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 Texas Essential Knowledge and Skills for Mathematics are fully covered by the Grade 4 *Eureka Math* curriculum. The areas where the Grade 4 Texas Essential Knowledge and Skills for Mathematics and Grade 4 *Eureka Math* do not align will require the use of *Eureka Math* content from other grade levels 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 Texas Essential Knowledge and Skills for Mathematics while still benefiting from the coherence and rigor of *Eureka Math*.

INDICATORS

- Green indicates that the Texas standard is fully addressed in *Eureka Math*.
- Yellow indicates that the Texas standard may not be completely addressed in *Eureka Math*.
- Red indicates that the Texas 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 Texas standards and in *Eureka Math*.

Mathematical Process Standards		Aligned Components of *Eureka Math*
(1) The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:		
a. apply mathematics to problems arising in everyday life, society, and the workplace;		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
b. use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution;		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

Mathematical Process Standards	Aligned Components of *Eureka Math*
c. select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems;	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
d. communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate;	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
e. create and use representations to organize, record, and communicate mathematical ideas;	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*
f. analyze mathematical relationships to connect and communicate mathematical ideas; and	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 Fraction G4 M7: Exploring Measurement with Multiplication
g. display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication.	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

Skill	Expectations		Aligned Components of *Eureka Math*
Number and Operations	**111.6.2** The student applies mathematical process standards to represent, compare, and order whole numbers and decimals and understand relationships related to place value. The student is expected to:		
	a. interpret the value of each place-value position as 10 times the position to the right and as one-tenth of the value of the place to its left;		G4 M1 Topic A: Place Value of Multi-Digit Whole Numbers G4 M6 Lesson 7: Model mixed numbers with units of hundreds, tens, ones, tenths, and hundredths in expanded form and on the place value chart. G4 M6 Lesson 9: Use the place value chart and metric measurement to compare decimals and answer comparison questions. G5 M1 Topic A: Multiplicative Patterns on the Place Value Chart
	b. represent the value of the digit in whole numbers through 1,000,000,000 and decimals to the hundredths using expanded notation and numerals;		G4 M1: Place Value, Rounding, and Algorithms for Addition and Subtraction G4 M6 Topic A: Exploration of Tenths G4 M6 Topic B: Tenths and Hundredths Note: Supplemental material is necessary to address numbers between 1,000,000 and 1,000,000,000.

Skill	Expectations		Aligned Components of *Eureka Math*
	c. compare and order whole numbers to 1,000,000,000 and represent comparisons using the symbols >, <, or =;		G4 M1 Lesson 5: Compare numbers based on meanings of the digits using >, <, or = to record the comparison. Note: Supplemental material is necessary to address numbers between 1,000,000 and 1,000,000,000.
	d. round whole numbers to a given place value through the hundred thousands place;		G4 M1 Topic C: Rounding Multi-Digit Whole Numbers
	e. represent decimals, including tenths and hundredths, using concrete and visual models and money;		G4 M6: Decimal Fractions
	f. compare and order decimals using concrete and visual models to the hundredths;		G4 M6 Topic C: Decimal Comparison
	g. relate decimals to fractions that name tenths and hundredths; and		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
	h. determine the corresponding decimal to the tenths or hundredths place of a specified point on a number line.		G4 M6 Lesson 7: Model mixed numbers with units of hundreds, tens, ones, tenths, and hundredths in expanded form and on the place value chart. G4 M6 Lesson 9: Use the place value chart and metric measurement to compare decimals and answer comparison questions.

Skill	Expectations		Aligned Components of *Eureka Math*
	111.6.3 The student applies mathematical process standards to represent and generate fractions to solve problems. The student is expected to:		
	a. represent a fraction a/b as a sum of fractions $1/b$, where a and b are whole numbers and $b > 0$, including when $a > b$;		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.
	b. decompose a fraction in more than one way into a sum of fractions with the same denominator using concrete and pictorial models and recording results with symbolic representations;		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.

