
Grade 8 | North Carolina Standard Course of Study–Mathematics (2017) Correlation to *Eureka Math*²® (2027)

*Eureka Math*² is a research-proven math curriculum that empowers teachers to center instructional techniques on student success. Teachers can foster more “aha!” learning moments by providing the support needed for all learners to build a more confident math mindset.

This *Eureka Math*² edition builds on a strong foundation of effective instruction. It provides teachers with guidance on delivering rigorous instruction that honors student choice and encourages confident problem-solving.

*Eureka Math*² carefully sequences mathematical content to maximize vertical alignment from kindergarten through high school. This kind of sequencing has proven to be essential in students’ mastery of math.

Teachability

*Eureka Math*² 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 into the teacher materials.

Accessibility

*Eureka Math*² incorporates Universal Design for Learning (UDL) principles so all learners can access the mathematics and take on challenging math concepts. UDL, Differentiation, and Multilingual Learner supports are built into the instructional design and are clearly identified in the *Teach* book.

The curriculum also carries a focus on readability. By eliminating unnecessary words and using 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.

Math Confidence

*Eureka Math*² fosters a classroom culture of learning by encouraging student-led discourse and cognitive engagement that results in confident learners. By leveraging consistent models, routines, and progressions, teachers can remove barriers and allow all students an avenue to success. Within the digital platform, each grade includes wordless videos and digital interactives that spark students’ curiosity and help them make conceptual connections. Using the *Learn* books, students wonder, explore, and make sense of mathematics, which helps them develop a strong, positive mathematical identity.

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

The Number System

Know that there are numbers that are not rational, and approximate them by rational numbers.

North Carolina Standard Course of Study–Mathematics	Aligned Components of <i>Eureka Math</i> ²
<p>NC.8.NS.1</p> <p>Understand that every number has a decimal expansion. Building upon the definition of a rational number, know that an irrational number is defined as a non-repeating, non-terminating decimal.</p>	<p>8 M4 Lesson 5: An Interesting Application of Linear Equations, Part 1</p> <p>8 M4 Lesson 6: An Interesting Application of Linear Equations, Part 2</p>
<p>NC.8.NS.2</p> <p>Use rational approximations of irrational numbers to compare the size of irrational numbers and locate them approximately on a number line. Estimate the value of expressions involving:</p> <ul style="list-style-type: none"> • Square roots and cube roots to the tenths. • π to the hundredths. 	<p>8 M1 Lesson 21: Approximating Values of Roots and π^2</p> <p>8 M1 Lesson 23: Ordering Irrational Numbers</p>

Expressions and Equations**Work with radicals and integer exponents.****North Carolina Standard Course of Study—Mathematics****Aligned Components of *Eureka Math*²**

<p>NC.8.EE.1</p> <p>Develop and apply the properties of integer exponents to generate equivalent numerical expressions.</p>	<p>8 M1 Lesson 5: Products of Exponential Expressions with Whole Number Exponents</p> <p>8 M1 Lesson 6: More Properties of Exponents</p> <p>8 M1 Lesson 7: Making Sense of the Exponent of 0</p> <p>8 M1 Lesson 8: Making Sense of Integer Exponents</p> <p>8 M1 Lesson 9: Writing Equivalent Expressions</p> <p>8 M1 Lesson 10: Evaluating Numerical Expressions by Using Properties of Exponents</p>
<p>NC.8.EE.2</p> <p>Use square root and cube root symbols to:</p> <ul style="list-style-type: none"> • Represent solutions to equations of the form $x^2 = p$ and $x^3 = p$, where p is a positive rational number. • Evaluate square roots of perfect squares and cube roots of perfect cubes for positive numbers less than or equal to 400. 	<p>8 M1 Lesson 16: Perfect Squares and Perfect Cubes</p> <p>8 M1 Lesson 17: Solving Equations with Squares and Cubes</p> <p>8 M1 Lesson 20: Square Roots</p> <p>8 M1 Lesson 22: Familiar and Not So Familiar Numbers</p> <p>8 M1 Lesson 24: Revisiting Equations with Squares and Cubes</p>
<p>NC.8.EE.3</p> <p>Use numbers expressed in scientific notation to estimate very large or very small quantities and to express how many times as much one is than the other.</p>	<p>8 M1 Lesson 1: Large and Small Positive Numbers</p> <p>8 M1 Lesson 2: Comparing Large Numbers</p> <p>8 M1 Lesson 3: Time to Be More Precise—Scientific Notation</p> <p>8 M1 Lesson 7: Making Sense of the Exponent of 0</p> <p>8 M1 Lesson 11: Small Positive Numbers in Scientific Notation</p>

