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

Many of the Grade 4 Minnesota Academic Standards in Mathematics 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 Minnesota Academic Standards in Mathematics while still benefiting from the coherence and rigor of *Eureka Math*.

INDICATORS

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

Strand	Academic Standards	Aligned Components of *Eureka Math*
Number & Operation	**Standard: Demonstrate mastery of multiplication and division basic facts; multiply multi-digit numbers; solve real-world and mathematical problems using arithmetic.**	
	4.1.1.1 Demonstrate fluency with multiplication and division facts.	G3 M1: Properties of Multiplication and Division and Solving Problems with Units of 2–5 and 10 G3 M3: Multiplication and Division with Units of 0, 1, 6–9, and Multiples of 10
	4.1.1.2 Use an understanding of place value to multiply a number by 10, 100, and 1,000.	G4 M1 Topic A: Place Value of Multi-Digit Whole Numbers G4 M3 Topic B: Multiplication by 10, 100, and 1,000
	4.1.1.3 Multiply multi-digit numbers, using efficient and generalizable procedures, based on knowledge of place value, including standard algorithms.	G4 M3: Multi-Digit Multiplication and Division
	4.1.1.4 Estimate products and quotients of multi-digit whole numbers by using rounding, benchmarks, and place value to assess the reasonableness of results.	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.

Strand	Academic Standards	Aligned Components of *Eureka Math*
	4.1.1.5 Solve multi-step real-world and mathematical problems requiring the use of addition, subtraction, and multiplication of multi-digit whole numbers. Use various strategies, including the relationship 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 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. Note: Supplemental material is necessary to incorporate the use of technology.
	4.1.1.6 Use strategies and algorithms based on knowledge of place value, equality, and properties of operations to divide multi-digit whole numbers by one- or two-digit numbers. Strategies may include mental strategies, partial quotients, the commutative, associative, and distributive properties, and repeated subtraction.	G4 M3 Topic E: Division of Tens and Ones with Successive Remainders G4 M3 Topic G: Division of Thousands, Hundreds, Tens, and Ones G5 M2 Topic F: Partial Quotients and Multi-Digit Whole Number Division

Strand	Academic Standards	Aligned Components of *Eureka Math*
	Standard: Represent and compare fractions and decimals in real-world and mathematical situations; use place value to understand how decimals represent quantities.	
	4.1.2.1 Represent equivalent fractions using fraction models such as parts of a set, fraction circles, fraction strips, number lines, and other manipulatives. Use the models to determine 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.
	4.1.2.2 Locate fractions on a number line. Use models to order and compare whole numbers and fractions, including mixed numbers and improper fractions.	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.

Strand	Academic Standards		Aligned Components of *Eureka Math*
	4.1.2.3 Use fraction models to add and subtract fractions with like denominators in real-world and mathematical situations. Develop a rule for addition and subtraction of fractions with like denominators.		G4 M5 Lesson 19: Solve word problems involving addition and subtraction of fractions. G4 M5 Lesson 24: Decompose and compose fractions greater than 1 to express them in various forms. G4 M5 Lesson 28: Solve word problems with line plots. G4 M5 Topic F: Addition and Subtraction of Fractions by Decomposition
	4.1.2.4 Read and write decimals with words and symbols; use place value to describe decimals in terms of thousands, hundreds, tens, ones, tenths, hundredths, and thousandths.		G4 M6: Decimal Fractions G5 M1: Place Value and Decimal Fractions
	4.1.2.5 Compare and order decimals and whole numbers using place value, a number line, and models such as grids and base 10 blocks.		G4 M6 Topic C: Decimal Comparison
	4.1.2.6 Read and write tenths and hundredths in decimal and fraction notations using words and symbols; know the fraction and decimal equivalents for halves and fourths.		G4 M6: Decimal Fractions
	4.1.2.7 Round decimals to the nearest tenth.		G5 M1 Topic C: Place Value and Rounding Decimal Fractions

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Algebra	**Standard: Use input-output rules, tables, and charts to represent patterns and relationships and to solve real-world and mathematical problems.**	
	4.2.1.1 Create and use input-output rules involving addition, subtraction, multiplication, and division to solve problems in various contexts. Record the inputs and outputs in a chart or table.	G4 M2: Unit Conversions and Problem Solving with Metric Measurement G4 M7 Topic A: Measurement Conversion Tables Note: Supplemental material is necessary to address input-output rules involving addition and subtraction.
	Standard: Use number sentences involving multiplication, division, and unknowns to represent and solve real-world and mathematical problems; create real-world situations corresponding to number sentences.	
	4.2.2.1 Understand how to interpret number sentences involving multiplication, division, and unknowns. Use real-world situations involving multiplication or division to represent number sentences.	G4 M3: Multi-Digit Multiplication and Division
	4.2.2.2 Use multiplication, division, and unknowns to represent a given problem situation using a number sentence. Use number sense, properties of multiplication, and the relationship between multiplication and division to find values for the unknowns that make the number sentences true.	G4 M3: Multi-Digit Multiplication and Division

