



Grade 7 | North Carolina Standard Course of Study–Mathematics Correlation to Eureka Math^{2™}

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*^{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 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 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 Math²

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

Analyze proportional relationships and use them to solve real-world and mathematical problems.

North Carolina Standard Course of Study-Mathematics

Aligned Components of Eureka Math²

NC.7.RP.1	7 M1 Lesson 1: An Experiment with Ratios and Rates
Compute unit rates associated with ratios	7 M1 Lesson 2: Exploring Tables of Proportional Relationships
of fractions to solve real-world and mathematical problems.	7 M1 Lesson 3: Identifying Proportional Relationships in Tables
NC.7.RP.2	This standard is fully addressed by the lessons aligned to its subsections.
Recognize and represent proportional relationships between quantities.	
NC.7.RP.2.a	7 M1 Topic A: Understanding Proportional Relationships
Understand that a proportion is a relationship of equality between ratios.	7 M1 Lesson 14: Extreme Bicycles
 Represent proportional relationships using tables and graphs. 	
 Recognize whether ratios are in a proportional relationship using tables and graphs. 	
 Compare two different proportional relationships using tables, graphs, equations, and verbal descriptions. 	

Aligned Components of Eureka Math²

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Identify the unit rate (constant of proportionality) within two quantities in a proportional relationship using tables, graphs, equations, and verbal descriptions.

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7 M1 Lesson 4: Exploring Graphs of Proportional Relationships7 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

NC.7.RP.2.c

Create equations and graphs to represent 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

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

Aligned Components of Eureka Math²

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Use a graphical representation of a proportional relationship in context to:

- Explain the meaning of any point (x, y).
- Explain the meaning of (0, 0) and why it is included.
- Understand that the y-coordinate of the ordered pair (1, r) corresponds to the unit rate and explain its meaning.

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

NC.7.RP.3

Use scale factors and unit rates in proportional relationships to solve ratio and percent problems.

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

 $7\,\mathrm{M5}\,\mathrm{Topic}$ B: Part of $100\,$

7 M5 Lesson 10: Percent Increase

7 M5 Lesson 11: Percent Decrease

7 M5 Lesson 12: More Discounts

Aligned Components of Eureka Math²

NC.7.RP.3 continued	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

The Number System

Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.

North Carolina Standard Course of Study-Mathematics

Aligned Components of *Eureka Math*²

NC.7.NS.1

Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers, using the properties of operations, and describing real-world contexts using sums and differences.

7 M2 Lesson 2: Adding Integers

7 M2 Lesson 3: Adding Integers Efficiently

7 M2 Lesson 4: KAKOOMA®

7 M2 Lesson 5: Decomposing Rational Numbers to Make Addition More Efficient

7 M2 Lesson 6: Adding Rational Numbers

7 M2 Lesson 8: Subtracting Integers, Part 1

7 M2 Lesson 9: Subtracting Integers, Part 2

7 M2 Lesson 10: Subtracting Rational Numbers, Part 1

7 M2 Lesson 11: Subtracting Rational Numbers, Part 2

7 M2 Lesson 12: The Integer Game

7 M2 Lesson 23: Properties of Operations with Rational Numbers

7 M2 Lesson 24: Order of Operations with Rational Numbers

Aligned Components of Eureka Math²

NC.7.NS.2	This standard is fully addressed by the lessons aligned to its subsections.
Apply and extend previous understandings of multiplication and division.	
NC.7.NS.2.a	7 M2 Lesson 18: Understanding Negative Divisors
Understand that a rational number is any number that can be written as a quotient of integers with a non-zero divisor.	7 M2 Lesson 21: Comparing and Ordering Rational Numbers
NC.7.NS.2.b	7 M2 Topic C: Multiplying Rational Numbers
Apply properties of operations as strategies,	7 M2 Lesson 17: Understanding Negative Dividends
including the standard algorithms, to multiply and	7 M2 Lesson 18: Understanding Negative Divisors
divide rational numbers and describe the product and quotient in real-world contexts.	7 M2 Lesson 22: Multiplication and Division Expressions
4	7 M2 Lesson 24: Order of Operations with Rational Numbers
NC.7.NS.2.c	7 M2 Lesson 19: Rational Numbers as Decimals, Part 1
Use division and previous understandings	7 M2 Lesson 20: Rational Numbers as Decimals, Part 2
of fractions and decimals.	7 M2 Lesson 21: Comparing and Ordering Rational Numbers
 Convert a fraction to a decimal using long division. 	
• Understand that the decimal form of a rational number terminates in 0s or eventually repeats.	
NC.7.NS.3	7 M2 Lesson 25: Writing and Evaluating Expressions with Rational Numbers, Part 1
Solve real-world and mathematical problems involving numerical expressions with rational numbers using the four operations.	7 M2 Lesson 26: Writing and Evaluating Expressions with Rational Numbers, Part 2

Expressions and Equations

Use properties of operations to generate equivalent expressions.

