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 Nebraska Mathematics Standards are fully covered by the Grade 4 *Eureka Math* curriculum. The areas where the Grade 4 Nebraska Mathematics Standards and Grade 4 *Eureka Math* do not align will require the use of *Eureka Math* content from another grade level 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 Nebraska Mathematics Standards while still benefiting from the coherence and rigor of *Eureka Math*.

INDICATORS

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

Mathematical Processes	Aligned Components of *Eureka Math*
1: Solves mathematical problems. Through the use of appropriate academic and technical tools, students will make sense of mathematical problems and persevere in solving them. Students will draw upon their prior knowledge in order to employ critical thinking skills, reasoning skills, creativity, and innovative ability. Additionally, students will compute accurately and determine the reasonableness of solutions.	Lessons in every module engage students in making sense of problems and persevering in solving them as required by this standard. This habit of mind is analogous to the CCSSM Standards for Mathematical Practices 1, 2, and 5, which are 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 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 Processes	Aligned Components of *Eureka Math*
2: Models and represents mathematical problems. Students will analyze relationships in order to create mathematical models given a real-world situation or scenario. Conversely, students will describe situations or scenarios given a mathematical model.	Lessons in every module engage students in reasoning abstractly and quantitatively as required by this standard. This habit of mind 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
3: Communicates mathematical ideas effectively. Students will communicate mathematical ideas effectively and precisely. Students will critique the reasoning of others as well as provide mathematical justifications. Students will utilize appropriate communication approaches individually and collectively and through multiple methods, including writing, speaking, and listening.	Lessons in every module engage students in constructing viable arguments and critiquing the reasoning of others as required by this standard. This habit of mind is analogous to the CCSSM Standards for Mathematical Practices 3 and 6, which are 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 M6: Decimal Fractions G4 M7: Exploring Measurement with Multiplication

Mathematical Processes	Aligned Components of *Eureka Math*
4: Makes mathematical connections. Students will connect mathematical knowledge, ideas, and skills beyond the math classroom. This includes the connection of mathematical ideas to other topics within mathematics and to other content areas. Additionally, students will be able to describe the connection of mathematical knowledge and skills to their career interest as well as within authentic/real-world contexts.	Lessons in every module engage students in modeling with mathematics as required by this standard. This habit of mind is analogous to the CCSSM Standards for Mathematical Practices 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

Category	Mathematics Standards	Aligned Components of *Eureka Math*
Number	**Numeric Relationships: Students will demonstrate, represent, and show relationships among fractions and decimals within the base-ten number system.**	
	MA 4.1.1.a Read, write, and demonstrate multiple equivalent representations for whole numbers up to one million and decimals to the hundredths, using objects, visual representations, standard form, word form, and expanded notation.	G4 M1 Topic A: Place Value of Multi-Digit Whole Numbers G4 M1 Topic B: Comparing Multi-Digit Whole Numbers
	MA 4.1.1.b Recognize a digit in one place represents ten times what it represents in the place to its right and 1/10 what it represents in the place to its left.	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. G5 M1 Topic A: Multiplicative Patterns on the Place Value Chart G5 M2 Topic A: Mental Strategies for Multi-Digit Whole Number Multiplication G5 M2 Lesson 16: Use *divide by 10* patterns for multi-digit whole number division.
	MA 4.1.1.c Classify a number up to 100 as prime or composite.	G4 M3 Topic F: Reasoning with Divisibility

Category	Mathematics Standards		Aligned Components of *Eureka Math*
	MA 4.1.1.d Determine whether a given whole number up to 100 is a multiple of a given one-digit number.		G4 M3 Lesson 24: Determine if a whole number is a multiple of another number.
	MA 4.1.1.e Determine factors of any whole number up to 100.		G4 M3 Topic F: Reasoning with Divisibility
	MA 4.1.1.f Compare whole numbers up to one million and decimals through the hundredths place using >, <, and = symbols, and visual representations.		G4 M1 Topic B: Comparing Multi-Digit Whole Numbers G4 M6 Topic C: Decimal Comparison
	MA 4.1.1.g Round a multi-digit whole number to any given place.		G4 M1 Topic C: Rounding Multi-Digit Whole Numbers
	MA 4.1.1.h Use decimal notation for fractions with denominators of 10 or 100.		G4 M6: Decimal Fractions

Category	Mathematics Standards		Aligned Components of *Eureka Math*
	MA 4.1.1.i Generate and explain equivalent fractions by multiplying by an equivalent fraction of 1.		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.
	MA 4.1.1.j Explain how to change a mixed number to a fraction and how to change a fraction to a mixed number.		G4 M5 Lessons 24–25: Decompose and compose fractions greater than 1 to express them in various forms.
	MA 4.1.1.k Compare and order fractions having unlike numerators and unlike denominators using visual representations (number line), comparison symbols and verbal reasoning (e.g., using benchmarks or common numerators or common denominators).		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.

