



# Grade 6 | North Carolina Standard Course of Study–Mathematics Correlation to Eureka Math<sup>2TM</sup>

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 Math*<sup>2™</sup>, 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*<sup>2</sup> 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<sup>2</sup> 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 Math*<sup>2</sup> 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<sup>2</sup>

Lessons in every module engage students in mathematical practices.  These are indicated in margin notes included with every lesson.
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### **Ratio and Proportional Relationships**

Understand ratio concepts and use ratio reasoning to solve problems.

# North Carolina Standard Course of Study-Mathematics

### Aligned Components of Eureka Math<sup>2</sup>

NC.6.RP.1	6 M1 Lesson 2: Introduction to Ratios
Understand the concept of a ratio and use ratio	6 M1 Lesson 3: Ratios and Tape Diagrams
language to:	6 M1 Lesson 4: Exploring Ratios by Making Batches
<ul> <li>Describe a ratio as a multiplicative relationship between two quantities.</li> </ul>	6 M1 Lesson 5: Equivalent Ratios
•	6 M1 Lesson 8: Addition Patterns in Ratio Relationships
<ul> <li>Model a ratio relationship using a variety of representations.</li> </ul>	6 M1 Lesson 10: Multiplicative Reasoning in Ratio Relationships
'	6 M1 Lesson 11: Applications of Ratio Reasoning
NC.6.RP.2	6 M1 Lesson 15: The Value of the Ratio
Understand that ratios can be expressed	6 M1 Lesson 16: Speed
as equivalent unit ratios by finding and interpreting both unit ratios in context.	6 M1 Lesson 17: Rates
both unit ratios in context.	6 M1 Lesson 18: Comparing Rates
	6 M1 Lesson 19: Using Rates to Convert Units
	6 M1 Lesson 20: Solving Rate Problems

### Aligned Components of Eureka Math<sup>2</sup>

#### NC.6.RP.3

Use ratio reasoning with equivalent whole-number ratios to solve real-world and mathematical problems by:

- Creating and using a table to compare ratios.
- Finding missing values in the tables.
- Using a unit ratio.
- Converting and manipulating measurements using given ratios.
- Plotting the pairs of values on the coordinate plane.

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 Topic B: Collections of Equivalent Ratios

6 M1 Topic C: Comparing Ratio Relationships

6 M1 Topic D: Rates

6 M4 Lesson 22: Relationship between Two Variables

6 M4 Lesson 23: Graphs of Ratio Relationships

6 M5 Lesson 8: Areas of Composite Figures in Real-World Situations

6 M5 Lesson 13: Surface Area in Real-World Situations

#### NC.6.RP.4

Use ratio reasoning to solve real-world and mathematical problems with percents by:

- Understanding and finding a percent of a quantity as a ratio per 100.
- Using equivalent ratios, such as benchmark percents (50%, 25%, 10%, 5%, 1%), to determine a part of any given quantity.
- Finding the whole, given a part and the percent.

6 M1 Topic E: Percents

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### **The Number System**

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

## North Carolina Standard Course of Study-Mathematics

### Aligned Components of Eureka Math<sup>2</sup>

NC.6.NS.1	6 M2 Topic B: Dividing Fractions
Use visual models and common denominators to:	6 M2 Topic C: Dividing Fractions Fluently
<ul> <li>Interpret and compute quotients of fractions.</li> </ul>	
<ul> <li>Solve real-world and mathematical problems involving division of fractions.</li> </ul>	

#### **The Number System**

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

## North Carolina Standard Course of Study-Mathematics

### Aligned Components of Eureka Math<sup>2</sup>

NC.6.NS.2 Fluently divide using long division with a minimum of a four-digit dividend and interpret the quotient and remainder in context.	6 M2 Lesson 17: Partial Quotients 6 M2 Lesson 18: The Standard Division Algorithm 6 M2 Lesson 19: Expressing Quotients as Decimals
NC.6.NS.3  Apply and extend previous understandings of decimals to develop and fluently use the standard algorithms for addition, subtraction, multiplication and division of decimals.	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

### Aligned Components of Eureka Math<sup>2</sup>

#### NC.6.NS.4

Understand and use prime factorization and the relationships between factors to:

- Find the unique prime factorization for a whole number.
- Find the greatest common factor of two whole numbers less than or equal to 100.
- Use the greatest common factor and the distributive property to rewrite the sum of two whole numbers, each less than or equal to 100.
- Find the least common multiple of two whole numbers less than or equal to 12 to add and subtract fractions with unlike denominators.

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 understandings of numbers to the system of rational numbers.