North Carolina Standard Course of Study–Mathematics

Aligned Components of *Eureka Math*²

<p>NC.8.EE.4</p> <p>Perform multiplication and division with numbers expressed in scientific notation to solve real-world problems, including problems where both decimal and scientific notation are used.</p>	<p>8 M1 Lesson 2: Comparing Large Numbers</p> <p>8 M1 Lesson 12: Operations with Numbers in Scientific Notation</p> <p>8 M1 Lesson 13: Applications with Numbers in Scientific Notation</p> <p>8 M1 Lesson 14: Choosing Units of Measurement</p> <p>8 M1 Lesson 15: Get to the Point</p>
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Expressions and Equations

Analyze and solve linear equations and inequalities.

North Carolina Standard Course of Study–Mathematics

Aligned Components of *Eureka Math*²

<p>NC.8.EE.7</p> <p>Solve real-world and mathematical problems by writing and solving equations and inequalities in one variable.</p> <ul style="list-style-type: none"> Recognize linear equations in one variable as having one solution, infinitely many solutions, or no solutions. Solve linear equations and inequalities including multi-step equations and inequalities with the same variable on both sides. 	<p>8 M4 Lesson 1: Equations</p> <p>8 M4 Lesson 2: Solving Linear Equations</p> <p>8 M4 Lesson 3: Solving Linear Equations with Rational Coefficients</p> <p>8 M4 Lesson 4: Using Linear Equations to Solve Problems</p> <p>8 M4 Lesson 5: An Interesting Application of Linear Equations, Part 1</p> <p>8 M4 Lesson 6: An Interesting Application of Linear Equations, Part 2</p> <p>8 M4 Lesson 7: Linear Equations with More Than One Solution</p> <p>8 M4 Lesson 8: Another Possible Number of Solutions</p> <p>8 M4 Lesson 9: Writing Linear Equations</p> <p>8 M4 Lesson 10: Using Linear Equations to Solve Real-World Problems</p> <p>8 M4 Lesson 11: Planning a Trip</p>
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Expressions and Equations

Analyze and solve pairs of simultaneous linear equations.

North Carolina Standard Course of Study–Mathematics	Aligned Components of <i>Eureka Math</i> ²
<p>NC.8.EE.8</p> <p>Analyze and solve a system of two linear equations in two variables in slope-intercept form.</p> <ul style="list-style-type: none"> Understand that solutions to a system of two linear equations correspond to the points of intersection of their graphs because the point of intersection satisfies both equations simultaneously. Solve real-world and mathematical problems leading to systems of linear equations by graphing the equations. Solve simple cases by inspection. 	<p>8 M5 Lesson 1: Solving Problems with Equations and Their Graphs</p> <p>8 M5 Lesson 2: Introduction to Systems of Linear Equations</p> <p>8 M5 Lesson 3: Identifying Solutions</p> <p>8 M5 Lesson 4: More Than One Solution</p> <p>8 M5 Lesson 5: Estimating Solutions</p> <p>8 M5 Lesson 6: Solving Systems of Linear Equations without Graphing</p> <p>8 M5 Lesson 7: The Substitution Method</p> <p>8 M5 Lesson 8: Using Tape Diagrams to Solve Systems of Equations</p> <p>8 M5 Lesson 9: Rewriting Equations to Solve a System of Equations</p> <p>8 M5 Lesson 10: Choosing a Solution Method</p> <p>8 M5 Lesson 11: Writing and Solving Systems of Equations for Mathematical Problems</p> <p>8 M5 Lesson 12: Solving Historical Problems with Systems of Equations</p> <p>8 M5 Lesson 13: Writing and Solving Systems of Equations for Real-World Problems</p> <p>8 M5 Lesson 14: Back to the Coordinate Plane</p>

Functions

Define, evaluate, and compare functions.

