EUREKA MATH²®

GREAT MINDS™

Grade 7 | Oklahoma Academic Standards for Mathematics Correlation to *Eureka Math²*®

When the original *Eureka Math*® curriculum was released, it quickly became the most widely used K–5 mathematics curriculum in the country. Now, the Great Minds® teacher–writers have created *Eureka Math²*®, a groundbreaking new curriculum that helps teachers deliver exponentially better math instruction while still providing students with the same deep understanding of and fluency in math. *Eureka Math²* carefully sequences mathematical content to maximize vertical alignment—a principle tested and proven to be essential in students' mastery of math—from kindergarten through high school.

While this innovative new curriculum includes all the trademark *Eureka Math* aha moments that have been delighting students and teachers for years, it also boasts these exciting new features:

Teachability

Eureka Math² employs streamlined materials that allow teachers to plan more efficiently and focus their energy on delivering high-quality instruction that meets the individual needs of their students. Differentiation suggestions, slide decks, digital interactives, and multiple forms of assessment are just a few of the resources built right into the teacher materials.

Accessibility

Eureka Math² incorporates Universal Design for Learning principles so all learners can access the mathematics and take on challenging math concepts. Student supports are built into the instructional design and are clearly identified in the *Teach* book. Further, the curriculum carries a focus on readability. By eliminating unnecessary words and using simple, clear sentences, the *Eureka Math²* teacher–writers have created one of the most readable mathematics curricula on the market. The curriculum's readability and accessibility help all students see themselves as mathematical thinkers and doers who are fully capable of owning their mathematics learning.

Digital Engagement

The digital elements of *Eureka Math²* add to students' engagement with the math. The curriculum provides teachers with digital slides for each lesson. In addition, each grade level includes wordless videos that spark students' interest and curiosity. Students at all levels work through mathematical explorations that help lead to their own mathematical discoveries. Digital lessons and videos provide opportunities for students to wonder, explore, and make sense of mathematics, which contributes to the development of a strong, positive mathematical identity.

Mathematical Actions and Processes	Aligned Components of *Eureka Math²*
Develop a Deep and Flexible Conceptual Understanding	Lessons in every module engage students in mathematical actions and processes.
Develop Accurate and Appropriate Procedural Fluency	Lessons in every module engage students in mathematical actions and processes.
Develop Strategies for Problem Solving	Lessons in every module engage students in mathematical actions and processes.
Develop Mathematical Reasoning	Lessons in every module engage students in mathematical actions and processes.
Develop a Productive Mathematical Disposition	Lessons in every module engage students in mathematical actions and processes.
Develop the Ability to Make Conjectures, Model, and Generalize	Lessons in every module engage students in mathematical actions and processes.
Develop the Ability to Communicate Mathematically	Lessons in every module engage students in mathematical actions and processes.

Numbers & Operations

7.N.1 Read, write, represent, and compare rational numbers, expressed as integers, fractions, and decimals. Explain and apply the concept of absolute value.

Oklahoma Academic Standards for Mathematics	Aligned Components of *Eureka Math²*
7.N.1.1 Compare and order rational numbers expressed in various forms using the symbols <, >, and =.	6 M3 Lesson 5: Comparing Rational Numbers 6 M3 Lesson 6: Ordering Rational Numbers 6 M3 Lesson 8: Absolute Value and Order
7.N.1.2 Recognize and generate equivalent representations of rational numbers, including equivalent fractions.	7 M2 Lesson 19: Rational Numbers as Decimals, Part 1 7 M2 Lesson 20: Rational Numbers as Decimals, Part 2 8 M4 Lesson 5: An Interesting Application of Linear Equations, Part 1 8 M4 Lesson 6: An Interesting Application of Linear Equations, Part 2
7.N.1.3 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. Apply the concept of absolute value to model and solve problems.	6 M3 Lesson 7: Absolute Value 6 M3 Lesson 8: Absolute Value and Order 7 M2 Lesson 7: What Subtraction Means

Numbers & Operations

7.N.2 Calculate with rational numbers, with and without positive integer exponents, to model and solve mathematical problems.

