

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 7 MATHEMATICS

The majority of the Grade 7 Missouri Learning Standards: Mathematics are fully covered by the Grade 7 *Eureka Math* curriculum. The primary area where the Grade 7 Missouri Learning Standards: Mathematics and Grade 7 *Eureka Math* do not align is in the domain of Expressions, Equations and Inequalities. One standard from this domain 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>
Ratios and Proportional Relationships	Cluster: Analyze proportional relationships and use them to solve problems.	
	7.RP.A.1 Compute unit rates, including those that involve complex fractions, with like or different units.	G7 M1 Topic C: Ratios and Rates Involving Fractions
	7.RP.A.2 Recognize and represent proportional relationships between quantities.	
	a. Determine when two quantities are in a proportional relationship.	G7 M1 Topic A: Proportional Relationships
	b. Identify and/or compute the constant of proportionality (unit rate).	G7 M1 Topic B: Unit Rate and the Constant of Proportionality G7 M1 Lesson 15: Equations of Graphs of Proportional Relationships Involving Fractions G7 M1 Lesson 16: Relating Scale Drawings to Ratios and Rates G7 M4 Lesson 12: The Scale Factor as a Percent for a Scale Drawing
	c. Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation.	G7 M1 Lesson 10: Interpreting Graphs of Proportional Relationships
	d. Recognize that the graph of any proportional relationship will pass through the origin.	G7 M1 Lessons 5–6: Identifying Proportional and Non-Proportional Relationships in Graphs

Domain	Standards for Mathematical Content	Aligned Components of <i>Eureka Math</i>
	<p>7.RP.A.3 Solve problems involving ratios, rates, percentages and proportional relationships.</p>	<p>G7 M1: Ratios and Proportional Relationships G7 M4: Percent and Proportional Relationships</p>
<p>Number Sense and Operations</p>	<p>Cluster: Apply and extend previous understandings of operations to add, subtract, multiply and divide rational numbers.</p>	
	<p>7.NS.A.1 Apply and extend previous understandings of numbers to add and subtract rational numbers.</p>	
	<p>a. Add and subtract rational numbers.</p>	<p>G7 M2 Topic A: Addition and Subtraction of Integers and Rational Numbers</p>
	<p>b. Represent addition and subtraction on a horizontal or vertical number line.</p>	<p>G7 M2 Topic A: Addition and Subtraction of Integers and Rational Numbers</p>
	<p>c. Describe situations and show that a number and its opposite have a sum of 0 (additive inverses).</p>	<p>G7 M2 Lesson 1: Opposite Quantities Combine to Make Zero</p>
	<p>d. Understand subtraction of rational numbers as adding the additive inverse.</p>	<p>G7 M2 Topic A: Addition and Subtraction of Integers and Rational Numbers</p>
	<p>e. Determine the distance between two rational numbers on the number line is the absolute value of their difference.</p>	<p>G7 M2 Topic A: Addition and Subtraction of Integers and Rational Numbers</p>
	<p>f. Interpret sums and differences of rational numbers.</p>	<p>G7 M2 Topic A: Addition and Subtraction of Integers and Rational Numbers</p>

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	<p>7.NS.A.2 Apply and extend previous understandings of numbers to multiply and divide rational numbers.</p>	
	<p>a. Multiply and divide rational numbers.</p>	<p>G7 M2 Topic B: Multiplication and Division of Integers and Rational Numbers</p>
	<p>b. Determine that a number and its reciprocal have a product of 1 (multiplicative inverse).</p>	<p>G7 M2 Topic B: Multiplication and Division of Integers and Rational Numbers</p>
	<p>c. Understand that every quotient of integers (with non-zero divisor) is a rational number.</p>	<p>G7 M2 Topic B: Multiplication and Division of Integers and Rational Numbers</p>
	<p>d. Convert a rational number to a decimal.</p>	<p>G7 M2 Lesson 14: Converting Rational Numbers to Decimals Using Long Division</p>
	<p>e. Understand that all rational numbers can be written as fractions or decimal numbers that terminate or repeat.</p>	<p>G7 M2 Lesson 14: Converting Rational Numbers to Decimals Using Long Division</p>
	<p>f. Interpret products and quotients of rational numbers by describing real-world contexts.</p>	<p>G7 M2 Topic B: Multiplication and Division of Integers and Rational Numbers</p>