Category	Mathematics Standards	Aligned Components of *Eureka Math*
	MA 4.1.1.l Decompose a fraction into a sum of fractions with the same denominator in more than one way and record each decomposition with an equation and a visual representation.	G4 M5 Topic A: Decomposition and Fraction Equivalence G4 M5 Lessons 24–25: Decompose and compose fractions greater than 1 to express them in various forms.
	Operations: Students will demonstrate the meaning of addition and subtraction of whole numbers and fractions and compute accurately.	
	MA 4.1.2.a Add and subtract multi-digit numbers using the standard algorithm.	G4 M1 Topic D: Multi-Digit Whole Number Addition G4 M1 Topic E: Multi-Digit Whole Number Subtraction
	MA 4.1.2.b Multiply a four-digit whole number by a one-digit whole number.	G4 M3: Multi-Digit Multiplication and Division
	MA 4.1.2.c Multiply a two-digit whole number by a two-digit whole number using the standard algorithm.	G4 M3 Lessons 37–38: Transition from four partial products to the standard algorithm for two-digit by two-digit multiplication.
	MA 4.1.2.d Divide up to a four-digit whole number by a one-digit divisor with and without a remainder.	G4 M3 Topic E: Division of Tens and Ones with Successive Remainders G4 M3 Topic G: Division of Thousands, Hundreds, Tens, and Ones

Category	Mathematics Standards	Aligned Components of *Eureka Math*
	MA 4.1.2.e Use drawings, words, and symbols to explain the meaning of addition and subtraction of fractions with like denominators.	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.
	MA 4.1.2.f Add and subtract fractions and 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
	MA 4.1.2.g Multiply a fraction by a whole number.	G4 M5 Topic G: Repeated Addition of Fractions as Multiplication
	MA 4.1.2.h Determine the reasonableness of whole number products and quotients in real-world problems using estimation, compatible numbers, mental computations, or other strategies.	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.

Category	Mathematics Standards	Aligned Components of *Eureka Math*
Algebra	**Algebraic Relationships: Students will demonstrate, represent, and show relationships with expressions and equations.**	
	MA 4.2.1.a Create a simple algebraic expression or equation using a variable for an unknown number to represent a math process (e.g., $3 + n = 15$, $81 \div n = 9$).	G4 M1: Place Value, Rounding, and Algorithms for Addition and Subtraction G4 M3: Multi-Digit Multiplication and Division Note: Supplemental material may be necessary to address this standard.
	MA 4.2.1.b Generate and analyze a number or shape pattern to follow a given rule, such as $y = 3x + 5$ is a rule to describe a relationship between two variables and can be used to find a second number when a first number is given.	G4 M3 Topic F: Reasoning with Divisibility G4 M5 Topic H: Exploring a Fraction Pattern

Category	Mathematics Standards	Aligned Components of *Eureka Math*
	Algebraic Processes: Students will apply the operational properties when evaluating expressions and solving equations.	
	MA 4.2.2.a Solve one- and two-step problems which use any or all of the four basic operations and include the use of a letter to represent 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.

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	Applications: Students will solve real-world problems involving equations with fractions.	
	MA 4.2.3.a Solve real-world problems involving multi-step equations comprised of whole numbers using the four operations, including interpreting remainders.	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.
	MA 4.2.3.b Solve real-world problems involving addition and subtraction of fractions and mixed numbers with 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.
Geometry	**Characteristics: Students will identify and describe geometric characteristics and create two- and three-dimensional shapes.**	
	MA 4.3.1.a Recognize angles as geometric shapes that are formed where two rays share a common endpoint.	G4 M4 Topic B: Angle Measurement

Category	Mathematics Standards		Aligned Components of *Eureka Math*
	MA 4.3.1.b Classify an angle as acute, obtuse, or right.		G4 M4 Lesson 2: Use right angles to determine whether angles are equal to, greater than, or less than right angles. Draw right, obtuse, and acute angles.
	MA 4.3.1.c Identify and draw points, lines, line segments, rays, angles, parallel lines, perpendicular lines, and intersecting lines, and recognize them in two-dimensional figures.		G4 M4: Angle Measure and Plane Figures
	MA 4.3.1.d Classify two-dimensional shapes based on the presence or absence of parallel and perpendicular lines, or the presence or absence of specific angles.		G4 M4 Topic D: Two-Dimensional Figures and Symmetry
	MA 4.3.1.e Identify right triangles.		G4 M4 Topic D: Two-Dimensional Figures and Symmetry
	MA 4.3.1.f Measure angles in whole number degrees using a protractor.		G4 M4 Topic B: Angle Measurement
	MA 4.3.1.g Sketch angles of a specified measure.		G4 M4 Lesson 7: Measure and draw angles. Sketch given angle measures, and verify with a protractor.
	MA 4.3.1.h Recognize and draw lines of symmetry in two-dimensional shapes.		G4 M4 Topic D: Two-Dimensional Figures and Symmetry

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	Measurement: Students will perform and compare measurements and apply formulas.	
	MA 4.3.3.a Apply perimeter and area formulas for rectangles.	G4 M3 Topic A: Multiplicative Comparison Word Problems
	MA 4.3.3.b Identify and use the appropriate tools, operations, and units of measurement, both customary and metric, to solve real-world problems involving time, length, weight, mass, capacity, and volume.	G4 M2: Unit Conversions and Problem Solving with Metric Measurement G4 M7 Topic B: Problem Solving with Measurement
	MA 4.3.3.c Generate simple conversions from a larger unit to a smaller unit within the customary and metric systems of measurement.	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
Data	**Representations: Students will create displays that represent data.**	
	MA 4.4.1.a Represent data using line plots where the horizontal scale is marked off in appropriate units (e.g., whole numbers, halves, quarters, or eighths).	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.

Category	Mathematics Standards	Aligned Components of *Eureka Math*
	Analysis & Applications: Students will analyze data to address the situation.	
	MA 4.4.2.a Solve problems involving addition or subtraction of fractions using information presented in line plots.	G4 M5 Lesson 28: Solve word problems with line plots.