Oklahoma Academic Standards for Mathematics	Aligned Components of *Eureka Math²*
7.N.2.1 Estimate solutions to multiplication and division of integers in order to assess the reasonableness of results.	*Supplemental material is necessary to address this objective.*
7.N.2.2 Illustrate multiplication and division of integers using a variety of representations.	7 M2 Lesson 13: Understanding Multiples of Negative Numbers 7 M2 Lesson 14: Understanding the Product of Two Negative Numbers 7 M2 Lesson 17: Understanding Negative Dividends 7 M2 Lesson 18: Understanding Negative Divisors
7.N.2.3 Multiply and divide integers in a variety of situations; use efficient and generalizable procedures, including standard algorithms.	7 M2 Lesson 15: Multiplying Rational Numbers 7 M2 Lesson 18: Understanding Negative Divisors
7.N.2.4 Raise rational numbers (integers, fractions, and decimals) to positive integer exponents.	7 M2 Lesson 16: Exponential Expressions with Rational Numbers

Oklahoma Academic Standards for Mathematics	Aligned Components of *Eureka Math²*
7.N.2.5 Model and solve problems using rational numbers involving addition, subtraction, multiplication, division, and positive integer exponents.	7 M2 Lesson 25: Writing and Evaluating Expressions with Rational Numbers, Part 1 7 M2 Lesson 26: Writing and Evaluating Expressions with Rational Numbers, Part 2 7 M3 Lesson 9: Solving Equations to Determine Unknown Angle Measures 7 M3 Lesson 10: Problem Solving with Unknown Angle Measures 7 M3 Lesson 11: Dominoes and Dominoes 7 M3 Lesson 16: Using Equations to Solve Rate Problems 7 M3 Lesson 17: Using Equations to Solve Problems 7 M4 Topic D: Area and Surface Area 7 M4 Lesson 24: Volume of Prisms 7 M4 Lesson 25: Volume of Composite Solids 7 M4 Lesson 26: Designing a Fish Tank 7 M5 Topic D: Applications of Percent

Algebraic Reasoning & Algebra

7.A.1 Explain the concept of proportionality in mathematical models and situations and distinguish between proportional and non-proportional relationships.

Oklahoma Academic Standards for Mathematics	Aligned Components of *Eureka Math²*
7.A.1.1 Identify a relationship between two varying quantities, x and y, as proportional if it can be expressed in the form $\frac{y}{x} = k$ or $y = kx$; distinguish proportional relationships from non-proportional relationships.	7 M1 Lesson 2: Exploring Tables of Proportional Relationships 7 M1 Lesson 3: Identifying Proportional Relationships in Tables 7 M1 Lesson 8: Relating Representations of Proportional Relationships 7 M1 Lesson 10: Applying Proportional Reasoning 7 M1 Lesson 11: Constant Rates 7 M1 Lesson 12: Multi-Step Ratio Problems, Part 1

Oklahoma Academic Standards for Mathematics	Aligned Components of *Eureka Math²*
7.A.1.1 *continued*	7 M1 Lesson 13: Multi-Step Ratio Problems, Part 2
	7 M5 Lesson 1: Proportionality and Scale Factor
	7 M5 Lesson 4: Proportion and Percent
	7 M5 Lesson 5: Common Denominators or Common Numerators
7.A.1.2 Recognize that the graph of a proportional relationship is a line through the origin and the coordinate $(1, r)$, where r is the slope and the unit rate (constant of proportionality, k).	7 M1 Lesson 4: Exploring Graphs of Proportional Relationships
	7 M1 Lesson 5: Analyzing Graphs of Proportional Relationships
	7 M1 Lesson 9: Comparing Proportional Relationships
	8 M4 Lesson 15: Comparing Proportional Relationships
	8 M4 Lesson 16: Proportional Relationships and Slope

Algebraic Reasoning & Algebra

7.A.2 Identify and justify proportional relationships using mathematical models and situations; solve problems involving proportional relationships and interpret results in the original context.