# North Carolina Standard Course of Study-Mathematics

### Aligned Components of Eureka Math<sup>2</sup>

NC.6.NS.5	6 M3 Lesson 1: Positive and Negative Numbers
Understand and use rational numbers to:	6 M3 Lesson 4: Rational Numbers in Real-World Situations
<ul> <li>Describe quantities having opposite directions</li> </ul>	6 M3 Lesson 7: Absolute Value
or values.	6 M3 Lesson 8: Absolute Value and Order
<ul> <li>Represent quantities in real-world contexts, explaining the meaning of 0 in each situation.</li> </ul>	6 M3 Lesson 9: Interpreting Order and Distance in Real-World Situations
<ul> <li>Understand the absolute value of a rational number as its distance from 0 on the number line to:</li> </ul>	
<ul> <li>Interpret absolute value as magnitude for a positive or negative quantity in a real-world context.</li> </ul>	
- Distinguish comparisons of absolute value from statements about order.	
NC.6.NS.6	This standard is fully addressed by the lessons aligned to its subsections.
Understand rational numbers as points on the number line and as ordered pairs on a coordinate plane.	

### Aligned Components of Eureka Math<sup>2</sup>

NC.6.NS.6.a	6 M3 Lesson 2: Integers
On a number line:	6 M3 Lesson 3: Rational Numbers
<ul> <li>Recognize opposite signs of numbers</li> </ul>	6 M3 Lesson 4: Rational Numbers in Real-World Situations
as indicating locations on opposite sides of 0 and that the opposite of the opposite of a number	6 M3 Lesson 11: Plotting Points in the Coordinate Plane
is the number itself.	6 M3 Lesson 12: Reflections in the Coordinate Plane
Find and position rational numbers on a	6 M3 Lesson 13: Constructing the Coordinate Plane
horizontal or vertical number line.	6 M3 Topic D: Solving Problems in the Coordinate Plane
NC.6.NS.6.b	6 M3 Lesson 3: Rational Numbers
On a coordinate plane:	6 M3 Lesson 10: The Four Quadrants of the Coordinate Plane
<ul> <li>Understand signs of numbers in ordered pairs</li> </ul>	6 M3 Lesson 11: Plotting Points in the Coordinate Plane
as indicating locations in quadrants.	6 M3 Lesson 12: Reflections in the Coordinate Plane
<ul> <li>Recognize that when two ordered pairs differ only by signs, the locations of the points are</li> </ul>	6 M3 Lesson 13: Constructing the Coordinate Plane
related by reflections across one or both axes.	6 M3 Topic D: Solving Problems in the Coordinate Plane
• Find and position pairs of rational numbers on a	
coordinate plane.	
NC.6.NS.7	This standard is fully addressed by the lessons aligned to its subsections.
Understand ordering of rational numbers.	
NC.6.NS.7.a	6 M3 Lesson 5: Comparing Rational Numbers
Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram.	6 M3 Lesson 6: Ordering Rational Numbers

### Aligned Components of Eureka Math<sup>2</sup>

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NC.6.NS.7.b  Write, interpret, and explain statements of order for rational numbers in real-world contexts.	6 M3 Lesson 5: Comparing Rational Numbers 6 M3 Lesson 6: Ordering Rational Numbers
NC.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.	6 M3 Lesson 14: Modeling with the Coordinate Plane 6 M3 Topic D: Solving Problems in the Coordinate Plane 6 M5 Lesson 5: Perimeter and Area in the Coordinate Plane
<ul> <li>NC.6.NS.9</li> <li>Apply and extend previous understandings of addition and subtraction.</li> <li>Describe situations in which opposite quantities combine to make 0.</li> <li>Understand p + q as the number located a distance q from p, in the positive or negative direction depending on the sign of q. Show that a number and its additive inverse create a zero pair.</li> <li>Understand subtraction of integers as adding the additive inverse, p - q = p + (-q). Show that the distance between two integers on the number line is the absolute value of their difference.</li> <li>Use models to add and subtract integers from -20 to 20 and describe real-world contexts using sums and differences.</li> </ul>	7 M2 Topic A: Adding Rational Numbers 7 M2 Topic B: Subtracting Rational Numbers

### **Expressions and Equations**

Apply and extend previous understandings of arithmetic to algebraic expressions.

