## Grade 6 | Kentucky Mathematics Course Standards Correlation to Eureka Math ${ }^{\mathbf{2 ®}}$

When the original Eureka Math ${ }^{\circledR}$ curriculum was released, it quickly became the most widely used $\mathrm{K}-5$ mathematics curriculum in the country. Now, the Great Minds ${ }^{\circledR}$ teacher-writers have created Eureka Math ${ }^{2 ®}$, 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 Math ${ }^{2}$ 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 Math ${ }^{2}$ employs streamlined materials that allow teachers to plan more efficiently and focus their energy on delivering highquality 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 Math ${ }^{2}$ 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 Math ${ }^{2}$ 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.

## Standards for Mathematical Practice

## Aligned Components of Eureka Math ${ }^{2}$

| MP. 1 <br> Make sense of problems and persevere in solving them. | Lessons in every module engage students in mathematical practices. These are indicated in margin notes included with every lesson. |
| :---: | :---: |
| MP. 2 <br> Reason abstractly and quantitatively. | Lessons in every module engage students in mathematical practices. These are indicated in margin notes included with every lesson. |
| MP. 3 <br> Construct viable arguments and critique the reasoning of others. | Lessons in every module engage students in mathematical practices. These are indicated in margin notes included with every lesson. |
| MP. 4 <br> Model with mathematics. | Lessons in every module engage students in mathematical practices. These are indicated in margin notes included with every lesson. |
| MP. 5 <br> Use appropriate tools strategically. | Lessons in every module engage students in mathematical practices. These are indicated in margin notes included with every lesson. |
| MP. 6 <br> Attend to precision. | Lessons in every module engage students in mathematical practices. These are indicated in margin notes included with every lesson. |
| MP. 7 <br> Look for and make use of structure. | Lessons in every module engage students in mathematical practices. These are indicated in margin notes included with every lesson. |
| MP. 8 <br> Look for and express regularity in repeated reasoning. | Lessons in every module engage students in mathematical practices. These are indicated in margin notes included with every lesson. |

## Ratios and Proportional Relationships

## Understanding ratio concepts and use ratio reasoning to solve problems.

Kentucky Mathematics Course
Standards

Aligned Components of Eureka Math ${ }^{2}$

## KY.6.RP. 1

Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities.

6 M1 Lesson 2: Introduction to Ratios
6 M1 Lesson 3: Ratios and Tape Diagrams
6 M1 Lesson 4: Exploring Ratios by Making Batches
6 M1 Lesson 5: Equivalent Ratios
6 M1 Lesson 8: Addition Patterns in Ratio Relationships
6 M1 Lesson 10: Multiplicative Reasoning in Ratio Relationships
6 M1 Lesson 11: Applications of Ratio Reasoning

6 M1 Lesson 15: The Value of the Ratio
6 M1 Lesson 16: Speed
6 M1 Lesson 17: Rates
6 M1 Lesson 18: Comparing Rates
6 M1 Lesson 19: Using Rates to Convert Units
6 M1 Lesson 20: Solving Rate Problems

6 M1 Lesson 1: Jars of Jelly Beans
6 M1 Lesson 3: Ratios and Tape Diagrams
6 M1 Lesson 4: Exploring Ratios by Making Batches
6 M1 Lesson 5: Equivalent Ratios
6 M1 Lesson 6: Ratio Tables and Double Number Lines
6 M1 Lesson 8: Addition Patterns in Ratio Relationships
6 M1 Lesson 9: Multiplication Patterns in Ratio Relationships
6 M1 Lesson 10: Multiplicative Reasoning in Ratio Relationships

## Kentucky Mathematics Course <br> Standards

## Aligned Components of Eureka Math ${ }^{2}$

| KY.6.RP. 3 continued | 6 M1 Lesson 11: Applications of Ratio Reasoning <br> 6 M4 Lesson 22: Relationship Between Two Variables <br> 6 M4 Lesson 23: Graphs of Ratio Relationships |
| :---: | :---: |
| KY.6.RP.3.a <br> Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables and plot the pairs of values on the coordinate plane. Use tables to compare ratios. | 6 M1 Topic B: Collections of Equivalent Ratios 6 M1 Topic C: Comparing Ratio Relationships 6 M1 Lesson 16: Speed 6 M1 Lesson 18: Comparing Rates |
| KY.6.RP.3.b <br> Solve rate problems including those involving unit pricing and constant speed. | 6 M1 Topic D: Rates <br> 6 M5 Lesson 8: Areas of Composite Figures in Real-World Situations <br> 6 M5 Lesson 13: Surface Area in Real-World Situations |
| KY.6.RP.3.c <br> Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities. | 6 M1 Lesson 19: Using Rates to Convert Units <br> 6 M1 Lesson 20: Solving Rate Problems <br> 6 M1 Lesson 21: Solving Multi-Step Rate Problems |

