

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

Missouri Learning Standards: Mathematics Correlation to *Eureka Math*[™]

GRADE 8 MATHEMATICS

The majority of the Grade 8 Missouri Learning Standards: Mathematics are fully covered by the Grade 8 *Eureka Math* curriculum. The areas where the Grade 8 Missouri Learning Standards: Mathematics and Grade 8 *Eureka Math* do not align will require the use of *Eureka Math* content from another grade level. A detailed analysis of alignment is provided in the table below.

INDICATORS

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

Domain	Standards for Mathematical Content	Aligned Components of <i>Eureka Math</i>
Number Sense and Operations	Cluster: Know that there are numbers that are not rational, and approximate them by rational numbers.	
	8.NS.A.1 Explore the real number system.	
	a. Know the differences between rational and irrational numbers.	G8 M7 Lesson 6: Finite and Infinite Decimals
	b. Understand that all rational numbers have a decimal expansion that terminates or repeats.	G8 M7 Lesson 6: Finite and Infinite Decimals
	c. Convert decimals which repeat into fractions and fractions into repeating decimals.	G8 M7 Topic B: Decimal Expansions of Numbers
	d. Generate equivalent representations of rational numbers.	G8 M7 Topic B: Decimal Expansions of Numbers
	8.NS.A.2 Estimate the value and compare the size of irrational numbers and approximate their locations on a 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

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Expressions, Equations and Inequalities	Cluster: Work with radicals and integer exponents.	
	8.EE1.A.1 Know and apply the properties of integer exponents to generate equivalent expressions.	G8 M1: Integer Exponents and Scientific Notation
	8.EE1.A.2 Investigate concepts of square and cube roots.	
	a. Solve equations of the form $x^2 = p$ and $x^3 = p$, where p is a positive rational number.	G8 M7 Lesson 2: Square Roots G8 M7 Lesson 5: Solving Equations with Radicals
	b. Evaluate square roots of perfect squares less than or equal to 625 and cube roots of perfect cubes less than or equal to 1,000.	G8 M7 Lesson 2: Square Roots G8 M7 Lesson 5: Solving Equations with Radicals
	c. Recognize that square roots of non-perfect squares are irrational.	G8 M7 Lesson 2: Square Roots G8 M7 Lesson 5: Solving Equations with Radicals
	8.EE1.A.3 Express very large and very small quantities in scientific notation and approximate how many times larger one is than the other.	G8 M1: Integer Exponents and Scientific Notation

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	8.EE1.A.4 Use scientific notation to solve problems.	
	a. Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used.	G8 M1: Integer Exponents and Scientific Notation
	b. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities.	G8 M1: Integer Exponents and Scientific Notation
	Cluster: Understand the connections between proportional relationships, lines and linear equations.	
	8.EE1.B.5 Graph proportional relationships.	
	a. Interpret the unit rate as the slope of the graph.	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

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	b. Compare two different proportional relationships.	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
	8.EE1.B.6 Apply concepts of slope and y -intercept to graphs, equations and proportional relationships.	
	a. Explain why the slope (m) is the same between any two distinct points on a non-vertical line in the Cartesian coordinate plane.	G8 M4 Topic C: Slope and Equations of Lines
	b. Derive the equation $y = mx$ for a line through the origin and the equation $y = mx + b$ for a line intercepting the vertical axis at b .	G8 M4 Topic C: Slope and Equations of Lines

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	Cluster: Analyze and solve linear equations and inequalities and pairs of simultaneous linear equations.	
	8.EE1.C.7 Solve linear equations and inequalities in one variable.	
	a. Create and identify linear equations with one solution, infinitely many solutions or no solutions.	G8 M4 Topic A: Writing and Solving Linear Equations
	b. Solve linear equations and inequalities with rational number coefficients, including equations and inequalities whose solutions require expanding expressions using the distributive property and combining like terms.	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 G8 M4 Topic A: Writing and Solving Linear Equations
	8.EE1.C.8 Analyze and solve systems of linear equations.	
	a. Graph systems of linear equations and recognize the intersection as the solution to the system.	G8 M4 Topic D: Systems of Linear Equations and Their Solutions Note: Learning systems of linear equations is extended in Algebra I M1 Topic C.

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	b. Explain why solution(s) to a system of two linear equations in two variables correspond to point(s) of intersection of the graphs.	G8 M4 Topic D: Systems of Linear Equations and Their Solutions Note: Learning systems of linear equations is extended in Algebra I M1 Topic C.
	c. Explain why systems of linear equations can have one solution, no solution or infinitely many solutions.	G8 M4 Lesson 26: Characterization of Parallel Lines G8 M4 Lesson 27: Nature of Solutions of a System of Linear Equations
	d. Solve systems of two linear equations.	G8 M4 Topic D: Systems of Linear Equations and Their Solutions G8 M4 Topic E: Pythagorean Theorem Note: Learning systems of linear equations is extended in Algebra I M1 Topic C.
Geometry and Measurement	Cluster: Understand congruence and similarity using physical models, transparencies or geometry software.	
	8.GM.A.1 Verify experimentally the congruence properties of rigid transformations.	
	a. Verify that angle measure, betweenness, collinearity and distance are preserved under rigid transformations.	G8 M2 Topic A: Definitions and Properties of the Basic Rigid Motions
	b. Investigate if orientation is preserved under rigid transformations.	G8 M2 Topic A: Definitions and Properties of the Basic Rigid Motions