North Carolina Standard Course of Study–Mathematics	Aligned Components of <i>Eureka Math</i> ²
<p>NC.8.F.1</p> <p>Understand that a function is a rule that assigns to each input exactly one output.</p> <ul style="list-style-type: none"> Recognize functions when graphed as the set of ordered pairs consisting of an input and exactly one corresponding output. Recognize functions given a table of values or a set of ordered pairs. 	<p>8 M6 Lesson 1: Motion and Speed</p> <p>8 M6 Lesson 2: Definition of a Function</p> <p>8 M6 Lesson 4: More Examples of Functions</p> <p>8 M6 Lesson 5: Graphs of Functions and Equations</p>
<p>NC.8.F.2</p> <p>Compare properties of two linear functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions).</p>	<p>8 M6 Lesson 7: Interpreting Rate of Change and Initial Value</p> <p>8 M6 Lesson 8: Comparing Functions</p>
<p>NC.8.F.3</p> <p>Identify linear functions from tables, equations, and graphs.</p>	<p>8 M6 Lesson 3: Linear Functions and Proportionality</p> <p>8 M6 Lesson 6: Linear Functions and Rate of Change</p> <p>8 M6 Lesson 10: Graphs of Nonlinear Functions</p>

Functions

Use functions to model relationships between quantities.

North Carolina Standard Course of Study–Mathematics	Aligned Components of <i>Eureka Math</i> ²
<p>NC.8.F.4</p> <p>Analyze functions that model linear relationships.</p> <ul style="list-style-type: none"> Understand that a linear relationship can be generalized by $y = mx + b$. Write an equation in slope-intercept form to model a linear relationship by determining the rate of change and the initial value, given at least two (x, y) values or a graph. Construct a graph of a linear relationship given an equation in slope-intercept form. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of the slope and y-intercept of its graph or a table of values. 	<p>8 M3 Lesson 17: Similar Triangles on a Line</p> <p>8 M4 Lesson 16: Proportional Relationships and Slope</p> <p>8 M4 Lesson 17: Slopes of Rising Lines</p> <p>8 M4 Lesson 18: Slopes of Falling Lines</p> <p>8 M4 Lesson 19: Using Coordinates to Find Slope</p> <p>8 M4 Lesson 20: Slope-Intercept Form of the Equation of a Line</p> <p>8 M6 Lesson 6: Linear Functions and Rate of Change</p> <p>8 M6 Lesson 7: Interpreting Rate of Change and Initial Value</p> <p>8 M6 Lesson 25: Applications of Volume</p>
<p>NC.8.F.5</p> <p>Qualitatively analyze the functional relationship between two quantities.</p> <ul style="list-style-type: none"> Analyze a graph determining where the function is increasing or decreasing; linear or non-linear. Sketch a graph that exhibits the qualitative features of a real-world function. 	<p>8 M6 Lesson 9: Increasing and Decreasing Functions</p> <p>8 M6 Lesson 10: Graphs of Nonlinear Functions</p>

Geometry

Understand congruence and similarity using physical models, transparencies, or geometry software.