Oklahoma Academic Standards for Mathematics	Aligned Components of *Eureka Math²*
7.A.2.1 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.	7 M1 Lesson 4: Exploring Graphs of Proportional Relationships 7 M1 Lesson 5: Analyzing Graphs of Proportional Relationships 7 M1 Lesson 6: Identifying Proportional Relationships in Written Descriptions 7 M1 Lesson 8: Relating Representations of Proportional Relationships 7 M1 Lesson 9: Comparing Proportional Relationships 7 M1 Lesson 11: Constant Rates 7 M1 Lesson 12: Multi-Step Ratio Problems, Part 1 7 M1 Lesson 13: Multi-Step Ratio Problems, Part 2 7 M1 Lesson 16: Using a Scale Factor 7 M1 Lesson 18: Relating Areas of Scale Drawings
7.A.2.2 Solve multi-step problems with proportional relationships (e.g., distance-time, percent increase or decrease, discounts, tips, unit pricing, mixtures and concentrations, similar figures, other mathematical situations).	7 M1 Lesson 7: Handstand Sprint 7 M1 Lesson 10: Applying Proportional Reasoning 7 M1 Lesson 11: Constant Rates 7 M1 Lesson 12: Multi-Step Ratio Problems, Part 1 7 M1 Lesson 13: Multi-Step Ratio Problems, Part 2 7 M5 Lesson 2: Racing for Percents 7 M5 Lesson 3: Percent as a Rate per 100 7 M5 Lesson 4: Proportion and Percent 7 M5 Lesson 5: Common Denominators or Common Numerators 7 M5 Topic B: Part of 100

Oklahoma Academic Standards for Mathematics	Aligned Components of *Eureka Math²*
7.A.2.2 *continued*	7 M5 Lesson 10: Percent Increase
	7 M5 Lesson 11: Percent Decrease
	7 M5 Lesson 12: More Discounts
	7 M5 Lesson 13: What Is the Best Deal?
	7 M5 Topic D: Applications of Percent
	7 M5 Lesson 20: Making Money, Day 1
	7 M5 Lesson 21: Making Money, Day 2
	7 M5 Lesson 22: Making Mixtures
	7 M5 Lesson 23: Percents of Percents
7.A.2.3 Use proportional reasoning to solve problems involving ratios.	7 M1 Lesson 7: Handstand Sprint
	7 M1 Lesson 10: Applying Proportional Reasoning
	7 M1 Lesson 11: Constant Rates
	7 M1 Lesson 12: Multi-Step Ratio Problems, Part 1
	7 M1 Lesson 13: Multi-Step Ratio Problems, Part 2
7.A.2.4 Use proportional reasoning to assess the reasonableness of solutions.	*Supplemental material is necessary to address this objective.*

Algebraic Reasoning & Algebra
7.A.3 Represent mathematical situations using equations and inequalities involving variables and rational numbers.

Oklahoma Academic Standards for Mathematics	Aligned Components of *Eureka Math²*
7.A.3.1 Write and solve problems leading to linear equations with one variable in the form $px + q = r$ and $p(x + q) = r$, where p, q, and r are rational numbers.	7 M3 Lesson 7: Angle Relationships and Unknown Angle Measures 7 M3 Lesson 8: Strategies to Determine Unknown Angle Measures 7 M3 Lesson 12: Solving Equations Algebraically and Arithmetically 7 M3 Lesson 13: Solving Equations—Puzzles 7 M3 Lesson 14: Solving Equations—Scavenger Hunt 7 M3 Lesson 15: Solving Equations Fluently 7 M3 Lesson 16: Using Equations to Solve Rate Problems
7.A.3.2 Represent, write, solve, and graph problems leading to linear inequalities with one variable in the form $x + p > q$ and $x + p < q$, where p, and q are nonnegative rational numbers.	7 M3 Topic D: Inequalities

Algebraic Reasoning & Algebra

7.A.4 Use order of operations and properties of operations to generate and evaluate equivalent numerical and algebraic expressions.