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	<p>8.GM.A.2 Understand that two-dimensional figures are congruent if a series of rigid transformations can be performed to map the pre-image to the image.</p>	
	<p>a. Describe a possible sequence of rigid transformations between two congruent figures.</p>	G8 M2: The Concept of Congruence
	<p>8.GM.A.3 Describe the effect of dilations, translations, rotations and reflections on two-dimensional figures using coordinates.</p>	G8 M3 Topic A: Dilation G8 M3 Lesson 8: Similarity
	<p>8.GM.A.4 Understand that two-dimensional figures are similar if a series of transformations (rotations, reflections, translations and dilations) can be performed to map the pre-image to the image.</p>	
	<p>a. Describe a possible sequence of transformations between two similar figures.</p>	G8 M3 Lesson 3: Examples of Dilations G8 M3 Topic B: Similar Figures
	<p>8.GM.A.5 Explore angle relationships and establish informal arguments.</p>	
	<p>a. Derive the sum of the interior angles of a triangle.</p>	G8 M2 Topic C: Congruence and Angle Relationships

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	b. Explore the relationship between the interior and exterior angles of a triangle.	G8 M2 Topic C: Congruence and Angle Relationships
	c. Construct and explore the angles created when parallel lines are cut by a transversal.	G8 M2 Lesson 12: Angles Associated with Parallel Lines
	d. Use the properties of similar figures to solve problems.	G8 M3 Lesson 4: Fundamental Theorem of Similarity (FTS) G8 M3 Lesson 5: First Consequences of FTS G8 M3 Lesson 8: Similarity G8 M3 Lesson 9: Basic Properties of Similarity
Cluster: Understand and apply the Pythagorean Theorem.		
	8.GM.B.6 Use models to demonstrate a proof of the Pythagorean Theorem and its converse.	G8 M2 Topic D: The Pythagorean Theorem G8 M3 Topic C: The Pythagorean Theorem G8 M7 Topic C: The Pythagorean Theorem
	8.GM.B.7 Use the Pythagorean Theorem to determine unknown side lengths in right triangles in problems in two- and three-dimensional contexts.	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

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	<p>8.GM.B.8 Use the Pythagorean Theorem to find the distance between points in a Cartesian coordinate system.</p>	<p>G8 M2 Topic D: The Pythagorean Theorem G8 M7 Lesson 17: Distance on the Coordinate Plane</p>
	<p>Cluster: Solve problems involving volume of cones, pyramids and spheres.</p>	
	<p>8.GM.C.9 Solve problems involving surface area and volume.</p>	
	<p>a. Understand the concept of surface area and find surface area of pyramids.</p>	<p>G7 M3 Lesson 22: Surface Area G7 M6 Lessons 23–24: Surface Area G8 M5: Examples of Functions from Geometry</p>
	<p>b. Understand the concepts of volume and find the volume of pyramids, cones and spheres.</p>	<p>G8 M5: Examples of Functions from Geometry G8 M7 Topic D: Applications of Radicals and Roots</p>
<p>Data Analysis, Statistics and Probability</p>	<p>Cluster: Investigate patterns of association in bivariate data.</p>	
	<p>8.DSP.A.1 Construct and interpret scatter plots of bivariate measurement data to investigate patterns of association between two quantities.</p>	<p>G8 M6: Linear Functions</p>
	<p>8.DSP.A.2 Generate and use a trend line for bivariate data, and informally assess the fit of the line.</p>	<p>G8 M6: Linear Functions</p>

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	<p>8.DSP.A.3 Interpret the parameters of a linear model of bivariate measurement data to solve problems.</p>	G8 M6 Topic C: Linear and Nonlinear Models
	<p>8.DSP.A.4 Understand the patterns of association in bivariate categorical data displayed in a two-way table.</p>	
	<p>a. Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects.</p>	G8 M6 Topic D: Bivariate Categorical Data
	<p>b. Use relative frequencies calculated for rows or columns to describe possible association between the two variables.</p>	G8 M6 Topic D: Bivariate Categorical Data
Functions	Cluster: Define, evaluate and compare functions.	
	<p>8.F.A.1 Explore the concept of functions. (The use of function notation is not required.)</p>	
	<p>a. Understand that a function assigns to each input exactly one output.</p>	G8 M5: Examples of Functions from Geometry
	<p>b. Determine if a relation is a function.</p>	G8 M5: Examples of Functions from Geometry
	<p>c. Graph a function.</p>	G8 M5: Examples of Functions from Geometry G8 M6: Linear Functions

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	<p>8.F.A.2 Compare characteristics of two functions each represented in a different way.</p>	G8 M5 Lesson 7: Comparing Linear Functions and Graphs	
	<p>8.F.A.3 Investigate the differences between linear and nonlinear functions.</p>		
	<p>a. Interpret the equation $y = mx + b$ as defining a linear function, whose parameters are the slope (m) and the y-intercept (b).</p>	G8 M5: Examples of Functions from Geometry	
	<p>b. Recognize that the graph of a linear function has a constant rate of change.</p>	G8 M5: Examples of Functions from Geometry	
	<p>c. Give examples of nonlinear functions.</p>	G8 M5 Lesson 8: Graphs of Simple Nonlinear Functions G8 M6 Lesson 5: Increasing and Decreasing Functions	
	Cluster: Use functions to model relationships between quantities.		
	<p>8.F.B.4 Use functions to model linear relationships between quantities.</p>		
	<p>a. Explain the parameters of a linear function based on the context of a problem.</p>	G8 M6 Topic A: Linear Functions	
	<p>b. Determine the parameters of a linear function.</p>	G8 M6 Topic A: Linear Functions	

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	c. Determine the x -intercept of a linear function.	G8 M6 Topic A: Linear Functions
	8.F.B.5 Describe the functional relationship between two quantities from a graph or a verbal description.	G8 M6 Topic A: Linear Functions