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	<p>7.NS.A.3 Solve problems involving the four arithmetic operations with rational numbers.</p>	<p>G7 M2 Lesson 15: Multiplication and Division of Rational Numbers</p> <p>G7 M2 Lessons 18–19: Writing, Evaluating, and Finding Equivalent Expressions with Rational Numbers</p> <p>G7 M2 Lesson 20: Investments—Performing Operations with Rational Numbers</p>
<p>Expressions, Equations and Inequalities</p>	<p>Cluster: Use properties of operations to generate equivalent expressions.</p>	
	<p>7.EE1.A.1 Apply properties of operations to simplify and to factor linear algebraic expressions with rational coefficients.</p>	<p>G7 M3 Topic A: Use Properties of Operations to Generate Equivalent Expressions</p>
	<p>7.EE1.A.2 Understand how to use equivalent expressions to clarify quantities in a problem.</p>	<p>G7 M2 Lessons 18–19: Writing, Evaluating, and Finding Equivalent Expressions with Rational Numbers</p> <p>G7 M3 Lessons 3–4: Writing Products as Sums and Sums as Products</p>
	<p>Cluster: Solve problems using numerical and algebraic expressions and equations.</p>	
	<p>7.EE1.B.3 Solve multi-step problems posed with rational numbers.</p>	
	<p>a. Convert between equivalent forms of the same number.</p>	<p>G7 M2 Lesson 13: Converting Between Fractions and Decimals Using Equivalent Fractions</p> <p>G7 M2 Lesson 14: Converting Rational Numbers to Decimals Using Long Division</p>

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	b. Assess the reasonableness of answers using mental computation and estimation strategies.	G7 M3 Lessons 10–11: Angle Problems and Solving Equations Note: Students are encouraged to assess the reasonableness of their answers in a variety of problem solving situations.
	7.EE1.B.4 Write and/or solve linear equations and inequalities in one variable.	
	a. Write and/or solve equations of the form $x + p = q$ and $px = q$ in which p and q are rational numbers.	G6 M4 Topic G: Solving Equations G6 M4 Topic H: Applications of Equations
	b. Write and/or solve two-step equations of the form $px + q = r$ and $p(x + q) = r$, where p , q and r are rational numbers, and interpret the meaning of the solution in the context of the problem.	G7 M2 Lesson 17: Comparing Tape Diagram Solutions to Algebraic Solutions G7 M2 Lessons 22–23: Solving Equations Using Algebra G7 M3 Topic B: Solve Problems Using Expressions, Equations, and Inequalities G7 M4 Lesson 10: Simple Interest G7 M4 Lesson 11: Tax, Commissions, Fees, and Other Real-World Percent Applications G7 M4 Lesson 17: Mixture Problems

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	c. Write, solve and/or graph inequalities of the form $px + q > r$ or $px + q < r$, where p , q and r are rational numbers.	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
Geometry and Measurement	Cluster: Draw and describe geometrical figures and describe the relationships between them.	
	7.GM.A.1 Solve problems involving scale drawings of real objects and geometric figures, including computing actual lengths and areas from a scale drawing and reproducing the drawing at a different scale.	G7 M1 Topic D: Ratios of Scale Drawings G7 M4 Topic C: Scale Drawings
	7.GM.A.2 Use a variety of tools to construct geometric shapes.	
	a. Determine if provided constraints will create a unique triangle through construction.	G7 M6 Topic B: Constructing Triangles
	b. Construct special quadrilaterals given specific parameters.	G7 M6 Lesson 6: Drawing Geometric Shapes G7 M6 Lesson 7: Drawing Parallelograms
	7.GM.A.3 Describe two-dimensional cross sections of pyramids, prisms, cones and cylinders.	G7 M6 Topic C: Slicing Solids

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	7.GM.A.4 Understand the concepts of circles.	
	a. Analyze the relationships among the circumference, the radius, the diameter, the area and Pi in a circle.	G7 M3 Lesson 16: The Most Famous Ratio of All G7 M3 Lesson 17: The Area of a Circle G7 M3 Lesson 18: More Problems on Area and Circumference G7 M3 Lesson 20: Composite Area Problems
	b. Know and apply the formulas for circumference and area of circles to solve problems.	G7 M3 Lesson 16: The Most Famous Ratio of All G7 M3 Lesson 17: The Area of a Circle G7 M3 Lesson 18: More Problems on Area and Circumference G7 M3 Lesson 20: Composite Area Problems
	Cluster: Apply and extend previous understanding of angle measure, area and volume.	
	7.GM.B.5 Use angle properties to write and solve equations for an unknown angle.	G7 M3 Lessons 10–11: Angle Problems and Solving Equations G7 M6 Topic A: Unknown Angles