## The Number System

Apply and extend previous understandings of multiplication and division to divide fractions by fractions.

## Kentucky Mathematics Course <br> Standards

## Aligned Components of Eureka Math ${ }^{2}$

## KY.6.NS. 1

Interpret and compute quotients of fractions and solve word problems involving division of fractions by fractions.

6 M2 Topic B: Dividing Fractions
6 M2 Topic C: Dividing Fractions Fluently

## The Number System

## Compute fluently with multi-digit numbers and find common factors and multiples.

## Kentucky Mathematics Course Standards <br> Aligned Components of Eureka Math²

| KY.6.NS.2 <br> Fluently divide multi-digit numbers using <br> an algorithm. | 6 M 2 Lesson 17: Partial Quotients |
| :--- | :--- |
| KY.6.NS.2.a Lesson 18: The Standard Division Algorithm <br> Convert a rational number to a decimal <br> using long division. | 7 M 2 Lesson 19: Expressing Quotients as Decimals |
|  | 7 M 2 Lesson 19: Rational Numbers as Decimals, Part 1 |
| KY.6.NS.2.b |  |
| Know that the decimal form of a <br> rational number 21: Comparing and Ordering Rational Numbers <br> or eventually repeats. | 7 M 2 Lesson 19: Rational Numbers as Decimals, Part 1 |

## Kentucky Mathematics Course Standards

## Aligned Components of Eureka Math ${ }^{2}$

## KY.6.NS. 3

Fluently add, subtract, multiply and divide multi-digit decimals using an algorithm for each operation.

## KY.6.NS. 4

Use the distributive property to express a sum of two whole numbers 1-100 with a common factor as a multiple of a sum of two whole numbers with no common factor.

6 M2 Lesson 13: Decimal Addition and Subtraction
6 M2 Lesson 14: Patterns in Multiplying Decimals
6 M2 Lesson 15: Decimal Multiplication
6 M2 Topic F: Decimal Division

6 M2 Topic A: Factors, Multiples, and Divisibility
6 M4 Lesson 13: The Distributive Property
6 M4 Lesson 14: Using the Distributive Property to Factor Expressions

## The Number System

Apply and extend previous understanding of numbers to the system of rational numbers.

## Kentucky Mathematics Course <br> Standards

## Aligned Components of Eureka Math ${ }^{2}$

## KY.6.NS. 5

Understand that positive and negative numbers are used together to describe quantities having opposite directions or values; use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation.

## 6 M3 Lesson 1: Positive and Negative Numbers

6 M3 Lesson 4: Rational Numbers in Real-World Situations

## Kentucky Mathematics Course Standards

## Aligned Components of Eureka Math ${ }^{2}$

## KY.6.NS. 6

Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes, using appropriate range and intervals, to represent points on the line and in the plane, that include negative numbers and coordinates.

## KY.6.NS.6.a

Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize 0 is its own opposite and the opposite of a positive number is a negative, and the opposite of a negative number is a positive, such as $-(-3)=3$

## KY.6.NS.6.b

Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane.

This standard is fully addressed by the lessons aligned to its subsections.