North Carolina Standard Course of Study–Mathematics	Aligned Components of <i>Eureka Math</i> ²
<p>NC.8.G.2</p> <p>Use transformations to define congruence.</p> <ul style="list-style-type: none"> • Verify experimentally the properties of rotations, reflections, and translations that create congruent figures. • Understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations. • Given two congruent figures, describe a sequence that exhibits the congruence between them. 	<p>8 M2 Lesson 1: Motions of the Plane</p> <p>8 M2 Lesson 2: Translations</p> <p>8 M2 Lesson 3: Reflections</p> <p>8 M2 Lesson 5: Rotations</p> <p>8 M2 Lesson 7: Working Backward</p> <p>8 M2 Lesson 8: Sequencing the Rigid Motions</p> <p>8 M2 Lesson 9: Ordering Sequences of Rigid Motions</p> <p>8 M2 Lesson 10: Congruent Figures</p> <p>8 M2 Lesson 11: Showing Figures Are Congruent</p> <p>8 M2 Lesson 12: Lines Cut by a Transversal</p>
<p>NC.8.G.3</p> <p>Describe the effect of dilations about the origin, translations, rotations about the origin in 90 degree increments, and reflections across the x-axis and y-axis on two-dimensional figures using coordinates.</p>	<p>8 M2 Lesson 4: Translations and Reflections on the Coordinate Plane</p> <p>8 M2 Lesson 6: Rotations on the Coordinate Plane</p> <p>8 M2 Lesson 9: Ordering Sequences of Rigid Motions</p> <p>8 M3 Lesson 1: Exploring Dilations</p> <p>8 M3 Lesson 2: Enlargements</p> <p>8 M3 Lesson 3: Reductions and More Enlargements</p> <p>8 M3 Lesson 4: Using Lined Paper to Explore Dilations</p> <p>8 M3 Lesson 5: Figures and Dilations</p> <p>8 M3 Lesson 6: The Shadowy Hand</p> <p>8 M3 Lesson 7: Dilations on a Grid</p> <p>8 M3 Lesson 8: Dilations on the Coordinate Plane</p>

North Carolina Standard Course of Study–Mathematics

Aligned Components of *Eureka Math*²

<p>NC.8.G.3 <i>continued</i></p>	<p>8 M3 Lesson 9: Describing Dilations</p> <p>8 M3 Lesson 10: Sequencing Transformations</p> <p>8 M3 Lesson 16: Similar Right Triangles</p>
<p>NC.8.G.4</p> <p>Use transformations to define similarity.</p> <ul style="list-style-type: none"> • Verify experimentally the properties of dilations that create similar figures. • Understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations. • Given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them. 	<p>8 M3 Lesson 11: Similar Figures</p> <p>8 M3 Lesson 12: Exploring Angles in Similar Triangles</p> <p>8 M3 Lesson 13: Similar Triangles</p> <p>8 M3 Lesson 17: Similar Triangles on a Line</p>

Geometry

Analyze angle relationships.

North Carolina Standard Course of Study–Mathematics	Aligned Components of <i>Eureka Math</i> ²
<p>NC.8.G.5</p> <p>Use informal arguments to analyze angle relationships.</p> <ul style="list-style-type: none"> Recognize relationships between interior and exterior angles of a triangle. Recognize the relationships between the angles created when parallel lines are cut by a transversal. Recognize the angle-angle criterion for similarity of triangles. Solve real-world and mathematical problems involving angles. 	<p>8 M2 Lesson 12: Lines Cut by a Transversal</p> <p>8 M2 Lesson 13: Angle Sum of a Triangle</p> <p>8 M2 Lesson 14: Showing Lines Are Parallel</p> <p>8 M2 Lesson 15: Exterior Angles of Triangles</p> <p>8 M2 Lesson 16: Find Unknown Angle Measures</p> <p>8 M3 Lesson 12: Exploring Angles in Similar Triangles</p> <p>8 M3 Lesson 13: Similar Triangles</p> <p>8 M3 Lesson 14: Using Similar Figures to Find Unknown Side Lengths</p> <p>8 M3 Lesson 15: Applications of Similar Figures</p> <p>8 M3 Lesson 16: Similar Right Triangles</p> <p><i>Supplemental material is needed to address solving real-world problems involving angles.</i></p>

Geometry

Understand and apply the Pythagorean Theorem.

