Grade 7–8 | North Carolina Standard Course of Study–Mathematics (2017) Correlation to *Eureka Math²® (2027)*

Eureka Math² 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 Math²* 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 Math² 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 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 into the teacher materials.

Accessibility

Eureka Math² 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 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.

Math Confidence

Eureka Math² 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 *Eureka Math²*
MP.1 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 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 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 Model with mathematics.	Lessons in every module engage students in mathematical practices. These are indicated in margin notes included with every lesson.
MP.5 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 Attend to precision.	Lessons in every module engage students in mathematical practices. These are indicated in margin notes included with every lesson.
MP.7 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 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.

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 Compute unit rates associated with ratios of fractions to solve real-world and mathematical problems.	7–8 M2 Lesson 12: An Experiment with Ratios and Rates 7–8 M2 Lesson 13: Exploring Tables of Proportional Relationships
NC.7.RP.2 Recognize and represent proportional relationships between quantities.	*This standard is fully addressed by the lessons aligned to its subsections.*
NC.7.RP.2.a Understand that a proportion is a relationship of equality between ratios. • 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.	7–8 M2 Lesson 12: An Experiment with Ratios and Rates 7–8 M2 Lesson 13: Exploring Tables of Proportional Relationships 7–8 M2 Lesson 14: Exploring Graphs of Proportional Relationships 7–8 M2 Lesson 15: Relating Representations of Proportional Relationships 7–8 M2 Lesson 19: Proportional Reasoning and Percents
NC.7.RP.2.b Identify the unit rate (constant of proportionality) within two quantities in a proportional relationship using tables, graphs, equations, and verbal descriptions.	7–8 M2 Lesson 14: Exploring Graphs of Proportional Relationships 7–8 M2 Lesson 15: Relating Representations of Proportional Relationships 7–8 M2 Lesson 16: Applying Proportional Reasoning

North Carolina Standard Course of Study–Mathematics	Aligned Components of *Eureka Math²*
NC.7.RP.2.c Create equations and graphs to represent proportional relationships.	7–8 M2 Lesson 13: Exploring Tables of Proportional Relationships 7–8 M2 Lesson 14: Exploring Graphs of Proportional Relationships 7–8 M2 Lesson 15: Relating Representations of Proportional Relationships 7–8 M2 Lesson 16: Applying Proportional Reasoning 7–8 M2 Lesson 17: Using Proportional Reasoning to Solve Multi-Step Problems 7–8 M2 Lesson 18: Handstand Sprint 7–8 M2 Lesson 19: Proportional Reasoning and Percents
NC.7.RP.2.d 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.	7–8 M2 Lesson 14: Exploring Graphs of Proportional Relationships 7–8 M2 Lesson 15: Relating Representations of Proportional Relationships

North Carolina Standard Course of Study–Mathematics	Aligned Components of *Eureka Math²*
NC.7.RP.3 Use scale factors and unit rates in proportional relationships to solve ratio and percent problems.	7–8 M2 Lesson 16: Applying Proportional Reasoning 7–8 M2 Lesson 17: Using Proportional Reasoning to Solve Multi-Step Problems 7–8 M2 Lesson 18: Handstand Sprint 7–8 M2 Lesson 19: Proportional Reasoning and Percents 7–8 M2 Lesson 20: Commissions, Fees, and Taxes 7–8 M2 Lesson 21: Discount, Markup, Sales Tax, and Tip 7–8 M2 Lesson 22: Percent Increase and Percent Decrease 7–8 M2 Lesson 23: What Is the Best Deal? 7–8 M2 Lesson 24: Simple Interest 7–8 M2 Lesson 25: Applying Percent Error

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 Math²*
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.	7–8 M1 Lesson 1: Adding Integers and Rational Numbers 7–8 M1 Lesson 2: KAKOOMA® with Rational Numbers 7–8 M1 Subtracting Rational Numbers

