

## 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](http://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](http://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](http://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





# Oklahoma Academic Standards for Mathematics Correlation to *Eureka Math*<sup>™</sup>

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## GRADE 7 MATHEMATICS

The majority of the Grade 7 Oklahoma Academic Standards for Mathematics are fully covered by the Grade 7 *Eureka Math* curriculum. The areas where the Grade 7 Oklahoma Academic Standards for Mathematics and Grade 7 *Eureka Math* do not align 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 Oklahoma Academic Standards for Mathematics while still benefiting from the coherence and rigor of *Eureka Math*.

## INDICATORS

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

## Mathematical Actions and Processes

## Aligned Components of *Eureka Math*

### **Develop a Deep and Flexible Conceptual Understanding**

Demonstrate a deep and flexible conceptual understanding of mathematical concepts, operations, and relations while making mathematical and real-world connections. Students will develop an understanding of how and when to apply and use the mathematics they know to solve problems.

Lessons in every module engage students in making sense of problems and persevering in solving them as required by this standard. This Mathematical Action and Process is analogous to the CCSSM Standards for Mathematical Practice 1 and 2, which are specifically addressed in the following modules:

G7 M1: Ratios and Proportional Relationships

G7 M2: Rational Numbers

G7 M3: Expressions and Equations

G7 M4: Percent and Proportional Relationships

G7 M5: Statistics and Probability

G7 M6: Geometry

### **Develop Accurate and Appropriate Procedural Fluency**

Learn efficient procedures and algorithms for computations and repeated processes based on a strong sense of numbers. Develop fluency in addition, subtraction, multiplication, and division of numbers and expressions. Students will generate a sophisticated understanding of the development and application of algorithms and procedures.

Lessons in every module engage students in reasoning abstractly and quantitatively as required by this standard. This Mathematical Action and Process is analogous to the CCSSM Standards for Mathematical Practice 7 and 8, which are specifically addressed in the following modules:

G7 M2: Rational Numbers

G7 M3: Expressions and Equations

G7 M4: Percent and Proportional Relationships

G7 M6: Geometry

## Mathematical Actions and Processes

## Aligned Components of *Eureka Math*

### **Develop Strategies for Problem Solving**

Analyze the parts of complex mathematical tasks and identify entry points to begin the search for a solution. Students will select from a variety of problem solving strategies and use corresponding multiple representations (verbal, physical, symbolic, pictorial, graphical, tabular) when appropriate. They will pursue solutions to various tasks from real-world situations and applications that are often interdisciplinary in nature. They will find methods to verify their answers in context and will always question the reasonableness of solutions.

Lessons in every module engage students in constructing viable arguments and critiquing the reasoning of others as required by this standard. This Mathematical Action and Process is analogous to the CCSSM Standards for Mathematical Practice 1, 2, and 8, which are specifically addressed in the following modules:

G7 M1: Ratios and Proportional Relationships

G7 M2: Rational Numbers

G7 M3: Expressions and Equations

G7 M4: Percent and Proportional Relationships

G7 M5: Statistics and Probability

G7 M6: Geometry

### **Develop Mathematical Reasoning**

Explore and communicate a variety of reasoning strategies to think through problems. Students will apply their logic to critique the thinking and strategies of others to develop and evaluate mathematical arguments, including making arguments and counterarguments and making connections to other contexts.

Lessons in every module engage students in modeling with mathematics as required by this standard. This Mathematical Action and Process is analogous to the CCSSM Standards for Mathematical Practice 3, which is specifically addressed in the following modules:

G7 M5: Statistics and Probability

G7 M6: Geometry

## Mathematical Actions and Processes

## Aligned Components of *Eureka Math*

<p><b>Develop a Productive Mathematical Disposition</b></p> <p>Hold the belief that mathematics is sensible, useful and worthwhile. Students will develop the habit of looking for and making use of patterns and mathematical structures. They will persevere and become resilient, effective problem solvers.</p>	<p>Lessons in every module engage students in using appropriate tools strategically as required by this standard. This Mathematical Action and Process is analogous to the CCSSM Standards for Mathematical Practice 1, 7, and 8, which are specifically addressed in the following modules:</p> <p>G7 M1: Ratios and Proportional Relationships</p> <p>G7 M2: Rational Numbers</p> <p>G7 M3: Expressions and Equations</p> <p>G7 M4: Percent and Proportional Relationships</p> <p>G7 M6: Geometry</p>
<p><b>Develop the Ability to Make Conjectures, Model, and Generalize</b></p> <p>Make predictions and conjectures and draw conclusions throughout the problem solving process based on patterns and the repeated structures in mathematics. Students will create, identify, and extend patterns as a strategy for solving and making sense of problems.</p>	<p>Lessons in every module engage students in attending to precision as required by this standard. This Mathematical Action and Process is analogous to the CCSSM Standards for Mathematical Practice 4, 7, and 8, which are specifically addressed in the following modules:</p> <p>G7 M2: Rational Numbers</p> <p>G7 M3: Expressions and Equations</p> <p>G7 M4: Percent and Proportional Relationships</p> <p>G7 M5: Statistics and Probability</p> <p>G7 M6: Geometry</p>

## Mathematical Actions and Processes

## Aligned Components of *Eureka Math*

### **Develop the Ability to Communicate Mathematically**

Students will discuss, write, read, interpret and translate ideas and concepts mathematically. As they progress, students' ability to communicate mathematically will include their increased use of mathematical language and terms and analysis of mathematical definitions.

Lessons in every module engage students in looking for and making use of structure as required by this standard. This Mathematical Action and Process is analogous to the CCSSM Standards for Mathematical Practice 3 and 6, which are specifically addressed in the following modules:

G7 M2: Rational Numbers

G7 M3: Expressions and Equations

G7 M4: Percent and Proportional Relationships

G7 M5: Statistics and Probability

G7 M6: Geometry

Strand	Objectives for Mathematical Content	Aligned Components of <i>Eureka Math</i>
Number & Operations	<b>Standard: Read, write, represent, and compare rational numbers, expressed as integers, fractions, and decimals.</b>	
	<b>7.N.1.1</b> Know that every rational number can be written as the ratio of two integers or as a terminating or repeating decimal.	G7 M2 Lesson 14: Converting Rational Numbers to Decimals Using Long Division
	<b>7.N.1.2</b> Compare and order rational numbers expressed in various forms using the symbols $<$ , $>$ , and $=$ .	G6 M3 Lesson 11: Absolute Value—Magnitude and Distance  G6 M3 Lesson 12: The Relationship Between Absolute Value and Order  G6 M3 Lesson 13: Statements of Order in the Real World
	<b>7.N.1.3</b> Recognize and generate equivalent representations of rational numbers, including equivalent fractions.	G7 M2 Lesson 13: Converting Between Fractions and Decimals Using Equivalent Fractions  G7 M2 Lesson 14: Converting Rational Numbers to Decimals Using Long Division  G7 M4 Lesson 1: Percent
	<b>Standard: Calculate with integers and rational numbers, with and without positive integer exponents, to solve real-world and mathematical problems; explain the relationship between absolute value of a rational number and the distance of that number from zero.</b>	
	<b>7.N.2.1</b> Estimate solutions to multiplication and division of integers in order to assess the reasonableness of results.	<i>Eureka Math</i> does not explicitly teach estimation with multiplication and division of integers.

