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 5 MATHEMATICS

Many of the Grade 5 Oklahoma Academic Standards for Mathematics will require the use of *Eureka Math* content from another grade or supplemental materials. A detailed analysis of alignment is provided in the table below. With strategic placement of supplemental materials, *Eureka Math* can ensure students are successful in achieving the proficiencies of the Oklahoma Academic Standards for Mathematics while still benefiting from the coherence and rigor of *Eureka Math*.

INDICATORS

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

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

Red indicates that the Oklahoma 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 Oklahoma standards and in *Eureka Math*.

Mathematical Actions and Processes	Aligned Components of *Eureka Math*
Develop a Deep and Flexible Conceptual Understanding Demonstrate a deep and flexible conceptual understanding of mathematical concepts, operations, and relations while making mathematical and real-world connections. Students will develop an understanding of how and when to apply and use the mathematics they know to solve problems.	Lessons in every module engage students in making sense of problems and persevering in solving them as required by this standard. This Mathematical Action and Process is analogous to the CCSSM Standards for Mathematical Practice 1 and 2, which are specifically addressed in the following modules: G5 M2: Multi-Digit Whole Number and Decimal Fraction Operations G5 M3: Addition and Subtraction of Fractions G5 M4: Multiplication and Division of Fractions and Decimal Fractions G5 M5: Addition and Multiplication with Volume and Area G5 M6: Problem Solving with the Coordinate Plane

Mathematical Actions and Processes	Aligned Components of *Eureka Math*
Develop Accurate and Appropriate Procedural Fluency Learn efficient procedures and algorithms for computations and repeated processes based on a strong sense of numbers. Develop fluency in addition, subtraction, multiplication, and division of numbers and expressions. Students will generate a sophisticated understanding of the development and application of algorithms and procedures.	Lessons in every module engage students in reasoning abstractly and quantitatively as required by this standard. This Mathematical Action and Process is analogous to the CCSSM Standards for Mathematical Practice 7 and 8, which are specifically addressed in the following modules: G5 M1: Place Value and Decimal Fractions G5 M2: Multi-Digit Whole Number and Decimal Fraction Operations G5 M3: Addition and Subtraction of Fractions G5 M4: Multiplication and Division of Fractions and Decimal Fractions G5 M5: Addition and Multiplication with Volume and Area G5 M6: Problem Solving with the Coordinate Plane

Mathematical Actions and Processes	Aligned Components of *Eureka Math*
Develop Strategies for Problem Solving Analyze the parts of complex mathematical tasks and identify entry points to begin the search for a solution. Students will select from a variety of problem solving strategies and use corresponding multiple representations (verbal, physical, symbolic, pictorial, graphical, tabular) when appropriate. They will pursue solutions to various tasks from real-world situations and applications that are often interdisciplinary in nature. They will find methods to verify their answers in context and will always question the reasonableness of solutions.	Lessons in every module engage students in constructing viable arguments and critiquing the reasoning of others as required by this standard. This Mathematical Action and Process is analogous to the CCSSM Standards for Mathematical Practice 1, 2, and 8, which are specifically addressed in the following modules: G5 M1: Place Value and Decimal Fractions G5 M2: Multi-Digit Whole Number and Decimal Fraction Operations G5 M3: Addition and Subtraction of Fractions G5 M4: Multiplication and Division of Fractions and Decimal Fractions G5 M5: Addition and Multiplication with Volume and Area G5 M6: Problem Solving with the Coordinate Plane

Mathematical Actions and Processes	Aligned Components of *Eureka Math*
Develop Mathematical Reasoning Explore and communicate a variety of reasoning strategies to think through problems. Students will apply their logic to critique the thinking and strategies of others to develop and evaluate mathematical arguments, including making arguments and counterarguments and making connections to other contexts.	Lessons in every module engage students in modeling with mathematics as required by this standard. This Mathematical Action and Process is analogous to the CCSSM Standards for Mathematical Practice 3, which is specifically addressed in the following modules: G5 M3: Addition and Subtraction of Fractions G5 M4: Multiplication and Division of Fractions and Decimal Fractions G5 M5: Addition and Multiplication with Volume and Area G5 M6: Problem Solving with the Coordinate Plane