North Carolina Standard Course of Study–Mathematics	Aligned Components of *Eureka Math²*
NC.7.NS.2 Apply and extend previous understandings of multiplication and division.	*This standard is fully addressed by the lessons aligned to its subsections.*
NC.7.NS.2.a Understand that a rational number is any number that can be written as a quotient of integers with a non-zero divisor.	7–8 M1 Lesson 8: Dividing Integers and Rational Numbers
NC.7.NS.2.b Apply properties of operations as strategies, including the standard algorithms, to multiply and divide rational numbers and describe the product and quotient in real-world contexts.	7–8 M1 Lesson 6: Multiplying Integers and Rational Numbers 7–8 M1 Lesson 7: Exponential Expressions and Relating Multiplication to Division 7–8 M1 Lesson 8: Dividing Integers and Rational Numbers 7–8 M1 Lesson 9: Decimal Expansions of Rational Numbers
NC.7.NS.2.c Use division and previous understandings of fractions and decimals. • Convert a fraction to a decimal using long division. • Understand that the decimal form of a rational number terminates in 0s or eventually repeats.	7–8 M1 Lesson 9: Decimal Expansions of Rational Numbers
NC.7.NS.3 Solve real-world and mathematical problems involving numerical expressions with rational numbers using the four operations.	7–8 M1 Lesson 1: Adding Integers and Rational Numbers 7–8 M1 Lesson 3: Finding Distances to Find Differences 7–8 M1 Lesson 4: Subtracting Integers 7–8 M1 Lesson 5: Subtracting Rational Numbers 7–8 M1 Lesson 6: Multiplying Integers and Rational Numbers 7–8 M1 Lesson 8: Dividing Integers and Rational Numbers

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 *Eureka Math²*
NC.8.NS.1 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.	7–8 M1 Lesson 20: Using the Pythagorean Theorem 7–8 M1 Lesson 22: Rational and Irrational Numbers 7–8 M1 Lesson 23: Revisiting Equations with Squares and Cubes
NC.8.NS.2 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: • Square roots and cube roots to the tenths. • π to the hundredths.	7–8 M1 Lesson 21: Approximating Values of Roots 7–8 M1 Lesson 22: Rational and Irrational Numbers

Expressions and Equations

Use properties of operations to generate equivalent expressions.

North Carolina Standard Course of Study–Mathematics	Aligned Components of *Eureka Math²*
NC.7.EE.1 Apply properties of operations as strategies to: • Add, subtract, and expand linear expressions with rational coefficients. • Factor linear expression with an integer GCF.	7–8 M2 Lesson 2: Using Equivalent Expressions to Solve Equations

North Carolina Standard Course of Study–Mathematics	Aligned Components of *Eureka Math²*
NC.7.EE.2 Understand that equivalent expressions can reveal real-world and mathematical relationships. Interpret the meaning of the parts of each expression in context.	7–8 M2 Lesson 2: Using Equivalent Expressions to Solve Equations 7–8 M2 Lesson 21: Discount, Markup, Sales Tax, and Tip 7–8 M2 Lesson 22: Percent Increase and Percent Decrease

Expressions and Equations

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

North Carolina Standard Course of Study–Mathematics	Aligned Components of *Eureka Math²*
NC.7.EE.3 Solve multi-step real-world and mathematical problems posed with rational numbers in algebraic expressions. • Apply properties of operations to calculate with positive and negative numbers in any form. • Convert between different forms of a number and equivalent forms of the expression as appropriate.	7–8 M2 Lesson 11: Using Linear Equations to Solve Real-World Problems 7–8 M2 Lesson 17: Using Proportional Reasoning to Solve Multi-Step Problems 7–8 M2 Lesson 18: Handstand Sprint 7–8 M2 Lesson 23: What Is the Best Deal?
NC.7.EE.4 Use variables to represent quantities to solve real-world or mathematical problems.	*This standard is fully addressed by the lessons aligned to its subsections.*

North Carolina Standard Course of Study–Mathematics	Aligned Components of *Eureka Math²*
NC.7.EE.4.a Construct equations to solve problems by reasoning about the quantities. • Fluently solve multistep equations with the variable on one side, including those generated by word problems. • Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. • Interpret the solution in context.	7–8 M2 Lesson 1: Finding Unknown Angle Measures 7–8 M2 Lesson 3: Solving Equations 7–8 M2 Lesson 5: Solving Problems Involving Equations and Inequalities
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.	7–8 M2 Lesson 4: Using Equations to Solve Inequalities 7–8 M2 Lesson 5: Solving Problems Involving Equations and Inequalities

Expressions and Equations

Work with radicals and integer exponents.