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	<p>7.GM.B.6 Understand the relationship between area, surface area and volume.</p>	
	<p>a. Find the area of triangles, quadrilaterals and other polygons composed of triangles and rectangles.</p>	<p>G7 M3 Lesson 19: Unknown Area Problems on the Coordinate Plane</p> <p>G7 M3 Lesson 20: Composite Area Problems</p> <p>G7 M6 Lesson 20: Real-World Area Problems</p> <p>G7 M6 Lesson 21: Mathematical Area Problems</p>
	<p>b. Find the volume and surface area of prisms, pyramids and cylinders.</p>	<p>G7 M3 Topic C: Use Equations and Inequalities to Solve Geometry Problems</p> <p>G7 M6 Topic D: Problems Involving Area and Surface Area</p> <p>G7 M6 Topic E: Problems Involving Volume</p>
<p>Data Analysis, Statistics and Probability</p>	<p>Cluster: Use random sampling to draw inferences about a population.</p>	
	<p>7.DSP.A.1 Understand that statistics can be used to gain information about a population by examining a sample of the population.</p>	
	<p>a. Understand that a sample is a subset of a population.</p>	<p>G7 M5 Topic C: Random Sampling and Estimating Population Characteristics</p>
	<p>b. Understand that generalizations from a sample are valid only if the sample is representative of the population.</p>	<p>G7 M5 Topic C: Random Sampling and Estimating Population Characteristics</p>

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	c. Understand that random sampling is used to produce representative samples and support valid inferences.	G7 M5 Topic C: Random Sampling and Estimating Population Characteristics
	7.DSP.A.2 Use data from multiple samples to draw inferences about a population and investigate variability in estimates of the characteristic of interest.	G7 M5 Topic C: Random Sampling and Estimating Population Characteristics
	Cluster: Draw informal comparative inferences about two populations.	
	7.DSP.B.3 Analyze different data distributions using statistical measures.	G7 M5 Topic D: Comparing Populations
	7.DSP.B.4 Compare the numerical measures of center, measures of frequency and measures of variability from two random samples to draw inferences about the population.	G7 M5 Topic D: Comparing Populations
	Cluster: Develop, use and evaluate probability models.	
	7.DSP.C.5 Investigate the probability of chance events.	
	a. Determine probabilities of simple events.	G7 M5 Topic A: Calculating and Interpreting Probabilities

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	b. Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring.	G7 M5 Lesson 1: Chance Experiments
	7.DSP.C.6 Investigate the relationship between theoretical and experimental probabilities for simple events.	
	a. Predict outcomes using theoretical probability.	G7 M5: Statistics and Probability
	b. Perform experiments that model theoretical probability.	G7 M5 Lesson 2: Estimating Probabilities by Collecting Data G7 M5 Lesson 4: Calculating Probabilities for Chance Experiments with Equally Likely Outcomes G7 M5 Lessons 10–11: Conducting a Simulation to Estimate the Probability of an Event
	c. Compare theoretical and experimental probabilities.	G7 M5 Lesson 8: The Difference Between Theoretical Probabilities and Estimated Probabilities G7 M5 Lesson 9: Comparing Estimated Probabilities to Probabilities Predicted by a Model

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	<p>7.DSP.C.7 Explain possible discrepancies between a developed probability model and observed frequencies.</p>	
	<p>a. Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events.</p>	<p>G7 M5 Lesson 4: Calculating Probabilities for Chance Experiments with Equally Likely Outcomes</p>
	<p>b. Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process.</p>	<p>G7 M5 Lesson 5: Chance Experiments with Outcomes That Are Not Equally Likely</p> <p>G7 M5 Lesson 8: The Difference Between Theoretical Probabilities and Estimated Probabilities</p> <p>G7 M5 Lesson 9: Comparing Estimated Probabilities to Probabilities Predicted by a Model</p> <p>G7 M5 Lesson 12: Applying Probability to Make Informed Decisions</p>
	<p>7.DSP.C.8 Find probabilities of compound events using organized lists, tables, tree diagrams and simulations.</p>	
	<p>a. Represent the sample space of a compound event.</p>	<p>G7 M5 Lesson 6: Using Tree Diagrams to Represent a Sample Space and to Calculate Probabilities</p> <p>G7 M5 Lesson 7: Calculating Probabilities of Compound Events</p>

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	b. Design and use a simulation to generate frequencies for compound events.	G7 M5 Lessons 10–11: Conducting a Simulation to Estimate the Probability of an Event