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### Aligned Components of Eureka Math<sup>2</sup>

NC.6.EE.1	6 M4 Topic A: Numerical Expressions
Write and evaluate numerical expressions, with and without grouping symbols, involving whole-number exponents.	
NC.6.EE.2	6 M4 Lesson 7: Algebraic Expressions with Addition and Subtraction
Write, read, and evaluate algebraic expressions.	6 M4 Lesson 8: Algebraic Expressions with Addition, Subtraction, Multiplication, and Division
<ul> <li>Write expressions that record operations with</li> </ul>	6 M4 Lesson 9: Addition and Subtraction Expressions from Real-World Situations
numbers and with letters standing for numbers.	6 M4 Lesson 11: Modeling Real-World Situations with Expressions
Identify parts of an expression using	6 M4 Lesson 12: Applying Properties to Multiplication and Division Expressions
mathematical terms and view one or more of those parts as a single entity.	6 M4 Lesson 17: Equations and Solutions
Evaluate expressions at specific values of their	6 M5 Lesson 1: The Area of a Parallelogram
variables using expressions that arise from	6 M5 Lesson 3: The Area of a Triangle
formulas used in real-world problems.	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
NC.6.EE.3	6 M4 Topic C: Equivalent Expressions Using the Properties of Operations
Apply the properties of operations to generate	6 M5 Lesson 4: Areas of Triangles in Real-World Situations
equivalent expressions without exponents.	6 M5 Lesson 6: Problem Solving with Area in the Coordinate Plane
	6 M5 Lesson 7: Area of Trapezoids and Other Polygons

### Aligned Components of Eureka Math<sup>2</sup>

NC.6.EE.4	6 M4 Topic C: Equivalent Expressions Using the Properties of Operations
Identify when two expressions are equivalent and	6 M5 Lesson 7: Area of Trapezoids and Other Polygons
justify with mathematical reasoning.	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.

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### Aligned Components of Eureka Math<sup>2</sup>

NC.6.EE.5	6 M4 Lesson 17: Equations and Solutions
Use substitution to determine whether a given number in a specified set makes an equation true.	<ul><li>6 M4 Lesson 18: Inequalities and Solutions</li><li>6 M4 Lesson 19: Solving Equations with Addition and Subtraction</li><li>6 M4 Lesson 20: Solving Equations with Multiplication and Division</li></ul>
NC.6.EE.6	6 M4 Lesson 9: Addition and Subtraction Expressions from Real-World Situations
Use variables to represent numbers and write expressions when solving a real-world or mathematical problem.	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
NC.6.EE.7	6 M4 Lesson 17: Equations and Solutions
Solve real-world and mathematical problems by writing and solving equations of the form:	6 M4 Lesson 19: Solving Equations with Addition and Subtraction
	6 M4 Lesson 20: Solving Equations with Multiplication and Division
• $x+p=q$ in which $p,q$ and $x$ are all nonnegative rational numbers; and,	6 M4 Lesson 21: Solving Problems with Equations
	6 M5 Lesson 2: The Area of a Right Triangle
• $p \cdot x = q$ for cases in which $p$ , $q$ and $x$ are all nonnegative rational numbers.	

#### **Expressions and Equations**

Reason about one variable inequalities.

## North Carolina Standard Course of Study-Mathematics

#### Aligned Components of Eureka Math<sup>2</sup>

#### **NC.6.EE.8**

Reason about inequalities by:

- Using substitution to determine whether a given number in a specified set makes an inequality true.
- Writing an inequality of the form x > c or x < c to represent a constraint or condition in a real-world or mathematical problem.
- Recognizing that inequalities of the form x > c or x < c have infinitely many solutions.
- Representing solutions of inequalities on number line diagrams.

6 M4 Lesson 18: Inequalities and Solutions

#### **Expressions and Equations**

Represent and analyze quantitative relationships between dependent and independent variables.

## North Carolina Standard Course of Study-Mathematics

### Aligned Components of Eureka Math<sup>2</sup>

#### NC.6.EE.9

Represent and analyze quantitative relationships by:

- Using variables to represent two quantities in a real-world or mathematical context that change in relationship to one another.
- Analyze the relationship between quantities in different representations (context, equations, tables, and graphs).

6 M4 Topic E: Relating Variables by Using Tables, Graphs, and Equations

#### **Geometry**

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

# North Carolina Standard Course of Study-Mathematics

### Aligned Components of Eureka Math<sup>2</sup>

#### NC.6.G.1

Create geometric models to solve real-world and mathematical problems to:

- Find the area of triangles by composing into rectangles and decomposing into right triangles.
- Find the area of special quadrilaterals and polygons by decomposing into triangles or rectangles.

6 M5 Topic A: Areas of Polygons

6 M5 Topic B: Problem Solving with Area

### Aligned Components of Eureka Math<sup>2</sup>

NC.6.G.2	6 M5 Topic D: Volumes of Right Rectangular Prisms
Apply and extend previous understandings of the volume of a right rectangular prism to find the volume of right rectangular prisms with fractional edge lengths. Apply this understanding to the context of solving real-world and mathematical problems.	
NC.6.G.3	6 M5 Lesson 5: Perimeter and Area in the Coordinate Plane
Use the coordinate plane to solve real-world and mathematical problems by:	6 M5 Lesson 6: Problem Solving with Area in the Coordinate Plane
<ul> <li>Drawing polygons in the coordinate plane given coordinates for the vertices.</li> </ul>	
<ul> <li>Using coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate.</li> </ul>	
NC.6.G.4	6 M5 Topic C: Nets and Surface Area
Represent right prisms and right pyramids using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures.  Apply these techniques in the context of solving real-world and mathematical problems.	6 M5 Lesson 19: Volume and Surface Area in Real-World Situations

### **Statistics and Probability**

Develop understanding of statistical variability.