Strand	Objectives for Mathematical Content	Aligned Components of <i>Eureka Math</i>
	<p><b>7.N.2.2</b> Illustrate multiplication and division of integers using a variety of representations.</p>	G7 M2 Topic B: Multiplication and Division of Integers and Rational Numbers
	<p><b>7.N.2.3</b> Solve real-world and mathematical problems involving addition, subtraction, multiplication and division of rational numbers; use efficient and generalizable procedures including but not limited to standard algorithms.</p>	G7 M2: Rational Numbers
	<p><b>7.N.2.4</b> Raise integers to positive integer exponents.</p>	G8 M1 Lesson 1: Exponential Notation
	<p><b>7.N.2.5</b> Solve real-world and mathematical problems involving calculations with rational numbers and positive integer exponents.</p>	G7 M2: Rational Numbers
	<p><b>7.N.2.6</b> Explain the relationship between the absolute value of a rational number and the distance of that number from zero on a number line. Use the symbol for absolute value.</p>	<p>G6 M3 Lesson 11: Absolute Value—Magnitude and Distance</p> <p>G6 M3 Lesson 13: Statements of Order in the Real World</p>



Strand	Objectives for Mathematical Content	Aligned Components of <i>Eureka Math</i>
Algebraic Reasoning & Algebra	<p><b>Standard: Understand the concept of proportionality in real-world and mathematical situations, and distinguish between proportional and other relationships.</b></p>	
	<p><b>7.A.1.1</b> Describe that the relationship between two variables, <math>x</math> and <math>y</math>, is proportional if it can be expressed in the form <math>y/x = k</math> or <math>y = kx</math>; distinguish proportional relationships from other relationships, including inversely proportional relationships (<math>xy = k</math> or <math>y = k/x</math>).</p>	<p>G7 M1: Ratios and Proportional Relationships</p> <p>Note: Supplemental material is necessary to incorporate inversely proportional relationships.</p>
	<p><b>7.A.1.2</b> Recognize that the graph of a proportional relationship is a line through the origin and the coordinate <math>(1, r)</math>, where both <math>r</math> and the slope are the unit rate (constant of proportionality, <math>k</math>).</p>	<p>G7 M1 Lesson 10: Interpreting Graphs of Proportional Relationships</p>
	<p><b>Standard: Recognize proportional relationships in real-world and mathematical situations; represent these and other relationships with tables, verbal descriptions, symbols, and graphs; solve problems involving proportional relationships and interpret results in the original context.</b></p>	
	<p><b>7.A.2.1</b> Represent proportional relationships with tables, verbal descriptions, symbols, and graphs; translate from one representation to another. Determine and compare the unit rate (constant of proportionality, slope, or rate of change) given any of these representations.</p>	<p>G7 M1: Ratios and Proportional Relationships</p>

Strand	Objectives for Mathematical Content	Aligned Components of <i>Eureka Math</i>
	<p><b>7.A.2.2</b> Solve multi-step problems involving proportional relationships involving distance-time, percent increase or decrease, discounts, tips, unit pricing, similar figures, and other real-world and mathematical situations.</p>	<p>G7 M1 Topic C: Ratios and Rates Involving Fractions</p> <p>G7 M4: Percent and Proportional Relationships</p>
	<p><b>7.A.2.3</b> Use proportional reasoning to solve real-world and mathematical problems involving ratios.</p>	<p>G7 M1 Topic C: Ratios and Rates Involving Fractions</p>
	<p><b>7.A.2.4</b> Use proportional reasoning to assess the reasonableness of solutions.</p>	<p>G7 M1: Ratios and Proportional Relationships</p>
<p><b>Standard: Represent and solve linear equations and inequalities.</b></p>		
	<p><b>7.A.3.1</b> Write and solve problems leading to linear equations with one variable in the form <math>px + q = r</math> and <math>p(x + q) = r</math>, where <math>p</math>, <math>q</math>, and <math>r</math> are rational numbers.</p>	<p>G7 M2 Lesson 17: Comparing Tape Diagram Solutions to Algebraic Solutions</p> <p>G7 M2 Lessons 22–23: Solving Equations Using Algebra</p> <p>G7 M3 Topic B: Solve Problems Using Expressions, Equations, and Inequalities</p> <p>G7 M4 Lesson 10: Simple Interest</p> <p>G7 M4 Lesson 11: Tax, Commissions, Fees, and Other Real-World Percent Applications</p> <p>G7 M4 Lesson 17: Mixture Problems</p>