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Aligned Components of Eureka Math²

NC.7.EE.1	7 M3 Topic A: Equivalent Expressions
Apply properties of operations as strategies to:	
 Add, subtract, and expand linear expressions with rational coefficients. 	
• Factor linear expression with an integer GCF.	
NC.7.EE.2	7 M3 Lesson 2: The Distributive Property and the Tabular Model
Understand that equivalent expressions can	7 M3 Lesson 4: Adding and Subtracting Expressions
reveal real-world and mathematical relationships.	7 M3 Lesson 5: Factoring Expressions
Interpret the meaning of the parts of each expression in context.	7 M3 Lesson 6: Comparing Expressions
·	7 M3 Lesson 9: Solving Equations to Determine Unknown Angle Measures
	7 M5 Lesson 10: Percent Increase
	7 M5 Lesson 11: Percent Decrease
	7 M5 Lesson 12: More Discounts
	7 M5 Lesson 14: Scale Factor—Percent Increase and Decrease
	7 M5 Lesson 15: Tips and Taxes
	7 M5 Lesson 16: Markups and Discounts
	7 M5 Lesson 23: Percents of Percents

Expressions and Equations

Solve real-world and mathematical problems using numerical and algebraic expressions, equations, and inequalities.

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NC.7.EE.3	7 M2 Lesson 25: Writing and Evaluating Expressions with Rational Numbers, Part 1
Solve multi-step real-world and mathematical	7 M2 Lesson 26: Writing and Evaluating Expressions with Rational Numbers, Part 2
problems posed with rational numbers in algebraic expressions.	7 M3 Lesson 9: Solving Equations to Determine Unknown Angle Measures
 Apply properties of operations to calculate with 	7 M3 Lesson 10: Problem Solving with Unknown Angle Measures
positive and negative numbers in any form.	7 M3 Lesson 11: Dominoes and Dominoes
Convert between different forms of a number	7 M3 Lesson 16: Using Equations to Solve Rate Problems
and equivalent forms of the expression as appropriate.	7 M3 Lesson 17: Using Equations to Solve Problems
NC.7.EE.4	This standard is fully addressed by the lessons aligned to its subsections.
Use variables to represent quantities to solve real-world or mathematical problems.	
NC.7.EE.4.a	7 M3 Lesson 11: Dominoes and Dominoes
Construct equations to solve problems by reasoning	7 M3 Lesson 12: Solving Equations Algebraically and Arithmetically
about the quantities.	7 M3 Lesson 13: Solving Equations—Puzzles
 Fluently solve multistep equations with the variable on one side, including those generated 	7 M3 Lesson 16: Using Equations to Solve Rate Problems
by word problems.	7 M3 Lesson 17: Using Equations to Solve Problems
 Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. 	

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NC.7.EE.4.b

Construct inequalities to solve problems by reasoning about the quantities.

- Fluently solve multi-step inequalities with the variable on one side, including those generated by word problems.
- Compare an algebraic solution process for equations and an algebraic solution process for inequalities.
- Graph the solution set of the inequality and interpret in context.

7 M3 Topic D: Inequalities

Geometry

Draw, construct, and describe geometrical figures and describe the relationships between them.

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Aligned Components of Eureka Math²

7 M1 Lesson 15: Scale Drawings
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
7 M1 Lesson 20: Creating Multiple Scale Drawings
7 M5 Lesson 1: Proportionality and Scale Factor
7 M5 Lesson 14: Scale Factor—Percent Increase and Decrease
Supplemental material is needed to address building an understanding that angle measures remain the same when solving problem involving scale drawings of geometric figures.
7 M4 Topic A: Constructing Geometric Figures
7 M4 Topic B: Constructing Triangles
7 M4 Lesson 9: Constructing a Circle

Geometry

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

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NC.7.G.4	7 M4 Lesson 10: The Outside of a Circle
Understand area and circumference of a circle.	7 M4 Lesson 11: The Inside of a Circle
 Understand the relationships between the radius, diameter, circumference, and area. Apply the formulas for area and circumference of a circle to solve problems. 	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
NC.7.G.5 Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve equations for an unknown angle in a figure.	7 M3 Lesson 7: Angle Relationships and Unknown Angle Measures 7 M3 Lesson 8: Strategies to Determine Unknown Angle Measures 7 M3 Lesson 10: Problem Solving with Unknown Angle Measures

Aligned Components of Eureka Math²

NC.7.G.6

Solve real-world and mathematical problems involving:

- Area and perimeter of two-dimensional objects composed of triangles, quadrilaterals, and polygons.
- Volume and surface area of pyramids, prisms, or three-dimensional objects composed of cubes, pyramids, and right prisms.