# North Carolina Standard Course of Study-Mathematics

### Aligned Components of Eureka Math<sup>2</sup>

NC.6.SP.1	6 M6 Lesson 1: Posing Statistical Questions
Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers.	6 M6 Lesson 6: Selecting a Data Display
	6 M6 Lesson 17: Developing a Statistical Project
NC.6.SP.2	6 M6 Lesson 2: Describing a Data Distribution
Understand that a set of data collected to answer	6 M6 Lesson 3: Creating a Dot Plot
a statistical question has a distribution which can be described by its center, spread, and	6 M6 Lesson 4: Creating a Histogram
overall shape.	6 M6 Lesson 9: Variability in a Data Distribution
•	6 M6 Lesson 14: Using a Box Plot to Summarize a Distribution
	6 M6 Lesson 18: Connecting Graphical Representations and Summary Measures
NC.6.SP.3	6 M6 Topic B: Mean and Mean Absolute Deviation
Understand that both a measure of center and	6 M6 Lesson 12: Using the Median to Describe the Center
a description of variability should be considered when describing a numerical data set.	6 M6 Lesson 13: Using the Interquartile Range to Describe Variability
	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

### Aligned Components of *Eureka Math*<sup>2</sup>

#### NC.6.SP.3.a

Determine the measure of center of a data set and understand that it is a single number that summarizes all the values of that data set.

- Understand that a mean is a measure of center that represents a balance point or fair share of a data set and can be influenced by the presence of extreme values within the data set.
- Understand the median as a measure of center that is the numerical middle of an ordered data set.

6 M6 Topic B: Mean and Mean Absolute Deviation

6 M6 Lesson 12: Using the Median to Describe the Center

6 M6 Lesson 13: Using the Interquartile Range to Describe Variability

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

#### NC.6.SP.3.b

Understand that describing the variability of a data set is needed to distinguish between data sets in the same scale, by comparing graphical representations of different data sets in the same scale that have similar measures of center, but different spreads.

6 M6 Topic B: Mean and Mean Absolute Deviation

6 M6 Lesson 12: Using the Median to Describe the Center

6 M6 Lesson 13: Using the Interquartile Range to Describe Variability

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

### **Statistics and Probability**

Summarize and describe distributions.

# North Carolina Standard Course of Study-Mathematics

### Aligned Components of Eureka Math<sup>2</sup>

NC.6.SP.4	6 M6 Lesson 3: Creating a Dot Plot
Display numerical data in plots on a number line.	6 M6 Lesson 4: Creating a Histogram
<ul> <li>Use dot plots, histograms, and box plots to represent data.</li> <li>Compare attributes of different representations of the same data.</li> </ul>	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
NC.6.SP.5	This standard is fully addressed by the lessons aligned to its subsections.
Summarize numerical data sets in relation to their context.	
NC.6.SP.5.a	6 M6 Lesson 1: Posing Statistical Questions
Describe the data collected by:	6 M6 Lesson 2: Describing a Data Distribution
<ul> <li>Reporting the number of observations in dot plots and histograms.</li> <li>Communicating the nature of the attribute under investigation, how it was measured, and the units of measurement.</li> </ul>	6 M6 Lesson 5: Comparing Data Displays
	6 M6 Lesson 17: Developing a Statistical Project
	6 M6 Lesson 21: Comparing Measures of Variability

### Aligned Components of Eureka Math<sup>2</sup>

#### NC.6.SP.5.b

Analyze center and variability by:

- Giving quantitative measures of center, describing variability, and any overall pattern, and noting any striking deviations.
- Justifying the appropriate choice of measures of center using the shape of the data distribution.

6 M6 Lesson 7: Using the Mean to Describe the Center

6 M6 Lesson 8: The Mean as a Balance Point

6 M6 Lesson 10: The Mean Absolute Deviation

6 M6 Lesson 11: Using the Mean and Mean Absolute Deviation

6 M6 Lesson 12: Using the Median to Describe the Center

6 M6 Lesson 13: Using the Interquartile Range to Describe Variability

6 M6 Lesson 18: Connecting Graphical Representations and Summary Measures

6 M6 Lesson 20: Choosing a Measure of Center

6 M6 Lesson 21: Comparing Measures of Variability