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 8 MATHEMATICS

The majority of the Grade 8 Nebraska Mathematics Standards are fully covered by the Grade 8 *Eureka Math* curriculum. The areas where the Grade 8 Nebraska Mathematics Standards and Grade 8 *Eureka Math* do not align will require the use of *Eureka Math* content from other grade levels or courses, 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: G8 M1: Integer Exponents and Scientific Notation G8 M2: The Concept of Congruence G8 M3: Similarity G8 M4: Linear Equations G8 M5: Examples of Functions from Geometry G8 M6: Linear Functions
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: G8 M3: Similarity G8 M4: Linear Equations G8 M6: Linear Functions

Mathematical Processes	Aligned Components of *Eureka Math*
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: G8 M1: Integer Exponents and Scientific Notation G8 M2: The Concept of Congruence G8 M3: Similarity G8 M4: Linear Equations G8 M5: Examples of Functions from Geometry G8 M6: Linear Functions G8 M7: Introduction to Irrational Numbers Using Geometry

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: G8 M1: Integer Exponents and Scientific Notation G8 M3: Similarity G8 M4: Linear Equations G8 M5: Examples of Functions from Geometry G8 M6: Linear Functions G8 M7: Introduction to Irrational Numbers Using Geometry

Category	Mathematics Standards	Aligned Components of *Eureka Math*
Number	**Numeric Relationships: Students will demonstrate, represent, and show relationships among real numbers within the base-ten number system.**	
	MA 8.1.1.a Determine subsets of numbers as natural, whole, integer, rational, irrational, or real, based on the definitions of these sets of numbers.	G8 M7 Topic B: Decimal Expansions of Numbers Note: Supplemental material is necessary to address natural, whole, and integer numbers as subsets of rational numbers.
	MA 8.1.1.b Represent numbers with positive and negative exponents and in scientific notation.	G8 M1: Integer Exponents and Scientific Notation
	MA 8.1.1.c Describe the difference between a rational and irrational number.	G8 M7 Topic B: Decimal Expansions of Numbers
	MA 8.1.1.d Approximate, compare, and order real numbers (both rational and irrational) and order real numbers both off and on the number line.	G8 M7 Topic A: Square and Cube Roots G8 M7 Lesson 10: Converting Repeating Decimals to Fractions G8 M7 Lesson 11: The Decimal Expansion of Some Irrational Numbers G8 M7 Lesson 13: Comparing Irrational Numbers G8 M7 Lesson 14: Decimal Expansion of π

Category	Mathematics Standards	Aligned Components of *Eureka Math*
	Operations: Students will compute with exponents and roots.	
	MA 8.1.2.a Evaluate the square roots of perfect squares less than or equal to 400 and cube roots of perfect cubes less than or equal to 125.	G8 M7 Topic A: Square and Cube Roots
	MA 8.1.2.b Simplify numerical expressions involving exponents and roots (e.g., $4^{(-2)}$ is the same as 1/16).	G8 M1: Integer Exponents and Scientific Notation
	MA 8.1.2.c Simplify numerical expressions involving absolute value.	G7 M3 Topic A: Use Properties of Operations to Generate Equivalent Expressions Note: Supplemental material is necessary to address absolute value expressions.
	MA 8.1.2.d Multiply and divide numbers using scientific notation.	G8 M1: Integer Exponents and Scientific Notation
	MA 8.1.2.e Estimate and check reasonableness of answers using appropriate strategies and tools.	G8 M1: Integer Exponents and Scientific Notation G8 M4: Linear Equations

Category	Mathematics Standards	Aligned Components of *Eureka Math*
Algebra	**Algebraic Relationships: Students will demonstrate, represent, and show relationships with expressions, equations, and inequalities.**	
	MA 8.2.1.a Create algebraic expressions, equations, and inequalities (e.g., two-step, one variable) from word phrases, tables, and pictures.	G6 M4 Lesson 34: Writing and Graphing Inequalities in Real-World Problems G7 M3 Topic B: Solve Problems Using Expressions, Equations, and Inequalities G8 M4 Topic A: Writing and Solving Linear Equations Algebra I M1 Topic C: Solving Equations and Inequalities
	MA 8.2.1.b Determine and describe the rate of change for given situations through the use of tables and graphs.	G8 M6 Topic A: Linear Functions
	MA 8.2.1.c Describe equations and linear graphs as having one solution, no solution, or infinitely many solutions.	G8 M4 Topic A: Writing and Solving Linear Equations
	MA 8.2.1.d Graph proportional relationships and interpret the slope.	G8 M4 Topic B: Linear Equations in Two Variables and Their Graphs G8 M4 Lesson 15: The Slope of a Non-Vertical Line G8 M4 Lesson 22: Constant Rates Revisited G8 M4 Lesson 24: Introduction to Simultaneous Equations