7 M4 Lesson 14: Composite Figures with Circular Regions

7 M4 Lesson 16: Solving Area Problems by Composition and Decomposition

7 M4 Lesson 17: Surface Area of Right Rectangular and Right Triangular Prisms

7 M4 Lesson 18: Surface Area of Right Prisms

7 M4 Lesson 20: Surface Areas of Right Pyramids

7 M4 Lesson 21: Surface Area of Other Solids

7 M4 Lesson 24: Volume of Prisms

7 M4 Lesson 25: Volume of Composite Solids

7 M4 Lesson 26: Designing a Fish Tank

Supplementary material is needed to address solving real-world and mathematical problems involving perimeter of two-dimensional objects.

Statistics and Probability

Use random sampling to draw inferences about a population.

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Aligned Components of Eureka Math²

NC.7.SP.1	7 M6 Lesson 11: Populations and Samples
Understand that statistics can be used to gain information about a population by:	7 M6 Lesson 12: Selecting a Sample
 Recognizing that generalizations about a population from a sample are valid only if the sample is representative of that population. 	7 M6 Lesson 13: Variability Between Samples 7 M6 Lesson 14: Sampling Variability When Estimating a Population Mean
 Using random sampling to produce representative samples to support valid inferences. 	
NC.7.SP.2	7 M6 Lesson 13: Variability Between Samples
Generate multiple random samples (or simulated	7 M6 Lesson 14: Sampling Variability When Estimating a Population Mean
samples) of the same size to gauge the variation in estimates or predictions, and use this data to draw inferences about a population with an unknown characteristic of interest.	7 M6 Lesson 15: Sampling Variability and the Effect of Sample Size
	7 M6 Lesson 16: Sampling Variability When Estimating a Population Proportion

Statistics and Probability

Make informal inferences to compare two populations.

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NC.7.SP.3	This standard is fully addressed by the lessons aligned to its subsections.
Recognize the role of variability when comparing two populations.	

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NC.7.SP.3.a	7 M6 Topic D: Comparing Populations
Calculate the measure of variability of a data set and understand that it describes how the values of the data set vary with a single number.	
 Understand the mean absolute deviation of a data set is a measure of variability that describes the average distance that points within a data set are from the mean of the data set. 	
 Understand that the range describes the spread of the entire data set. 	
• Understand that the interquartile range describes the spread of the middle 50% of the data.	
NC.7.SP.3.b	7 M6 Topic D: Comparing Populations
Informally assess the difference between two data sets by examining the overlap and separation between the graphical representations of two data sets.	
NC.7.SP.4	7 M6 Topic D: Comparing Populations
Use measures of center and measures of variability for numerical data from random samples to draw comparative inferences about two populations.	

Statistics and Probability

Investigate chance processes and develop, use, and evaluate probability models.

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NC.7.SP.5	7 M6 Lesson 1: What Is Probability?
Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring.	
NC.7.SP.6	7 M6 Lesson 2: Empirical Probability
Collect data to calculate the experimental probability of a chance event, observing its long-run relative frequency. Use this experimental probability to predict the approximate relative frequency.	7 M6 Lesson 3: Outcomes of Chance Experiments
	7 M6 Lesson 6: Outcomes That Are Not Equally Likely
	7 M6 Lesson 8: Picking Blue
NC.7.SP.7	This standard is fully addressed by the lessons aligned to its subsections.
Develop a probability model and use it to find probabilities of simple events.	
NC.7.SP.7.a	7 M6 Lesson 4: Theoretical Probability
Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events.	7 M6 Lesson 7: The Law of Large Numbers
NC.7.SP.7.b	7 M6 Lesson 7: The Law of Large Numbers
Develop a probability model (which may not be uniform) by repeatedly performing a chance process and observing frequencies in the data generated.	7 M6 Lesson 8: Picking Blue

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7 M6 Lesson 7: The Law of Large Numbers
This standard is fully addressed by the lessons aligned to its subsections.
7 M6 Lesson 5: Multistage Experiments
7 M6 Lesson 5: Multistage Experiments
7 M6 Lesson 9: Probability Simulations
7 M6 Lesson 10: Simulations with Random Number Tables