## 6 M3 Lesson 2: Integers

6 M3 Lesson 3: Rational Numbers
6 M3 Lesson 4: Rational Numbers in Real-World Situations

## 6 M3 Lesson 3: Rational Numbers

6 M3 Lesson 11: Plotting Points in the Coordinate Plane
6 M3 Lesson 12: Reflections in the Coordinate Plane
6 M3 Lesson 13: Constructing the Coordinate Plane
6 M3 Topic D: Solving Problems in the Coordinate Plane

## Kentucky Mathematics Course Standards

## Aligned Components of Eureka Math ${ }^{2}$

| KY.6.NS.6.c | 6 M 3 Lesson 10: The Four Quadrants of the Coordinate Plane |
| :--- | :--- |
| Understand signs of numbers in ordered <br> pairs as indicating locations in quadrants <br> of the coordinate plane; recognize the <br> similarity between whole numbers, their <br> negative opposites and their positions <br> on a number line, ordered pairs differ <br> only by signs and their locations on one <br> or both axes. | 6 M 3 Lesson 11: Plotting Points in the Coordinate Plane |
| KY.6.NS.7 | 6 M 3 Lesson 13: Constructing the Coordinate Plane |
| Understand ordering and absolute value <br> of rational numbers. | 6 M 3 Lesson 6: Ordering Rational Numbers |
| KY.6.NS.7.a | 6 M 3 Lesson 8: Absolute Value and Order |
| Interpret statements of inequality <br> as statements about the relative <br> position of two numbers on a number <br> line diagram. | 6 M 3 Lesson 5: Comparing Rational Numbers |

## Kentucky Mathematics Course Standards

## Aligned Components of Eureka Math ${ }^{2}$

## KY.6.NS.7.c

Understand the absolute value of a rational number as its distance from 0 on the number line; interpret absolute value as magnitude for a positive or negative quantity in a real-world situation.

## KY.6.NS.7.d

Distinguish comparisons of absolute value from statements about order.

## KY.6.NS. 8

Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.

## Expressions and Equations

## Apply and extend previous understandings of arithmetic to algebraic expressions.

## Kentucky Mathematics Course <br> Standards

## Aligned Components of Eureka Math ${ }^{2}$

## KY.6.EE. 1

Write and evaluate numerical expressions involving whole-number exponents.

## Kentucky Mathematics Course Standards

## Aligned Components of Eureka Math ${ }^{2}$

## KY.6.EE. 2

Write, read and evaluate expressions in which letters stand for numbers.

## KY.6.EE.2.a

Write expressions that record operations with numbers and with letters standing for numbers.

## KY.6.EE.2.b

Identify parts of an expression using mathematical terms (sums, term, product, factor, quotient, coefficient); view one or more parts of an expression in a single entity.

## KY.6.EE.2.c

Evaluate expressions for specific values of their variables, including values that are non-negative rational numbers. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including whole-number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations).

This standard is fully addressed by the lessons aligned to its subsections.

6 M4 Lesson 7: Algebraic Expressions with Addition and Subtraction
6 M4 Lesson 8: Algebraic Expressions with Addition, Subtraction, Multiplication, and Division 6 M4 Lesson 9: Addition and Subtraction Expressions from Real-World Situations

6 M4 Lesson 7: Algebraic Expressions with Addition and Subtraction
6 M4 Lesson 8: Algebraic Expressions with Addition, Subtraction, Multiplication, and Division
6 M4 Lesson 9: Addition and Subtraction Expressions from Real-World Situations
6 M4 Lesson 11: Modeling Real-World Situations with 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
6 M4 Lesson 17: Equations and Solutions
6 M5 Lesson 1: The Area of a Parallelogram
6 M5 Lesson 3: The Area of a Triangle
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
6 M5 Lesson 16: Applying Volume Formulas

## Kentucky Mathematics Course Standards

## KY.6.EE. 3

Apply the properties of operations to generate equivalent expressions.

6 M4 Topic C: Equivalent Expressions Using the Properties of Operations
6 M5 Lesson 4: Areas of Triangles in Real-World Situations
6 M5 Lesson 6: Problem Solving with Area in the Coordinate Plane
6 M5 Lesson 7: Area of Trapezoids and Other Polygons
6 M4 Topic C: Equivalent Expressions Using the Properties of Operations
6 M5 Lesson 7: Area of Trapezoids and Other Polygons
6 M5 Lesson 12: From Nets to Surface Area
6 M5 Lesson 17: Problem Solving with Volume

## Expressions and Equations

## Reason about and solve one-variable equations and inequalities.

## Kentucky Mathematics Course Standards

Aligned Components of Eureka Math ${ }^{2}$

## KY.6.EE. 5

Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.