Oklahoma Academic Standards for Mathematics	Aligned Components of *Eureka Math²*
7.A.4.1 Use properties of operations (associative, commutative, and distributive) to generate equivalent numerical and algebraic expressions containing rational numbers, grouping symbols and whole number exponents.	7 M3 Lesson 2: The Distributive Property and the Tabular Model 7 M3 Lesson 4: Adding and Subtracting Expressions 7 M3 Lesson 5: Factoring Expressions 7 M3 Lesson 6: Comparing Expressions
7.A.4.2 Evaluate numerical expressions using calculators and other technologies and justify solutions using order of operations and grouping symbols.	*Supplemental material is necessary to address this objective.*

Geometry & Measurement
7.GM.1 Develop and understand the concept of surface area and volume of rectangular prisms with rational-valued edge lengths.

Oklahoma Academic Standards for Mathematics	Aligned Components of *Eureka Math²*
7.GM.1.1 Recognize that the surface area of a rectangular prism can be found by finding the area of each component of the net of that figure. Know that rectangular prisms of different dimensions can have the same surface area.	6 M5 Lesson 12: From Nets to Surface Area 6 M5 Lesson 13: Surface Area in Real-World Situations 6 M5 Lesson 14: Designing a Box
7.GM.1.2 Using a variety of tools and strategies, develop the concept that surface area of a rectangular prism can be found by wrapping the figure with same-sized square units without gaps or overlap. Use appropriate measurements (e.g., cm^2).	6 M5 Lesson 12: From Nets to Surface Area
7.GM.1.3 Using a variety of tools and strategies, develop the concept that the volume of rectangular prisms can be found by counting the total number of same-sized unit cubes that fill a shape without gaps or overlaps. Use appropriate measurements (e.g., cm^3).	6 M5 Topic D: Volumes of Right Rectangular Prisms

Geometry & Measurement

7.GM.2 Use mathematical models and problems to calculate and justify the area of trapezoids and the area and perimeter of composite figures with rational measurements.

Oklahoma Academic Standards for Mathematics	Aligned Components of *Eureka Math²*
7.GM.2.1 Develop and use the formula to determine the area of a trapezoid.	6 M5 Lesson 7: Areas of Trapezoids and Other Polygons
7.GM.2.2 Find the area and perimeter of composite figures.	6 M5 Lesson 5: Perimeter and Area in the Coordinate Plane 6 M5 Lesson 8: Areas of Composite Figures in Real-World Situations 7 M4 Lesson 14: Composite Figures with Circular Regions 7 M4 Lesson 16: Solving Area Problems by Composition and Decomposition

Geometry & Measurement

7.GM.3 Use mathematical models and reasoning with proportions and ratios to determine measurements, justify formulas, and solve problems.

Oklahoma Academic Standards for Mathematics	Aligned Components of *Eureka Math²*
7.GM.3.1 Solve problems that require the conversion of weights and capacities within the same measurement systems using appropriate units.	6 M1 Lesson 19: Using Rates to Convert Units

Oklahoma Academic Standards for Mathematics	Aligned Components of *Eureka Math²*
7.GM.3.2 Demonstrate an understanding of the proportional relationship between the diameter and circumference of a circle and that the unit rate (constant of proportionality) is pi (π) and can be approximated by rational numbers such as $\frac{22}{7}$ and 3.14.	7 M4 Lesson 10: The Outside of a Circle 7 M4 Lesson 11: The Inside of a Circle 7 M4 Lesson 12: Exploring the Area and Circumference of a Circle
7.GM.3.3 Calculate the circumference and area of circles to solve problems in various contexts, in terms of pi (π) and using approximations for pi (π).	7 M4 Lesson 10: The Outside of a Circle 7 M4 Lesson 11: The Inside of a Circle 7 M4 Lesson 12: Exploring the Area and Circumference of a Circle 7 M4 Lesson 13: Finding Areas of Circular Regions 7 M4 Lesson 14: Composite Figures with Circular Regions 7 M4 Lesson 15: Watering a Lawn

Geometry & Measurement

7.GM.4 Analyze the effect of translations, reflections, rotations, and dilations on the attributes of two-dimensional figures on and off the coordinate plane.