Strand	Objectives for Mathematical Content	Aligned Components of <i>Eureka Math</i>
	<p><b>7.A.3.2</b> Represent, write, solve, and graph problems leading to linear inequalities with one variable in the form <math>x + p &gt; q</math> and <math>x + p &lt; q</math>, where <math>p</math> and <math>q</math> are nonnegative rational numbers.</p>	<p>G7 M3 Lesson 12: Properties of Inequalities</p> <p>G7 M3 Lesson 13: Inequalities</p> <p>G7 M3 Lesson 14: Solving Inequalities</p> <p>G7 M3 Lesson 15: Graphing Solutions to Inequalities</p>
	<p><b>7.A.3.3</b> Represent real-world or mathematical situations using equations and inequalities involving variables and rational numbers.</p>	<p>G7 M3 Topic B: Solve Problems Using Expressions, Equations, and Inequalities</p>
<p><b>Standard: Use order of operations and properties of operations to generate equivalent numerical and algebraic expressions containing rational numbers and grouping symbols; evaluate such expressions.</b></p>		
	<p><b>7.A.4.1</b> Use properties of operations (limited to associative, commutative, and distributive) to generate equivalent numerical and algebraic expressions containing rational numbers, grouping symbols and whole number exponents.</p>	<p>G7 M3 Topic A: Use Properties of Operations to Generate Equivalent Expressions</p>
	<p><b>7.A.4.2</b> Apply understanding of order of operations and grouping symbols when using calculators and other technologies.</p>	<p><i>Eureka Math</i> does not explicitly teach using order of operations and grouping symbols when using calculators or other technologies.</p>

Strand	Objectives for Mathematical Content	Aligned Components of <i>Eureka Math</i>
<b>Geometry &amp; Measurement</b>	<b>Standard: Develop and understand the concept of surface area and volume of rectangular prisms.</b>	
	<b>7.GM.1.1</b> Using a variety of tools and strategies, develop the concept that surface area of a rectangular prism with rational-valued edge lengths can be found by wrapping the figure with same-sized square units without gaps or overlap. Use appropriate measurements such as $\text{cm}^2$ .	G6 M5 Topic D: Nets and Surface Area G7 M3 Lessons 21–22: Surface Area G7 M3 Lessons 25–26: Volume and Surface Area G7 M6 Lessons 23–24: Surface Area
<b>7.GM.1.2</b> Using a variety of tools and strategies, develop the concept that the volume of rectangular prisms with rational-valued edge lengths can be found by counting the total number of same-sized unit cubes that fill a shape without gaps or overlaps. Use appropriate measurements such as $\text{cm}^3$ .	G6 M5 Topic C: Volume of Right Rectangular Prisms G7 M3 Lessons 23–24: The Volume of a Right Prism G7 M3 Lessons 25–26: Volume and Surface Area G7 M6 Topic E: Problems Involving Volume	

Strand	Objectives for Mathematical Content	Aligned Components of <i>Eureka Math</i>
	<b>Standard: Determine the area of trapezoids and area and perimeter of composite figures.</b>	
	<p><b>7.GM.2.1</b> Develop and use the formula to determine the area of a trapezoid to solve problems.</p>	<p>G6 M5 Lesson 5: The Area of Polygons Through Composition and Decomposition</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>Note: Supplemental material is necessary to incorporate the development of the formula.</p>
	<p><b>7.GM.2.2</b> Find the area and perimeter of composite figures to solve real-world and mathematical problems.</p>	<p>G6 M5 Topic B: Polygons on the Coordinate Plane</p> <p>G7 M3 Lesson 18: More Problems on Area and Circumference</p> <p>G7 M3 Lesson 20: Composite Area Problems</p> <p>G7 M6 Lesson 20: Real-World Area Problems</p> <p>G7 M6 Lesson 22: Area Problems with Circular Regions</p>