Mathematical Actions and Processes	Aligned Components of *Eureka Math*
Develop a Productive Mathematical Disposition Hold the belief that mathematics is sensible, useful and worthwhile. Students will develop the habit of looking for and making use of patterns and mathematical structures. They will persevere and become resilient, effective problem solvers.	Lessons in every module engage students in using appropriate tools strategically as required by this standard. This Mathematical Action and Process is analogous to the CCSSM Standards for Mathematical Practice 1, 7, and 8, which are specifically addressed in the following modules: G5 M1: Place Value and Decimal Fractions G5 M2: Multi-Digit Whole Number and Decimal Fraction Operations G5 M3: Addition and Subtraction of Fractions G5 M4: Multiplication and Division of Fractions and Decimal Fractions G5 M5: Addition and Multiplication with Volume and Area G5 M6: Problem Solving with the Coordinate Plane

Mathematical Actions and Processes	Aligned Components of *Eureka Math*
Develop the Ability to Make Conjectures, Model, and Generalize Make predictions and conjectures and draw conclusions throughout the problem solving process based on patterns and the repeated structures in mathematics. Students will create, identify, and extend patterns as a strategy for solving and making sense of problems.	Lessons in every module engage students in attending to precision as required by this standard. This Mathematical Action and Process is analogous to the CCSSM Standards for Mathematical Practice 4, 7, and 8, which are specifically addressed in the following modules: G5 M1: Place Value and Decimal Fractions G5 M2: Multi-Digit Whole Number and Decimal Fraction Operations G5 M3: Addition and Subtraction of Fractions G5 M4: Multiplication and Division of Fractions and Decimal Fractions G5 M5: Addition and Multiplication with Volume and Area G5 M6: Problem Solving with the Coordinate Plane

Mathematical Actions and Processes	Aligned Components of *Eureka Math*
Develop the Ability to Communicate Mathematically Students will discuss, write, read, interpret and translate ideas and concepts mathematically. As they progress, students' ability to communicate mathematically will include their increased use of mathematical language and terms and analysis of mathematical definitions.	Lessons in every module engage students in looking for and making use of structure as required by this standard. This Mathematical Action and Process is analogous to the CCSSM Standards for Mathematical Practice 3 and 6, which are specifically addressed in the following modules: G5 M1: Place Value and Decimal Fractions G5 M3: Addition and Subtraction of Fractions G5 M4: Multiplication and Division of Fractions and Decimal Fractions G5 M5: Addition and Multiplication with Volume and Area G5 M6: Problem Solving with the Coordinate Plane

Strand	Objectives for Mathematical Content	Aligned Components of *Eureka Math*
Number & Operations	**Standard: Divide multi-digit numbers and solve real-world and mathematical problems using arithmetic.**	
	5.N.1.1 Estimate solutions to division problems in order to assess the reasonableness of results.	G5 M2 Topic E: Mental Strategies for Multi-Digit Whole Number Division G5 M2 Topic F: Partial Quotients and Multi-Digit Whole Number Division G5 M2 Topic H: Measurement Word Problems with Multi-Digit Division
	5.N.1.2 Divide multi-digit numbers, by one- and two-digit divisors, using efficient and generalizable procedures, based on knowledge of place value, including standard algorithms.	G5 M2: Multi-Digit Whole Number and Decimal Fraction Operations
	5.N.1.3 Recognize that quotients can be represented in a variety of ways, including a whole number with a remainder, a fraction or mixed number, or a decimal and consider the context in which a problem is situated to select and interpret the most useful form of the quotient for the solution.	G5 M4 Topic B: Fractions as Division

Strand	Objectives for Mathematical Content	Aligned Components of *Eureka Math*
	5.N.1.4 Solve real-world and mathematical problems requiring addition, subtraction, multiplication, and division of multi-digit whole numbers. Use various strategies, including the inverse relationships between operations, the use of technology, and the context of the problem to assess the reasonableness of results.	G4 M1: Place Value, Rounding, and Algorithms for Addition and Subtraction G4 M3: Multi-Digit Multiplication and Division G5 M2: Multi-Digit Whole Number and Decimal Fraction Operations Note: Supplemental material is necessary to incorporate the use of technology.
	Standard: Read, write, represent, and compare fractions and decimals; recognize and write equivalent fractions; convert between fractions and decimals; use fractions and decimals in real-world and mathematical situations.	
	5.N.2.1 Represent decimal fractions (e.g., 1/10, 1/100) using a variety of models (e.g., 10 by 10 grids, rational number wheel, base-ten blocks, meter stick) and make connections between fractions and decimals.	G4 M6: Decimal Fractions Note: Supplemental material is necessary to incorporate a rational number wheel and base-ten blocks.
	5.N.2.2 Represent, read and write decimals using place value to describe decimal numbers including fractional numbers as small as thousandths and whole numbers as large as millions.	G5 M1: Place Value and Decimal Fractions
	5.N.2.3 Compare and order fractions and decimals, including mixed numbers and fractions less than one, and locate on a number line.	G5 M1 Lesson 6: Compare decimal fractions to the thousandths using like units, and express comparisons with >, <, =.