6 M4 Lesson 17: Equations and Solutions
6 M4 Lesson 18: Inequalities and Solutions
6 M4 Lesson 19: Solving Equations with Addition and Subtraction
6 M4 Lesson 20: Solving Equations with Multiplication and Division

## Kentucky Mathematics Course Standards

## Aligned Components of Eureka Math ${ }^{2}$

## KY.6.EE. 6

Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or depending on the purpose at hand, any number in a specified set.

6 M4 Lesson 9: Addition and Subtraction Expressions from Real-World Situations
6 M4 Lesson 10: Multiplication and Division Expressions from Real-World Situations
6 M4 Lesson 11: Modeling Real-World Situations with Expressions
6 M4 Lesson 16: Equivalent Algebraic Expressions

## 6 M4 Lesson 17: Equations and Solutions

6 M4 Lesson 19: Solving Equations with Addition and Subtraction
6 M4 Lesson 20: Solving Equations with Multiplication and Division
6 M4 Lesson 21: Solving Problems with Equations
6 M5 Lesson 2: The Area of a Right Triangle

## KY.6.EE. 8

6 M4 Lesson 18: Inequalities and Solutions

## Expressions and Equations

## Represent and analyze quantitative relationships between dependent and independent variables.

## Kentucky Mathematics Course <br> Standards <br> Aligned Components of Eureka Math ${ }^{2}$

## KY.6.EE. 9

Use variables to represent two quantities in a real-world problem that changes in relationship to one another;

## KY.6.EE.9.a

Appropriately recognize one quantity as the dependent variable and the other as the independent variable.

## KY.6.EE.9.b

Write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable.

## KY.6.EE.9.c

Analyze the relationship between the dependent and independent variables using graphs and tables and relate these to the question.

## Geometry

## Solve real-world and mathematical problems involving area, surface area, and volume.

## Kentucky Mathematics Course <br> Standards

## Aligned Components of Eureka Math ${ }^{2}$

## KY.6.G. 1

Find the area of right triangles, other triangles, special quadrilaterals and polygons by composing into rectangles or decomposing into triangles and quadrilaterals; apply these techniques in the context of solving real-world and mathematical problems.

## KY.6.G. 2

Find the volume of a right rectangular prism with rational number edge lengths. Apply the formulas $V=l w h$ and $V=B h$ to find volumes of right rectangular prisms with rational number edge lengths in the context of solving real-world and mathematical problems.

## KY.6.G. 3

Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving real-world and mathematical problems.

6 M5 Topic A: Areas of Polygons
6 M5 Topic B: Problem Solving with Area

6 M5 Topic D: Volumes of Right Rectangular Prisms

## 6 M5 Lesson 5: Perimeter and Area in the Coordinate Plane

6 M5 Lesson 6: Problem Solving with Area in the Coordinate Plane

## Kentucky Mathematics Course Standards

## Aligned Components of Eureka Math²

## KY.6.G. 4

Classify three-dimensional figures including cubes, prisms, pyramids, cones and spheres.

## Statistics and Probability

## Develop understanding of the process of statistical reasoning.

Kentucky Mathematics Course<br>Standards

Aligned Components of Eureka Math ${ }^{2}$

| KY.6.SP.O <br> Apply the four-step investigative process <br> for statistical reasoning. | This standard is fully addressed by the lessons aligned to its subsections. |
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| KY.6.SP.0.a | 6 M 6 Lesson 1: Posing Statistical Questions |
| Formulate Questions: Formulate a <br> statistical question as one that anticipates <br> variability and can be answered with data. | 6 M 6 Lesson 2: Describing a Data Distribution <br> 6 M 6 Topic D: Answering Statistical Questions by Analyzing Data |
| KY.6.SP.0.b | 6 M 6 Lesson 1: Posing Statistical Questions |
| Collect Data: Design and use a plan to a Data Display |  |
| collect appropriate data to answer a |  |
| statistical question. |  |

## Kentucky Mathematics Course Standards

## Aligned Components of Eureka Math ${ }^{2}$

## KY.6.SP.O.c

Analyze Data: Select appropriate graphical methods and numerical measures to analyze data by displaying variability within a group, comparing individual to individual and comparing individual to group.

## KY.6.SP.O.d

Interpret Results: Draw logical conclusions and make generalizations from the data based on the original question.

