Grade 8 | 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

PA.N.1 Read, write, compare, classify, and represent real numbers, and use them to solve problems in various contexts.

Oklahoma Academic Standards for Mathematics	Aligned Components of *Eureka Math²*
PA.N.1.1 Develop and apply the properties of integer exponents, including $a^0 = 1$ (with $a \neq 0$), to generate equivalent numerical and algebraic expressions.	8 M1 Topic B: Properties and Definitions of Exponents
PA.N.1.2 Express and compare approximations of very large and very small numbers using scientific notation.	8 M1 Lesson 1: Large and Small Positive Numbers 8 M1 Lesson 2: Comparing Large Numbers 8 M1 Lesson 3: Time to Be More Precise—Scientific Notation 8 M1 Lesson 7: Making Sense of the Exponent of 0 8 M1 Lesson 11: Small Positive Numbers in Scientific Notation
PA.N.1.3 Multiply and divide numbers expressed in scientific notation and express the answer in scientific notation.	8 M1 Lesson 12: Operations with Numbers in Scientific Notation 8 M1 Lesson 13: Applications with Numbers in Scientific Notation 8 M1 Lesson 15: Get to the Point
PA.N.1.4 Compare and order real numbers; locate real numbers on a number line. Identify the square roots of perfect squares to 400 or, if it is not a perfect square root, locate it as an irrational number between two consecutive positive integers.	8 M1 Lesson 16: Perfect Squares and Perfect Cubes 8 M1 Lesson 17: Solving Equations with Squares and Cubes 8 M1 Lesson 20: Square Roots 8 M1 Topic E: Irrational Numbers

Algebraic Reasoning & Algebra

PA.A.1 Explain the concept of function in mathematical situations and distinguish between the concepts of linear and nonlinear functions.

Oklahoma Academic Standards for Mathematics	Aligned Components of *Eureka Math²*
PA.A.1.1 Recognize that a function is a relationship between an independent variable and a dependent variable in which the value of the independent variable determines the value of the dependent variable.	8 M6 Lesson 1: Motion and Speed 8 M6 Lesson 2: Definition of a Function 8 M6 Lesson 4: More Examples of Functions 8 M6 Lesson 5: Graphs of Functions and Equations
PA.A.1.2 Use linear functions to represent and model mathematical situations.	8 M6 Lesson 6: Linear Functions and Rate of Change 8 M6 Lesson 7: Interpreting Rate of Change and Initial Value 8 M6 Lesson 25: Applications of Volume
PA.A.1.3 Identify a function as linear if it can be expressed in the form $y = mx + b$ or if its graph is a non-vertical straight line.	8 M6 Lesson 3: Linear Functions and Proportionality 8 M6 Lesson 6: Linear Functions and Rate of Change 8 M6 Lesson 10: Graphs of Nonlinear Functions

Algebraic Reasoning & Algebra

PA.A.2 Identify and justify linear functions using mathematical models and situations; solve problems involving linear functions and interpret results in the original context.

Oklahoma Academic Standards for Mathematics	Aligned Components of *Eureka Math²*
PA.A.2.1 Represent linear functions with tables, verbal descriptions, symbols, and graphs; translate from one representation to another.	8 M6 Topic A: Functions 8 M6 Lesson 6: Linear Functions and Rate of Change 8 M6 Lesson 7: Interpreting Rate of Change and Initial Value 8 M6 Lesson 8: Comparing Functions 8 M6 Lesson 10: Graphs of Nonlinear Functions
PA.A.2.2 Identify, describe, and analyze linear relationships between two variables.	8 M6 Lesson 6: Linear Functions and Rate of Change 8 M6 Lesson 7: Interpreting Rate of Change and Initial Value 8 M6 Lesson 25: Applications of Volume
PA.A.2.3 Identify graphical properties of linear functions, including slope and intercepts. Know that the slope equals the rate of change, and that the y-intercept is zero when the function represents a proportional relationship.	8 M4 Lesson 15: Comparing Proportional Relationships 8 M4 Lesson 16: Proportional Relationships and Slope 8 M6 Lesson 6: Linear Functions and Rate of Change 8 M6 Lesson 7: Interpreting Rate of Change and Initial Value
PA.A.2.4 Predict the effect on the graph of a linear function when the slope or y-intercept changes. Use appropriate tools to examine these effects.	*Supplemental material is necessary to address this objective.*

Oklahoma Academic Standards for Mathematics	Aligned Components of *Eureka Math²*
PA.A.2.5 Solve problems involving linear functions and interpret results in the original context.	8 M6 Lesson 6: Linear Functions and Rate of Change 8 M6 Lesson 7: Interpreting Rate of Change and Initial Value 8 M6 Lesson 25: Applications of Volume

Algebraic Reasoning & Algebra

PA.A.3 Generate equivalent numerical and algebraic expressions and use algebraic properties to evaluate expressions.

Oklahoma Academic Standards for Mathematics	Aligned Components of *Eureka Math²*
PA.A.3.1 Use substitution to simplify and evaluate algebraic expressions.	6 M4 Lesson 8: Algebraic Expressions with Addition, Subtraction, Multiplication, and Division 6 M4 Lesson 11: Modeling Real-World Situations with Expressions 6 M4 Lesson 12: Applying Properties to Multiplication and Division Expressions
PA.A.3.2 Justify steps in generating equivalent expressions by combining like terms and using order of operations (to include grouping symbols). Identify the properties used, including the properties of operations (associative, commutative, and distributive).	7 M3 Topic A: Equivalent Expressions

Algebraic Reasoning & Algebra

PA.A.4 Represent and solve problems using mathematical models and situations with equations and inequalities involving linear expressions.