Strand	Objectives for Mathematical Content	Aligned Components of *Eureka Math*
	5.N.2.4 Recognize and generate equivalent decimals, fractions, mixed numbers, and fractions less than one in various contexts.	G4 M5: Fraction Equivalence, Ordering, and Operations G4 M6: Decimal Fractions G5 M3 Topic A: Equivalent Fractions G5 M4 Lesson 21: Explain the size of the product, and relate fraction and decimal equivalence to multiplying a fraction by 1.
	Standard: Add and subtract fractions with like and unlike denominators, mixed numbers and decimals to solve real-world and mathematical problems.	
	5.N.3.1 Estimate sums and differences of fractions with like and unlike denominators, mixed numbers, and decimals to assess the reasonableness of the results.	G5 M1 Topic D: Adding and Subtracting Decimals G5 M3: Addition and Subtraction of Fractions G5 M4 Topic D: Fraction Expressions and Word Problems
	5.N.3.2 Illustrate addition and subtraction of fractions with like and unlike denominators, mixed numbers, and decimals using a variety of representations (e.g., fraction strips, area models, number lines, fraction rods).	G5 M1 Topic D: Adding and Subtracting Decimals G5 M3: Addition and Subtraction of Fractions

Strand	Objectives for Mathematical Content		Aligned Components of *Eureka Math*
	5.N.3.3 Add and subtract fractions with like and unlike denominators, mixed numbers, and decimals, using efficient and generalizable procedures, including but not limited to standard algorithms in order to solve real-world and mathematical problems including those involving money, measurement, geometry, and data.		G5 M1 Topic D: Adding and Subtracting Decimals G5 M3: Addition and Subtraction of Fractions G5 M4 Topic D: Fraction Expressions and Word Problems
	5.N.3.4 Find 0.1 more than a number and 0.1 less than a number. Find 0.01 more than a number and 0.01 less than a number. Find 0.001 more than a number and 0.001 less than a number.		G5 M1 Topic D: Adding and Subtracting Decimals Note: Supplemental material may be necessary to completely address this standard.
Algebraic Reasoning & Algebra	**Standard: Describe and graph patterns of change created through numerical patterns.**		
	5.A.1.1 Use tables and rules of up to two operations to describe patterns of change and make predictions and generalizations about real-world and mathematical problems.		G5 M6 Topic B: Patterns in the Coordinate Plane and Graphing Number Patterns from Rules G5 M6 Lesson 18: Draw symmetric figures on the coordinate plane.
	5.A.1.2 Use a rule or table to represent ordered pairs of whole numbers and graph these ordered pairs on a coordinate plane, identifying the origin and axes in relation to the coordinates.		G5 M6: Problem Solving with the Coordinate Plane

Strand	Objectives for Mathematical Content	Aligned Components of *Eureka Math*
	Standard: Understand and interpret expressions, equations, and inequalities involving variables and whole numbers, and use them to represent and evaluate real-world and mathematical problems.	
	5.A.2.1 Generate equivalent numerical expressions and solve problems involving whole numbers by applying the commutative, associative, and distributive properties and order of operations (no exponents).	G5 M2 Topic A: Mental Strategies for Multi-Digit Whole Number Multiplication G5 M2 Lesson 3: Write and interpret numerical expressions, and compare expressions using a visual model. G5 M2 Lesson 4: Convert numerical expressions into unit form as a mental strategy for multi-digit multiplication.
	5.A.2.2 Determine whether an equation or 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
	5.A.2.3 Evaluate expressions involving variables when values for the variables are given.	G6 M4 Topic B: Special Notations of Operations G6 M4 Topic C: Replacing Letters and Numbers
Geometry & Measurement	**Standard: Describe, classify, and draw representations of two- and three-dimensional figures.**	
	5.GM.1.1 Describe, classify and construct triangles, including equilateral, right, scalene, and isosceles triangles. Recognize triangles in various contexts.	G4 M4 Topic D: Two-Dimensional Figures and Symmetry G5 M5 Topic D: Drawing, Analysis, and Classification of Two-Dimensional Shapes G5 M6 Lesson 13: Construct parallel line segments on a rectangular grid.