6 M6 Lesson 2: Describing a Data Distribution
6 M6 Topic D: Answering Statistical Questions by Analyzing Data

## 6 M6 Lesson 6: Selecting a Data Display

6 M6 Topic D: Answering Statistical Questions by Analyzing Data

## Statistics and Probability

Develop understanding of statistical variability.

## Kentucky Mathematics Course Standards

## KY.6.SP. 1

Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers.

Aligned Components of Eureka Math ${ }^{2}$

6 M6 Lesson 6: Selecting a Data Display
6 M6 Lesson 17: Developing a Statistical Project

## Kentucky Mathematics Course Standards

## Aligned Components of Eureka Math ${ }^{2}$

## KY.6.SP. 2

Understand that a set of numerical data collected to answer a statistical question has a distribution which can be described by its center, spread and overall shape.

## KY.6.SP. 3

Recognize that a measure of center for a numerical data set summarizes all of its values with a single number to describe a typical value, while a measure of variation describes how the values in the distribution vary.

6 M6 Lesson 2: Describing a Data Distribution<br>6 M6 Lesson 3: Creating a Dot Plot<br>6 M6 Lesson 4: Creating a Histogram<br>6 M6 Lesson 9: Variability in a Data Distribution<br>6 M6 Lesson 14: Using a Box Plot to Summarize a Distribution<br>6 M6 Lesson 18: Connecting Graphical Representations and Summary Measures<br>6 M6 Topic B: Mean and Mean Absolute Deviation<br>6 M6 Lesson 12: Using the Median to Describe the Center<br>6 M6 Lesson 13: Using the Interquartile Range to Describe Variability<br>6 M6 Lesson 15: More Practice with Box Plots<br>6 M6 Lesson 16: Interpreting Box Plots<br>6 M6 Lesson 19: Comparing Data Distributions<br>6 M6 Lesson 22: Presenting Statistical Projects

## Statistics and Probability

## Summarize and describe distributions.

## Kentucky Mathematics Course <br> Standards

## Aligned Components of Eureka Math²

| KY.6.SP. 4 | 6 M6 Lesson 3: Creating a Dot Plot |
| :---: | :---: |
| Display the distribution of numerical data in plots on a number line, including dot plots, histograms and box plots. | 6 M6 Lesson 4: Creating a Histogram |
|  | 6 M6 Lesson 5: Comparing Data Displays |
|  | 6 M6 Lesson 6: Selecting a Data Display |
|  | 6 M6 Lesson 14: Using a Box Plot to Summarize a Distribution |
|  | 6 M6 Lesson 15: More Practice with Box Plots |
|  | 6 M6 Lesson 16: Interpreting Box Plots |
|  | 6 M6 Lesson 19: Comparing Data Distributions |
|  | 6 M6 Lesson 22: Presenting Statistical Projects |
| KY.6.SP. 5 | This standard is fully addressed by the lessons aligned to its subsections. |
| Summarize numerical data sets in relation to their context, such as by: |  |
| KY.6.SP.5.a | 6 M6 Lesson 2: Describing a Data Distribution |
| Reporting the number of observations. |  |
| KY.6.SP.5.b | 6 M6 Lesson 1: Posing Statistical Questions |
| Describing the nature of the attribute under investigation, including how it was measured and its units of measurement. | 6 M6 Lesson 5: Comparing Data Displays |
|  | 6 M6 Lesson 17: Developing a Statistical Project |
|  | 6 M6 Lesson 21: Comparing Measures of Variability |

## Kentucky Mathematics Course Standards

## Aligned Components of Eureka Math²

| KY.6.SP.5.c |
| :--- |
| Determining quantitative measures of |
| center (median and/or mean) to describe |
| distribution of numerical data. |
|  |
| KY.6.SP.5.d |
| Describing distributions of numerical |
| data qualitatively relating to shape |
| (using terms such as cluster, mode(s), |
| gap, symmetric, uniform, skewed-left, |
| skewed-right and the presence of |
| outliers) and quantitatively relating |
| to spread/variability (using terms such |
| as range and interquartile range). |
| KY.6.SP.5.e |
| Relating the choice of measures of center |
| and variability to the shape of the data |
| distribution. |

