angle Measure and Plane Figures
6: Communicate mathematically and approach mathematical situations with precision. a. Express numerical answers with the degree of precision appropriate for the context of a situation. b. Represent numbers in an appropriate form according to the context of the situation. c. Use appropriate and precise mathematical language. d. Use appropriate units, scales, and labels.	Lessons in every module engage students in attending to precision as required by this standard. This process standard is analogous to the CCSSM Standards for Mathematical Practice 6, which is specifically addressed in the following modules: G4 M1: Place Value, Rounding, and Algorithms for Addition and Subtraction G4 M4: Angle Measure and Plane Figures G4 M6: Decimal Fractions

Mathematical Process Standards	Aligned Components of *Eureka Math*
7: Identify and utilize structure and patterns. a. Recognize complex mathematical objects as being composed of more than one simple object. b. Recognize mathematical repetition in order to make generalizations. c. Look for structures to interpret meaning and develop solution strategies.	Lessons in every module engage students in looking for and making use of structure as required by this standard. This process standard is analogous to the CCSSM Standards for Mathematical Practice 7 and 8, which are specifically addressed in the following modules: G4 M2: Unit Conversions and Problem Solving with Metric Measurement G4 M3: Multi-Digit Multiplication and Division G4 M5: Fraction Equivalence, Ordering, and Operations G4 M6: Decimal Fractions G4 M7: Exploring Measurement with Multiplication

Key Concepts	Content Standards for Mathematics		Aligned Components of *Eureka Math*
Number Sense and Base Ten	**4.NSBT.1** Understand that, in a multi-digit whole number, a digit represents ten times what the same digit represents in the place to its right.		G4 M1 Topic A: Place Value of Multi-Digit Whole Numbers G4 M3 Topic B: Multiplication by 10, 100, and 1,000 G4 M6 Lesson 8: Use understanding of fraction equivalence to investigate decimal numbers on the place value chart expressed in different units.
	4.NSBT.2 Recognize math periods and number patterns within each period to read and write in standard form large numbers through 999,999,999.		G4 M1 Topic A: Place Value of Multi-Digit Whole Numbers
	4.NSBT.3 Use rounding as one form of estimation and round whole numbers to any given place value.		G4 M1 Topic C: Rounding Multi-Digit Whole Numbers
	4.NSBT.4 Fluently add and subtract multi-digit whole numbers using strategies to include a standard algorithm.		G4 M1 Topic D: Multi-Digit Whole Number Addition G4 M1 Topic E: Multi-Digit Whole Number Subtraction
	4.NSBT.5 Multiply up to a four-digit number by a one-digit number and multiply a two-digit number by a two-digit number using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using rectangular arrays, area models, and/or equations.		G4 M3: Multi-Digit Multiplication and Division

Key Concepts	Content Standards for Mathematics	Aligned Components of *Eureka Math*
	4.NSBT.6 Divide up to a four-digit dividend by a one-digit divisor using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division.	G4 M3 Topic E: Division of Tens and Ones with Successive Remainders G4 M3 Topic G: Division of Thousands, Hundreds, Tens, and Ones
Number Sense and Operations—Fractions	**4.NSF.1** Explain why a fraction (i.e., denominators 2, 3, 4, 5, 6, 8, 10, 12, 25, 100), a/b, is equivalent to a fraction, $n \times a/n \times b$, by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.	G4 M5 Lesson 5: Decompose unit fractions using area models to show equivalence. G4 M5 Lesson 6: Decompose fractions using area models to show equivalence. G4 M5 Topic B: Fraction Equivalence Using Multiplication and Division G4 M5 Lessons 20–21: Use visual models to add two fractions with related units using the denominators 2, 3, 4, 5, 6, 8, 10, and 12. G4 M6 Lesson 5: Model the equivalence of tenths and hundredths using the area model and place value disks.
	4.NSF.2 Compare two given fractions (i.e., denominators 2, 3, 4, 5, 6, 8, 10, 12, 25, 100) by creating common denominators or numerators, or by comparing to a benchmark fraction such as 1/2 and represent the comparison using the symbols >, =, or <.	G4 M5 Topic C: Fraction Comparison G4 M5 Lesson 26: Compare fractions greater than 1 by reasoning using benchmark fractions. G4 M5 Lesson 27: Compare fractions greater than 1 by creating common numerators or denominators. G4 M5 Lesson 28: Solve word problems with line plots.