Skill	Expectations	Aligned Components of *Eureka Math*
	c. determine if two given fractions are equivalent using a variety of methods;	G4 M5 Topic A: Decomposition and Fraction Equivalence G4 M5 Topic B: Fraction Equivalence Using Multiplication and Division G4 M5 Topic F: Addition and Subtraction of Fractions by Decomposition
	d. compare two fractions with different numerators and different denominators 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.
	e. represent and solve addition and subtraction of fractions with equal denominators using objects and pictorial models that build to the number line and properties of operations;	G4 M5 Topic D: Fraction Addition and Subtraction G4 M5 Lesson 22: Add a fraction less than 1 to, or subtract a fraction less than 1 from, a whole number using decomposition and visual models. 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

Skill	Expectations		Aligned Components of *Eureka Math*
	f. evaluate the reasonableness of sums and differences of fractions using benchmark fractions 0, 1/4, 1/2, 3/4, and 1, referring to the same whole; and		G4 M5 Topic F: Addition and Subtraction of Fractions by Decomposition G5 M3 Lesson 13: Use fraction benchmark numbers to assess reasonableness of addition and subtraction equations.
	g. represent fractions and decimals to the tenths or hundredths as distances from zero on a number line.		G4 M6: Decimal Fractions
	111.6.4 The student applies mathematical process standards to develop and use strategies and methods for whole number computations and decimal sums and differences in order to solve problems with efficiency and accuracy. The student is expected to:		
	a. add and subtract whole numbers and decimals to the hundredths place using the standard algorithm;		G4 M1 Topic D: Multi-Digit Whole Number Addition G4 M1 Topic E: Multi-Digit Whole Number Subtraction G4 M6 Topic D: Addition with Tenths and Hundredths G5 M1 Topic D: Adding and Subtracting Decimals
	b. determine products of a number and 10 or 100 using properties of operations and place value understandings;		G4 M3 Topic H: Multiplication of Two-Digit by Two-Digit Numbers

Skill	Expectations	Aligned Components of *Eureka Math*
	c. represent the product of 2 two-digit numbers using arrays, area models, or equations, including perfect squares through 15 by 15;	G4 M3: Multi-Digit Multiplication and Division G8 M7 Topic A: Square and Cube Roots
	d. use strategies and algorithms, including the standard algorithm, to multiply up to a four-digit number by a one-digit number and to multiply a two-digit number by a two-digit number. Strategies may include mental math, partial products, and the commutative, associative, and distributive properties;	G4 M3: Multi-Digit Multiplication and Division
	e. represent the quotient of up to a four-digit whole number divided by a one-digit whole number using arrays, area models, or equations;	G4 M3 Topic E: Division of Tens and Ones with Successive Remainders G4 M3 Topic G: Division of Thousands, Hundreds, Tens, and Ones
	f. use strategies and algorithms, including the standard algorithm, to divide up to a four-digit dividend by a one-digit divisor;	G4 M3 Topic E: Division of Tens and Ones with Successive Remainders G4 M3 Topic G: Division of Thousands, Hundreds, Tens, and Ones
	g. round to the nearest 10, 100, or 1,000 or use compatible numbers to estimate solutions involving whole numbers; and	G4 M1 Topic C: Rounding Multi-Digit Whole Numbers

Skill	Expectations		Aligned Components of *Eureka Math*
	h. solve with fluency one- and two-step problems involving multiplication and division, including interpreting remainders.		G4 M3: Multi-Digit Multiplication and Division
Algebraic Reasoning	**111.6.5** The student applies mathematical process standards to develop concepts of expressions and equations. The student is expected to:		
	a. represent multi-step problems involving the four operations with whole numbers using strip diagrams and equations with a letter standing for 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.

Skill	Expectations		Aligned Components of *Eureka Math*
	b. represent problems using an input-output table and numerical expressions to generate a number pattern that follows a given rule representing the relationship of the values in the resulting sequence and their position in the sequence;		G4 M1 Topic E: Multi-Digit Whole Number Subtraction G4 M1 Topic F: Addition and Subtraction Word Problems G4 M5 Topic H: Exploring a Fraction Pattern Note: Supplemental material is necessary to address input-output tables.
	c. use models to determine the formulas for the perimeter of a rectangle ($l + w + l + w$ or $2l + 2w$), including the special form for perimeter of a square ($4s$) and the area of a rectangle ($l \times w$); and		G4 M3 Topic A: Multiplicative Comparison Word Problems G4 M4 Lesson 15: Classify quadrilaterals based on parallel and perpendicular lines and the presence or absence of angles of a specified size. G6 M4 Lesson 7: Replacing Letters with Numbers.
	d. solve problems related to perimeter and area of rectangles where dimensions are whole numbers.		G4 M3 Topic A: Multiplicative Comparison Word Problems
Geometry and Measurement	**111.6.6** The student applies mathematical process standards to analyze geometric attributes in order to develop generalizations about their properties. The student is expected to:		
	a. identify points, lines, line segments, rays, angles, and perpendicular and parallel lines;		G4 M4: Angle Measure and Plane Figures