North Carolina Standard Course of Study–Mathematics	Aligned Components of <i>Eureka Math</i> ²
<p>NC.8.G.6</p> <p>Explain the Pythagorean Theorem and its converse.</p>	<p>8 M2 Lesson 17: Proving the Pythagorean Theorem</p> <p>8 M2 Lesson 18: Proving the Converse of the Pythagorean Theorem</p> <p>8 M2 Lesson 19: Using the Pythagorean Theorem and Its Converse</p>

North Carolina Standard Course of Study–Mathematics	Aligned Components of <i>Eureka Math</i> ²
<p>NC.8.G.7</p> <p>Apply the Pythagorean Theorem and its converse to solve real-world and mathematical problems.</p>	<p>8 M1 Lesson 18: The Pythagorean Theorem</p> <p>8 M1 Lesson 19: Using the Pythagorean Theorem</p> <p>8 M1 Lesson 20: Square Roots</p> <p>8 M2 Lesson 19: Using the Pythagorean Theorem and Its Converse</p> <p>8 M2 Lesson 21: Applying the Pythagorean Theorem</p> <p>8 M2 Lesson 22: On the Right Path</p> <p>8 M3 Lesson 16: Similar Right Triangles</p>
<p>NC.8.G.8</p> <p>Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.</p>	<p>8 M2 Lesson 20: Distance in the Coordinate Plane</p> <p>8 M2 Lesson 22: On the Right Path</p>

Geometry

Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres.

North Carolina Standard Course of Study–Mathematics	Aligned Components of <i>Eureka Math</i> ²
<p>NC.8.G.9</p> <p>Understand how the formulas for the volumes of cones, cylinders, and spheres are related and use the relationship to solve real-world and mathematical problems.</p>	<p>8 M6 Lesson 21: Volumes of Prisms and Pyramids</p> <p>8 M6 Lesson 22: Volume of Cylinders</p> <p>8 M6 Lesson 23: Volume of Cones</p> <p>8 M6 Lesson 24: Volume of Spheres</p> <p>8 M6 Lesson 25: Applications of Volume</p>

Statistics and Probability**Investigate patterns of association in bivariate data.**

North Carolina Standard Course of Study–Mathematics	Aligned Components of <i>Eureka Math</i>²
<p>NC.8.SP.1</p> <p>Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Investigate and describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association.</p>	<p>8 M6 Lesson 11: Scatter Plots</p> <p>8 M6 Lesson 12: Patterns in Scatter Plots</p>
<p>NC.8.SP.2</p> <p>Model the relationship between bivariate quantitative data to:</p> <ul style="list-style-type: none"> • Informally fit a straight line for a scatter plot that suggests a linear association. • Informally assess the model fit by judging the closeness of the data points to the line. 	<p>8 M6 Lesson 13: Informally Fitting a Line to Data</p> <p>8 M6 Lesson 15: Linear Models</p> <p>8 M6 Lesson 16: Using the Investigative Process</p> <p>8 M6 Lesson 17: Analyzing the Model</p>
<p>NC.8.SP.3</p> <p>Use the equation of a linear model to solve problems in the context of bivariate quantitative data, interpreting the slope and y-intercept.</p>	<p>8 M6 Lesson 6: Linear Functions and Rate of Change</p> <p>8 M6 Lesson 7: Interpreting Rate of Change and Initial Value</p> <p>8 M6 Lesson 14: Determining an Equation of a Line Fit to Data</p> <p>8 M6 Lesson 15: Linear Models</p> <p>8 M6 Lesson 16: Using the Investigative Process</p> <p>8 M6 Lesson 17: Analyzing the Model</p>

North Carolina Standard Course of Study–Mathematics

Aligned Components of *Eureka Math*²

<p>NC.8.SP.4</p> <p>Understand that patterns of association can also be seen in bivariate categorical data by displaying frequencies and relative frequencies in a two-way table.</p> <ul style="list-style-type: none"> • Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects. • Use relative frequencies calculated for rows or columns to describe possible association between the two variables. 	<p>8 M6 Lesson 18: Bivariate Categorical Data</p> <p>8 M6 Lesson 19: Association in Bivariate Categorical Data</p> <p>8 M6 Lesson 20: Analyzing Bivariate Categorical Data</p>
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