Key Concepts	Content Standards for Mathematics		Aligned Components of *Eureka Math*
	4.NSF.3 Develop an understanding of addition and subtraction of fractions (i.e., denominators 2, 3, 4, 5, 6, 8, 10, 12, 25, 100) based on unit fractions.		
	a. Compose and decompose a fraction in more than one way, recording each composition and decomposition as an addition or subtraction equation;		G4 M5 Topic A: Decomposition and Fraction Equivalence G4 M5 Lesson 25: Decompose and compose fractions greater than 1 to express them in various forms.
	b. Add and subtract mixed numbers with like denominators;		G4 M5 Lesson 24: Decompose and compose fractions greater than 1 to express them in various forms. G4 M5 Topic F: Addition and Subtraction of Fractions by Decomposition
	c. Solve real-world problems involving addition and subtraction of fractions referring to the same whole and having like denominators.		G4 M5 Lesson 19: Solve word problems involving addition and subtraction of fractions. G4 M5 Lesson 28: Solve word problems with line plots.
	4.NSF.4 Apply and extend an understanding of multiplication by multiplying a whole number and a fraction (i.e., denominators 2, 3, 4, 5, 6, 8, 10, 12, 25, 100).		
	a. Understand a fraction a/b as a multiple of $1/b$;		G4 M5 Topic A: Decomposition and Fraction Equivalence G4 M5 Lesson 35: Represent the multiplication of n times a/b as $(n \times a)/b$ using the associative property and visual models.

Key Concepts	Content Standards for Mathematics		Aligned Components of *Eureka Math*
	b. Understand a multiple of a/b as a multiple of $1/b$, and use this understanding to multiply a fraction by a whole number;		G4 M5 Lesson 23: Add and multiply unit fractions to build fractions greater than 1 using visual models. G4 M5 Topic G: Repeated Addition of Fractions as Multiplication
	c. Solve real-world problems involving multiplication of a fraction by a whole number (i.e., use visual fraction models and equations to represent the problem).		G4 M5 Topic G: Repeated Addition of Fractions as Multiplication
	4.NSF.5 Express a fraction with a denominator of 10 as an equivalent fraction with a denominator of 100 and use this technique to add two fractions with respective denominators of 10 and 100.		G4 M6 Topic B: Tenths and Hundredths G4 M6 Topic D: Addition with Tenths and Hundredths G4 M6 Topic E: Money Amounts as Decimal Numbers
	4.NSF.6 Write a fraction with a denominator of 10 or 100 using decimal notation, and read and write a decimal number as a fraction.		G4 M6: Decimal Fractions
	4.NSF.7 Compare and order decimal numbers to hundredths, and justify using concrete and visual models.		G4 M6 Topic C: Decimal Comparison

Key Concepts	Content Standards for Mathematics	Aligned Components of *Eureka Math*
Algebraic Thinking and Operations	**4.ATO.1** Interpret a multiplication equation as a comparison (e.g. interpret 35 = 5 x 7 as a statement that 35 is 5 times as many as 7 and 7 times as many as 5.) Represent verbal statements of multiplicative comparisons as multiplication equations.	G4 M1 Topic A: Place Value of Multi-Digit Whole Numbers G4 M3 Lesson 2: Solve multiplicative comparison word problems by applying the area and perimeter formulas. G4 M3 Topic D: Multiplication Word Problems G4 M7 Lesson 4: Solve multiplicative comparison word problems using measurement conversion tables.
	4.ATO.2 Solve real-world problems using multiplication (product unknown) and division (group size unknown, number of groups unknown).	G4 M3 Topic A: Multiplicative Comparison Word Problems G4 M3 Lesson 11: Connect the area model and the partial products method to the standard algorithm. G4 M3 Topic D: Multiplication Word Problems G4 M3 Lesson 26: Divide multiples of 10, 100, and 1,000 by single-digit numbers. G4 M7 Lesson 4: Solve multiplicative comparison word problems using measurement conversion tables. G4 M7 Lesson 5: Share and critique peer strategies. G4 M7 Lesson 8: Solve problems involving mixed units of weight. G4 M7 Lesson 10: Solve multi-step measurement word problems.