Category	Mathematics Standards	Aligned Components of *Eureka Math*
	Algebraic Processes: Students will apply the operational properties when evaluating expressions and solving expressions, equations, and inequalities.	
	MA 8.2.2.a Solve multi-step equations involving rational numbers with the same variable appearing on both sides of the equal sign.	G8 M4 Topic A: Writing and Solving Linear Equations
	MA 8.2.2.b Solve two-step inequalities involving rational numbers and represent solutions on a number line.	G6 M4 Lesson 34: Writing and Graphing Inequalities in Real-World Problems G7 M3 Lesson 12: Properties of Inequalities G7 M3 Lesson 13: Inequalities G7 M3 Lesson 14: Solving Inequalities G7 M3 Lesson 15: Graphing Solutions to Inequalities Algebra I M1 Topic C: Solving Equations and Inequalities
	Applications: Students will solve real-world problems involving multi-step equations and multi-step inequalities.	
	MA 8.2.3.a Describe and write equations from words, patterns, and tables.	G8 M4: Linear Equations
	MA 8.2.3.b Write a multi-step equation to represent real-world problems using rational numbers in any form.	G8 M4 Topic A: Writing and Solving Linear Equations

Category	Mathematics Standards	Aligned Components of *Eureka Math*
	MA 8.2.3.c Solve real-world multi-step problems involving rational numbers in any form.	G8 M4 Topic A: Writing and Solving Linear Equations
Geometry	**Characteristics: Students will identify and describe geometric characteristics of two-dimensional shapes.**	
	MA 8.3.1.a Determine and use the relationships of the interior angles of a triangle to solve for missing measures.	G8 M2 Topic C: Congruence and Angle Relationships G8 M3 Topic B: Similar Figures
	MA 8.3.1.b Identify and apply geometric properties of parallel lines cut by a transversal and the resulting corresponding, alternate interior, and alternate exterior angles to find missing measures.	G8 M2 Topic C: Congruence and Angle Relationships G8 M3 Topic B: Similar Figures
	Coordinate Geometry: Students will determine location, orientation, and relationships on the coordinate plane.	
	MA 8.3.2.a Perform and describe positions and orientation of shapes under single transformations including rotations (in multiples of 90 degrees about the origin), translations, reflections, and dilations on and off the coordinate plane.	G8 M2 Topic A: Definitions and Properties of the Basic Rigid Motions

Category	Mathematics Standards	Aligned Components of *Eureka Math*
	MA 8.3.2.b Find congruent two-dimensional figures and define congruence in terms of a series of transformations.	G8 M2: The Concept of Congruence
	MA 8.3.2.c Find similar two-dimensional figures and define similarity in terms of a series of transformations.	G8 M3 Lesson 3: Examples of Dilations G8 M3 Topic B: Similar Figures
	Measurement: Students will perform and compare measurements and apply formulas.	
	MA 8.3.3.a Explain a model of the Pythagorean Theorem.	G8 M2 Topic D: The Pythagorean Theorem G8 M3 Topic C: The Pythagorean Theorem G8 M7 Topic C: The Pythagorean Theorem
	MA 8.3.3.b Apply the Pythagorean Theorem to find side lengths of triangles and to solve real-world problems.	G8 M2 Topic D: The Pythagorean Theorem G8 M3 Topic C: The Pythagorean Theorem G8 M4 Topic E: Pythagorean Theorem G8 M7: Introduction to Irrational Numbers Using Geometry
	MA 8.3.3.c Find the distance between any two points on the coordinate plane using the Pythagorean Theorem.	G8 M2 Topic D: The Pythagorean Theorem G8 M7 Lesson 17: Distance on the Coordinate Plane

Category	Mathematics Standards	Aligned Components of *Eureka Math*
	MA 8.3.3.d Determine the volume of cones, cylinders, and spheres, and solve real-world problems using volumes.	G8 M5: Examples of Functions from Geometry G8 M7 Topic D: Applications of Radicals and Roots
Data	**Representations: Students will create displays that represent data.**	
	MA 8.4.1.a Represent bivariate data (i.e., ordered pairs) using scatter plots.	G8 M6 Topic B: Bivariate Numerical Data G8 M6 Topic C: Linear and Nonlinear Models
	Analysis & Applications: Students will analyze data to address the situation.	
	MA 8.4.2.a Solve problems and make predictions using an approximate line of best fit.	G8 M6 Topic B: Bivariate Numerical Data G8 M6 Topic C: Linear and Nonlinear Models