Strand	Objectives for Mathematical Content	Aligned Components of *Eureka Math*
	5.GM.1.2 Describe and classify three-dimensional figures including cubes, rectangular prisms, and pyramids by the number of edges, faces, or vertices, as well as the shapes of faces.	G5 M5: Addition and Multiplication with Volume and Area Note: Supplemental material may be necessary to completely address this standard.
	5.GM.1.3 Recognize and draw a net for a three-dimensional figure (e.g., cubes, rectangular prisms, pyramids).	G6 M5 Lesson 15: Representing Three-Dimensional Figures Using Nets G6 M5 Lesson 16: Constructing Nets
	Standard: Understand how the volume of rectangular prisms and surface area of shapes with polygonal faces are determined by the dimensions of the object and that shapes with varying dimensions can have equivalent values of surface area or volume.	
	5.GM.2.1 Recognize that the volume of rectangular prisms can be determined by the number of cubes (n) and by the product of the dimensions of the prism ($a \times b \times c = n$). Know that rectangular prisms of different dimensions (p, q, and r) can have the same volume if $a \times b \times c = p \times q \times r = n$.	G5 M5: Addition and Multiplication with Volume and Area

Strand	Objectives for Mathematical Content	Aligned Components of *Eureka Math*
	5.GM.2.2 Recognize that the surface area of a three-dimensional figure with rectangular faces with whole numbered edges can be found by finding the area of each component of the net of that figure. Know that three-dimensional shapes of different dimensions can have the same surface area.	G6 M5 Topic D: Nets and Surface Area
	5.GM.2.3 Find the perimeter of polygons and create arguments for reasonable values for the perimeter of shapes that include curves.	G4 M3 Topic A: Multiplicative Comparison Word Problems Note: Supplemental material is necessary to include shapes with curves.
	Standard: Understand angle and length as measurable attributes of real-world and mathematical objects. Use various tools to measure angles and lengths.	
	5.GM.3.1 Measure and compare angles according to size.	G4 M4: Angle Measures and Plane Figures
	5.GM.3.2 Choose an appropriate instrument and measure the length of an object to the nearest whole centimeter or 1/16-inch.	G5 M4 Topic A: Line Plots of Fraction Measurements Note: Supplemental material is necessary to include measuring objects to the nearest 1/16-inch.
	5.GM.3.3 Recognize and use the relationship between inches, feet, and yards to measure and compare objects.	G2 M7 Topic D: Measuring and Estimating Length Using Customary and Metric Units G5 M4 Topic A: Line Plots of Fraction Measurements

Strand	Objectives for Mathematical Content	Aligned Components of *Eureka Math*
	5.GM.3.4 Recognize and use the relationship between millimeters, centimeters, and meters to measure and compare objects.	G5 M1 Lesson 4: Use exponents to denote powers of 10 with application to metric conversions. G5 M2 Topic D: Measurement Word Problems with Whole Number and Decimal Multiplication G5 M4 Topic C: Multiplication of a Whole Number by a Fraction G5 M4 Lesson 19: Convert measures involving whole numbers, and solve multi-step word problems. G5 M4 Lesson 20: Convert mixed unit measurements, and solve multi-step word problems.
Data & Probability	**Standard: Display and analyze data to find the range and measures of central tendency (mean, median, and mode).**	
	5.D.1.1 Find the measures of central tendency (mean, median, or mode) and range of a set of data. Understand that the mean is a "leveling out" or central balance point of the data.	G6 M6: Statistics Note: Supplemental material is necessary to address mode and range.

Strand	Objectives for Mathematical Content	Aligned Components of *Eureka Math*
	5.D.1.2 Create and analyze line and double-bar graphs with whole numbers, fractions, and decimals increments.	G3 M5 Topic D: Fractions on the Number Line G3 M5 Lesson 30: Partition various wholes precisely into equal parts using a number line method. G3 M6: Collecting and Displaying Data G3 M7 Lesson 19: Use a line plot to record the number of rectangles constructed from a given number of unit squares. G3 M7 Lesson 22: Use a line plot to record the number of rectangles constructed in Lessons 20 and 21. Note: Supplemental material may be necessary to completely address this standard.