Key Concepts	Content Standards for Mathematics		Aligned Components of *Eureka Math*
	4.ATO.3 Solve multi-step, real-world problems using the four operations. Represent the problem using an equation with a variable as the unknown quantity.		G4 M1: Place Value, Rounding, and Algorithms for Addition and Subtraction G4 M3 Topic D: Multiplication Word Problems G4 M3 Lesson 29: Represent numerically four-digit dividend division with divisors of 2, 3, 4, and 5, decomposing a remainder up to three times. G4 M3 Lesson 31: Interpret division word problems as either *number of groups unknown* or *group size unknown*. G4 M7 Topic B: Problem Solving with Measurement G4 M7 Lesson 14: Solve multi-step word problems involving converting mixed number measurements to a single unit.
	4.ATO.4 Recognize that a whole number is a multiple of each of its factors. Find all factors for a whole number in the range 1–100 and determine whether the whole number is prime or composite.		G4 M3 Topic F: Reasoning with Divisibility
	4.ATO.5 Generate a number or shape pattern that follows a given rule and determine a term that appears later in the sequence.		G4 M3 Topic F: Reasoning with Divisibility G4 M5 Topic H: Exploring a Fraction Pattern

Key Concepts	Content Standards for Mathematics		Aligned Components of *Eureka Math*
Geometry	**4.G.1** Draw points, lines, line segments, rays, angles (i.e., right, acute, obtuse), and parallel and perpendicular lines. Identify these in two-dimensional figures.		G4 M4: Angle Measure and Plane Figures
	4.G.2 Classify quadrilaterals based on the presence or absence of parallel or perpendicular lines.		G4 M4 Topic D: Two-Dimensional Figures and Symmetry
	4.G.3 Recognize right triangles as a category, and identify right triangles.		G4 M4 Lesson 13: Analyze and classify triangles based on side length, angle measure, or both. G4 M4 Lesson 14: Define and construct triangles from given criteria. Explore symmetry in triangles.
	4.G.4 Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry.		G4 M4 Topic D: Two-Dimensional Figures and Symmetry
Measurement and Data Analysis	**4.MDA.1** Convert measurements within a single system of measurement, customary (i.e., in., ft., yd., oz., lb., sec., min., hr.) or metric (i.e., cm, m, km, g, kg, mL, L) from a larger to a smaller unit.		G4 M2: Unit Conversions and Problem Solving with Metric Measurement G4 M5 Lesson 40: Solve word problems involving the multiplication of a whole number and a fraction including those involving line plots. G4 M7: Exploring Measurement with Multiplication

Key Concepts	Content Standards for Mathematics		Aligned Components of *Eureka Math*
	4.MDA.2 Solve real-world problems involving distance/ length, intervals of time within 12 hours, liquid volume, mass, and money using the four operations.		G4 M2: Unit Conversions and Problem Solving with Metric Measurement G4 M6 Lesson 14: Solve word problems involving the addition of measurements in decimal form. G4 M6 Topic E: Money Amounts as Decimal Numbers G4 M7 Topic B: Problem Solving with Measurement G4 M7 Lesson 14: Solve multi-step word problems involving converting mixed number measurements to a single unit.
	4.MDA.3 Apply the area and perimeter formulas for rectangles.		G4 M3 Topic A: Multiplicative Comparison Word Problems
	4.MDA.4 Create a line plot to display a data set (i.e., generated by measuring length to the nearest quarter-inch and eighth-inch) and interpret the line plot.		G4 M5 Lesson 28: Solve word problems with line plots. G4 M5 Lesson 40: Solve word problems involving the multiplication of a whole number and a fraction including those involving line plots.
	4.MDA.5 Understand the relationship of an angle measurement to a circle.		G4 M4 Topic B: Angle Measurement
	4.MDA.6 Measure and draw angles in whole number degrees using a protractor.		G4 M4 Topic B: Angle Measurement

Key Concepts	Content Standards for Mathematics		Aligned Components of *Eureka Math*
	4.MDA.7 Solve addition and subtraction problems to find unknown angles in real-world and mathematical problems.		G4 M4 Topic C: Problem Solving with the Addition of Angle Measures
	4.MDA.8 Determine the value of a collection of coins and bills greater than $1.00.		G2 M7 Topic B: Problem Solving with Coins and Bills