Strand	Objectives for Mathematical Content	Aligned Components of <i>Eureka Math</i>
	<p><b>Standard: Use reasoning with proportions and ratios to determine measurements, justify formulas, and solve real-world and mathematical problems involving circles and related geometric figures.</b></p>	
	<p><b>7.GM.3.1</b> Demonstrate an understanding of the proportional relationship between the diameter and circumference of a circle and that the unit rate (constant of proportionality) is <math>\pi</math> and can be approximated by rational numbers such as <math>\frac{22}{7}</math> and 3.14.</p>	<p>G7 M3 Lesson 16: The Most Famous Ratio of All</p>
	<p><b>7.GM.3.2</b> Calculate the circumference and area of circles to solve problems in various contexts, in terms of <math>\pi</math> and using approximations for <math>\pi</math>.</p>	<p>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</p>
	<p><b>Standard: Analyze the effect of dilations, translations, and reflections on the attributes of two-dimensional figures on and off the coordinate plane.</b></p>	
	<p><b>7.GM.4.1</b> Describe the properties of similarity, compare geometric figures for similarity, and determine scale factors resulting from dilations.</p>	<p>G7 M1 Topic D: Ratios of Scale Drawings G7 M4 Topic C: Scale Drawings G8 M3: Similarity</p>

Strand	Objectives for Mathematical Content	Aligned Components of <i>Eureka Math</i>
	<p><b>7.GM.4.2</b> Apply proportions, ratios, and scale factors to solve problems involving scale drawings and determine side lengths and areas of similar triangles and rectangles.</p>	<p>G7 M1 Topic D: Ratios of Scale Drawings G7 M4 Topic C: Scale Drawings</p>
	<p><b>7.GM.4.3</b> Graph and describe translations and reflections of figures on a coordinate plane and determine the coordinates of the vertices of the figure after the transformation.</p>	<p>G8 M2: The Concept of Congruence</p>
<p><b>Data &amp; Probability</b></p>	<p><b>Standard: Display and analyze data in a variety of ways.</b></p>	
	<p><b>7.D.1.1</b> Design simple experiments, collect data and calculate measures of central tendency (mean, median, and mode) and spread (range). Use these quantities to draw conclusions about the data collected and make predictions.</p>	<p>G6 M6: Statistics Note: Supplemental material is necessary to address mode and range.</p>
	<p><b>7.D.1.2</b> Use reasoning with proportions to display and interpret data in circle graphs (pie charts) and histograms. Choose the appropriate data display and know how to create the display using a spreadsheet or other graphing technology.</p>	<p>G6 M6: Statistics Note: Supplemental material is necessary to address circle graphs, spreadsheets, and other graphing technology.</p>

Strand	Objectives for Mathematical Content	Aligned Components of <i>Eureka Math</i>
	<p><b>Standard: Calculate probabilities and reason about probabilities using proportions to solve real-world and mathematical problems.</b></p>	
	<p><b>7.D.2.1</b> Determine the theoretical probability of an event using the ratio between the size of the event and the size of the sample space; represent probabilities as percents, fractions and decimals between 0 and 1.</p>	<p>G7 M5 Topic A: Calculating and Interpreting Probabilities G7 M5 Lessons 10–11: Conducting a Simulation to Estimate the Probability of an Event</p>
	<p><b>7.D.2.2</b> Calculate probability as a fraction of sample space or as a fraction of area. Express probabilities as percents, decimals and fractions.</p>	<p>G7 M5 Topic A: Calculating and Interpreting Probabilities G7 M5 Lesson 11: Conducting a Simulation to Estimate the Probability of an Event  Note: Supplemental material is necessary to address geometric probability.</p>
	<p><b>7.D.2.3</b> Use proportional reasoning to draw conclusions about and predict relative frequencies of outcomes based on probabilities.</p>	<p>G7 M5: Statistics and Probability</p>