Strand	Academic Standards	Aligned Components of *Eureka Math*
Geometry & Measurement	**Standard: Name, describe, classify, and sketch polygons.**	
	4.3.1.1 Describe, classify, and sketch triangles, including equilateral, right, obtuse, and acute triangles. Recognize triangles in various contexts.	G4 M4: Angle Measure and Plane Figures
	4.3.1.2 Describe, classify, and draw quadrilaterals, including squares, rectangles, trapezoids, rhombuses, parallelograms, and kites. Recognize quadrilaterals in various contexts.	G4 M4 Lesson 15: Classify quadrilaterals based on parallel and perpendicular lines and the presence or absence of angles of a specified size. G4 M4 Lesson 16: Reason about attributes to construct quadrilaterals on square or triangular grid paper. G5 M5 Lesson 19: Draw kites and squares to clarify their attributes, and define kites and squares based on those attributes. G5 M5 Lesson 20: Classify two-dimensional figures in a hierarchy based on properties. G5 M5 Lesson 21: Draw and identify varied two-dimensional figures from given attributes.

Strand	Academic Standards	Aligned Components of *Eureka Math*
	Standard: Understand angle and area as measurable attributes of real-world and mathematical objects. Use various tools to measure angles and areas.	
	4.3.2.1 Measure angles in geometric figures and real-world objects with a protractor or angle ruler.	G4 M4 Topic B: Angle Measurement
	4.3.2.2 Compare angles according to size. Classify angles as acute, right, and obtuse.	G4 M4 Topic A: Lines and Angles
	4.3.2.3 Understand that the area of a two-dimensional figure can be found by counting the total number of same size square units that cover a shape without gaps or overlaps. Justify why length and width are multiplied to find the area of a rectangle by breaking the rectangle into one unit by one unit squares and viewing these as grouped into rows and columns.	G3 M4 Topic A: Foundations for Understanding Area G3 M4 Lesson 6: Draw rows and columns to determine the area of a rectangle given an incomplete array.
	4.3.2.4 Find the areas of geometric figures and real-world objects that can be divided into rectangular shapes. Use square units to label area measurements.	G3 M4 Topic D: Applications of Area Using Side Lengths of Figures

Strand	Academic Standards	Aligned Components of *Eureka Math*
	Standard: Use translations, reflections, and rotations to establish congruency and understand symmetries.	
	4.3.3.1 Apply translations (slides) to figures.	G8 M2 Lesson 2: Definition of Translation and Three Basic Properties G8 M2 Lesson 3: Translating Lines G8 M2 Lesson 7: Sequencing Translations
	4.3.3.2 Apply reflections (flips) to figures by reflecting over vertical or horizontal lines and relate reflections to lines of symmetry.	G4 M4 Lesson 12: Recognize lines of symmetry for given two-dimensional figures. Identify line-symmetric figures, and draw lines of symmetry. G4 M4 Lesson 14: Define and construct triangles from given criteria. Explore symmetry in triangles. G6 M3 Lesson 16: Symmetry in the Coordinate Plane G8 M2 Lesson 4: Definition of Reflection and Basic Properties G8 M2 Lesson 8: Sequencing Reflections and Translations
	4.3.3.3 Apply rotations (turns) of 90° clockwise or counterclockwise.	G4 M4 Lesson 8: Identify and measure angles as turns and recognize them in various contexts.
	4.3.3.4 Recognize that translations, reflections, and rotations preserve congruency and use them to show that two figures are congruent.	G8 M2: The Concept of Congruence

Strand	Academic Standards	Aligned Components of *Eureka Math*
Data Analysis	**Standard: Collect, organize, display, and interpret data, including data collected over a period of time and data represented by fractions and decimals.**	
	4.4.1.1 Use tables, bar graphs, timelines, and Venn diagrams to display data sets. The data may include fractions or decimals. Understand that spreadsheet tables and graphs can be used to display data.	G3 M6: Collecting and Displaying Data 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. Note: Supplemental material is necessary to address Venn diagrams, timelines, and spreadsheet tables.