Oklahoma Academic Standards for Mathematics	Aligned Components of *Eureka Math²*
7.GM.4.1 Describe the properties of similarity, compare geometric figures for similarity, and determine scale factors resulting from dilations.	8 M3 Topic C: Similar Figures

Oklahoma Academic Standards for Mathematics	Aligned Components of *Eureka Math²*
7.GM.4.2 Apply proportions, ratios, and scale factors to solve problems involving scale drawings and to determine side lengths and areas of similar triangles and rectangles.	7 M1 Lesson 16: Using a Scale Factor 7 M1 Lesson 17: Finding Actual Distances from a Scale Drawing 7 M1 Lesson 18: Relating Areas of Scale Drawings 7 M1 Lesson 19: Scale and Scale Factor 8 M3 Lesson 14: Using Similar Figures to Find Unknown Side Lengths 8 M3 Lesson 15: Applications of Similar Figures 8 M3 Lesson 16: Similar Right Triangles
7.GM.4.3 Graph and describe translations (with directional and algebraic instructions), reflections across the x- and y-axes, and rotations in 90° increments about the origin of figures on a coordinate plane, and determine the coordinates of the vertices of a figure after a transformation.	8 M2 Lesson 4: Translations and Reflections on the Coordinate Plane 8 M2 Lesson 6: Rotations on the Coordinate Plane 8 M2 Lesson 9: Ordering Sequences of Rigid Motions

Data & Probability

7.D.1 Interpret and analyze data, creating the most appropriate display, using a variety of tools.

Oklahoma Academic Standards for Mathematics	Aligned Components of *Eureka Math²*
7.D.1.1 Design simple experiments, collect data, and calculate measures of center (mean, median, and mode) and spread (range and interquartile range). Use these quantities to draw conclusions about the data collected and make predictions.	6 M6 Topic B: Mean and Mean Absolute Deviation 6 M6 Topic C: Median, Interquartile Range, and Box Plots 6 M6 Lesson 18: Connecting Graphical Representations and Summary Measures 6 M6 Lesson 19: Comparing Data Distributions 6 M6 Lesson 20: Choosing a Measure of Center 6 M6 Lesson 21: Comparing Measures of Variability 6 M6 Lesson 22: Presenting Statistical Projects *Supplemental material is necessary to address mode.*
7.D.1.2 Use reasoning with proportions to display and interpret data in circle graphs (pie charts) and histograms.	6 M6 Lesson 5: Comparing Data Displays *Supplemental material is necessary to address circle graphs.*
7.D.1.3 Use technology to create and analyze box plots.	*Supplemental material is necessary to address this objective.*

Data & Probability
7.D.2 Calculate and use proportional reasoning with probabilities to model and solve mathematical problems.

Oklahoma Academic Standards for Mathematics	Aligned Components of *Eureka Math²*
7.D.2.1 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.	7 M6 Lesson 4: Theoretical Probability 7 M6 Lesson 7: The Law of Large Numbers
7.D.2.2 Calculate probability as a fraction of sample space or as a fraction of area. Express probabilities as percents, decimals and fractions.	7 M6 Lesson 2: Empirical Probability 7 M6 Lesson 4: Theoretical Probability 7 M6 Lesson 5: Multistage Experiments 7 M6 Lesson 6: Outcomes That Are Not Equally Likely 7 M6 Lesson 7: The Law of Large Numbers 7 M6 Lesson 8: Picking Blue
7.D.2.3 Use proportional reasoning to draw conclusions about and predict relative frequencies of outcomes based on theoretical probabilities.	7 M6 Lesson 2: Empirical Probability 7 M6 Lesson 4: Theoretical Probability