Oklahoma Academic Standards for Mathematics	Aligned Components of *Eureka Math²*
PA.A.4.1 Solve mathematical problems using linear equations with one variable where there could be one, infinitely many, or no solutions. Represent situations using linear equations and interpret solutions in the original context.	8 M4 Lesson 7: Linear Equations with More Than One Solution 8 M4 Lesson 8: Another Possible Number of Solutions 8 M4 Lesson 9: Writing Linear Equations 8 M4 Lesson 10: Using Linear Equations to Solve Real-World Problems
PA.A.4.2 Represent, write, solve, and graph problems leading to linear inequalities with one variable in the form $px + q > r$ and $px + q < r$, where p, q, and r are rational numbers.	7 M3 Topic D: Inequalities
PA.A.4.3 Represent real-world situations using equations and inequalities involving one variable.	7 M3 Lesson 21: Solving Two-Step Inequalities 7 M3 Lesson 22: Solving Problems Involving Inequalities 7 M3 Lesson 23: Inequalities vs. Equations 8 M4 Lesson 4: Using Linear Equations to Solve Problems 8 M4 Lesson 10: Using Linear Equations to Solve Real-World Problems 8 M4 Lesson 11: Planning a Trip

Geometry & Measurement

PA.GM.1 Apply the Pythagorean theorem to solve problems involving triangles.

Oklahoma Academic Standards for Mathematics	Aligned Components of *Eureka Math²*
PA.GM.1.1 Justify the Pythagorean theorem using measurements, diagrams, or dynamic software to solve problems in two dimensions involving right triangles.	8 M2 Lesson 17: Proving the Pythagorean Theorem
PA.GM.1.2 Use the Pythagorean theorem to find the distance between any two points in a coordinate plane.	8 M2 Lesson 20: Distance in the Coordinate Plane 8 M2 Lesson 22: On the Right Path

Geometry & Measurement

PA.GM.2 Justify and use formulas to calculate surface area and volume of three-dimensional figures.

Oklahoma Academic Standards for Mathematics	Aligned Components of *Eureka Math²*
PA.GM.2.1 Calculate the surface area of a rectangular prism using decomposition or nets. Use appropriate units (e.g., cm^2).	7 M4 Lesson 17: Surface Area of Right Rectangular and Right Triangular Prisms 7 M4 Lesson 18: Surface Area of Right Prisms

Oklahoma Academic Standards for Mathematics	Aligned Components of *Eureka Math²*
PA.GM.2.2 Calculate the surface area of a cylinder, in terms of pi (π) and using approximations for pi (π), using decomposition or nets. Use appropriate units (e.g., cm^2).	7 M4 Lesson 19: Surface Area of Cylinders
PA.GM.2.3 Justify why base area (B) and height (h) in the formula $V = Bh$ are multiplied to find the volume of a rectangular prism. Use appropriate units (e.g., cm^3).	7 M4 Lesson 24: Volume of Prisms 7 M4 Lesson 25: Volume of Composite Solids 7 M4 Lesson 26: Designing a Fish Tank
PA.GM.2.4 Develop and use the formulas $V = \pi r^2 h$ and $V = Bh$ to determine the volume of right cylinders, in terms of π and using approximations for pi (π). Justify why base area (B) and height (h) are multiplied to find the volume of a right cylinder. Use appropriate units (e.g., cm^3).	8 M6 Lesson 22: Volume of Cylinders

Data & Probability

PA.D.1 Display and interpret data in a variety of ways, including using scatter plots and approximate lines of best fit. Use the line of best fit and average rate of change to make predictions and draw conclusions about data.

Oklahoma Academic Standards for Mathematics	Aligned Components of *Eureka Math²*
PA.D.1.1 Describe the impact that inserting or deleting a data point has on the mean and the median of a data set. Create data displays using technology to examine this impact.	*Supplemental material is necessary to address this standard.*
PA.D.1.2 Explain how outliers affect measures of center and spread.	6 M6 Lesson 16: Interpreting Box Plots 6 M6 Lesson 18: Connecting Graphical Representations and Summary Measures
PA.D.1.3 Collect, display, and interpret data using scatter plots. Use the shape of the scatter plot to find the informal line of best fit, make statements about the average rate of change, and make predictions about values not in the original data set. Use appropriate titles, labels, and units.	8 M6 Topic C: Bivariate Numerical Data

Data & Probability

PA.D.2 Calculate experimental probabilities and reason about probabilities to model and solve problems.

Oklahoma Academic Standards for Mathematics	Aligned Components of *Eureka Math²*
PA.D.2.1 Calculate experimental probabilities and represent them as percents, fractions, and decimals between 0 and 1. Use experimental probabilities to predict relative frequencies when actual probabilities are unknown.	7 M6 Lesson 2: Empirical Probability 7 M6 Lesson 3: Outcomes of Chance 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
PA.D.2.2 Determine how samples are chosen (randomness) to draw and support conclusions about generalizing a sample to a population, including identifying limitations and biases.	7 M6 Lesson 13: Variability Between Samples 7 M6 Lesson 14: Sampling Variability When Estimating a Population Mean 7 M6 Lesson 15: Sampling Variability and the Effect of Sample Size 7 M6 Lesson 16: Sampling Variability When Estimating a Population Proportion
PA.D.2.3 Define, compare, and contrast the probabilities of dependent and independent events.	*Supplemental material is necessary to address this objective.*