Skill	Expectations		Aligned Components of *Eureka Math*
	b. identify and draw one or more lines of symmetry, if they exist, for a two-dimensional figure;		G4 M4 Topic D: Two-Dimensional Figures and Symmetry
	c. apply knowledge of right angles to identify acute, right, and obtuse triangles; and		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.
	d. classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines or the presence or absence of angles of a specified size.		G4 M4 Topic D: Two-Dimensional Figures and Symmetry
	111.6.7 The student applies mathematical process standards to solve problems involving angles less than or equal to 180 degrees. The student is expected to:		
	a. illustrate the measure of an angle as the part of a circle whose center is at the vertex of the angle that is "cut out" by the rays of the angle. Angle measures are limited to whole numbers;		G4 M4 Topic B: Angle Measurement

Skill	Expectations		Aligned Components of *Eureka Math*
	b. illustrate degrees as the units used to measure an angle, where 1/360 of any circle is one degree and an angle that "cuts" $n/360$ out of any circle whose center is at the angle's vertex has a measure of n degrees. Angle measures are limited to whole numbers;		G4 M4 Topic B: Angle Measurement
	c. determine the approximate measures of angles in degrees to the nearest whole number using a protractor;		G4 M4 Topic B: Angle Measurement
	d. draw an angle with a given measure; and		G4 M4 Topic B: Angle Measurement
	e. determine the measure of an unknown angle formed by two non-overlapping adjacent angles given one or both angle measures.		G4 M4 Topic C: Problem Solving with the Addition of Angle Measures

Skill	Expectations		Aligned Components of *Eureka Math*
	111.6.8 The student applies mathematical process standards to select appropriate customary and metric units, strategies, and tools to solve problems involving measurement. The student is expected to:		
	a. identify relative sizes of measurement units within the customary and metric systems;		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
	b. convert measurements within the same measurement system, customary or metric, from a smaller unit into a larger unit or a larger unit into a smaller unit when given other equivalent measures represented in a table; and		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

Skill	Expectations		Aligned Components of *Eureka Math*
	c. solve problems that deal with measurements of length, intervals of time, liquid volumes, mass, and money using addition, subtraction, multiplication, or division as appropriate.		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.
Data Analysis	**111.6.9** The student applies mathematical process standards to solve problems by collecting, organizing, displaying, and interpreting data. The student is expected to:		
	a. represent data on a frequency table, dot plot, or stem-and-leaf plot marked with whole numbers and fractions; and		G3 M6: Collecting and Displaying Data G3 M7 Topic D: Recording Perimeter and Area Data on Line Plots G6 M6: Statistics Note: Supplemental material is necessary to address stem-and-leaf plots.

Skill	Expectations		Aligned Components of *Eureka Math*
	b. solve one- and two-step problems using data in whole number, decimal, and fraction form in a frequency table, dot plot, or stem-and-leaf 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. G6 M6 Topic A: Understanding Distributions G6 M6 Lesson 12: Describing the Center of a Distribution Using the Median Note: Supplemental material is necessary to address stem-and-leaf plots.
Personal Financial Literacy	**111.6.10** The student applies mathematical process standards to manage one's financial resources effectively for lifetime financial security. The student is expected to:		
	a. distinguish between fixed and variable expenses;		*Eureka Math* does not address personal financial skills.
	b. calculate profit in a given situation;		*Eureka Math* does not address personal financial skills.
	c. compare the advantages and disadvantages of various savings options;		*Eureka Math* does not address personal financial skills.
	d. describe how to allocate a weekly allowance among spending; saving, including for college; and sharing; and		*Eureka Math* does not address personal financial skills.

Skill	Expectations	Aligned Components of *Eureka Math*
	e. describe the basic purpose of financial institutions, including keeping money safe, borrowing money, and lending.	*Eureka Math* does not address personal financial skills.