North Carolina Standard Course of Study–Mathematics	Aligned Components of *Eureka Math²*
NC.8.EE.1 Develop and apply the properties of integer exponents to generate equivalent numerical expressions.	7–8 M1 Lesson 11: Products of Exponential Expressions with Positive Whole-Number Exponents 7–8 M1 Lesson 12: More Properties of Exponents 7–8 M1 Lesson 13: Making Sense of Integer Exponents
NC.8.EE.2 Use square root and cube root symbols to: • 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.	7–8 M1 Lesson 18: Solving Equations with Squares and Cubes 7–8 M1 Lesson 19: The Pythagorean Theorem 7–8 M1 Lesson 20: Using the Pythagorean Theorem 7–8 M1 Lesson 21: Approximating Values of Roots 7–8 M1 Lesson 23: Revisiting Equations with Squares and Cubes
NC.8.EE.3 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.	7–8 M1 Lesson 10: Large and Small Positive Numbers 7–8 M1 Lesson 14: Writing Very Large and Very Small Numbers in Scientific Notation 7–8 M1 Lesson 15: Operations with Numbers Written in Scientific Notation 7–8 M1 Lesson 16: Applications with Numbers Written in Scientific Notation 7–8 M1 Lesson 17: Get to the Point
NC.8.EE.4 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.	7–8 M1 Lesson 15: Operations with Numbers Written in Scientific Notation 7–8 M1 Lesson 16: Applications with Numbers Written in Scientific Notation 7–8 M1 Lesson 17: Get to the Point

Expressions and Equations

Analyze and solve linear equations and inequalities.

North Carolina Standard Course of Study–Mathematics	Aligned Components of *Eureka Math²*
NC.8.EE.7 Solve real-world and mathematical problems by writing and solving equations and inequalities in one variable. • 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.	7–8 M2 Lesson 6: Expressing Repeating Decimals as Fractions 7–8 M2 Lesson 7: Solving Multi-Step Equations 7–8 M2 Lesson 8: Solving Equations with Rational Coefficients 7–8 M2 Lesson 9: Linear Equations with More Than One Solution 7–8 M2 Lesson 10: Another Possible Number of Solutions 7–8 M2 Lesson 11: Using Linear Equations to Solve Real-World Problems A1 M1 Lesson 11: Writing and Solving Linear Inequalities in One Variable

Expressions and Equations

Analyze and solve pairs of simultaneous linear equations.

North Carolina Standard Course of Study–Mathematics	Aligned Components of *Eureka Math²*
NC.8.EE.8 Analyze and solve a system of two linear equations in two variables in slope-intercept form. • 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.	7–8 M4 Lesson 11: Introduction to Systems of Linear Equations 7–8 M4 Lesson 12: Identifying Solutions 7–8 M4 Lesson 13: More Than One Solution 7–8 M4 Lesson 20: Modeling a Real-World Problem

Geometry

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

North Carolina Standard Course of Study–Mathematics	Aligned Components of *Eureka Math²*
NC.7.G.1 Solve problems involving scale drawings of geometric figures by: • Building an understanding that angle measures remain the same and side lengths are proportional. • Using a scale factor to compute actual lengths and areas from a scale drawing. • Creating a scale drawing.	7–8 M3 Lesson 18: Scale Drawings 7–8 M3 Lesson 19: Finding Actual Distances from a Scale Drawing 7–8 M3 Lesson 20: Scale and Scale Factor 7–8 M3 Lesson 21: Modeling with Scale Drawings 7–8 M3 Lesson 22: Dilations *Supplemental material is needed to fully address angle measures remaining the same when solving problems involving scale drawings of geometric figures.*
NC.7.G.2 Understand the characteristics of angles and side lengths that create a unique triangle, more than one triangle or no triangle. Build triangles from three measures of angles and/or sides.	7–8 M3 Lesson 1: Sketching and Constructing Geometric Figures 7–8 M3 Lesson 2: Conditions of Unique Triangles

Geometry

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

North Carolina Standard Course of Study–Mathematics	Aligned Components of *Eureka Math²*
NC.7.G.4 Understand area and circumference 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.	7–8 M3 Lesson 3: Exploring and Constructing Circles 7–8 M3 Lesson 4: Area and Circumference of a Circle 7–8 M3 Lesson 5: Area and Circumference of Circular Regions 7–8 M3 Lesson 6: 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.	7–8 M2 Lesson 1: Finding Unknown Angle Measures 7–8 M2 Lesson 2: Using Equivalent Expressions to Solve Equations 7–8 M2 Lesson 7: Solving Multi-Step Equations
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.	7–8 M5 Lesson 11: Surface Areas of Prisms and Pyramids 7–8 M5 Lesson 16: Volume of Prisms 7–8 M5 Lesson 18: Designing a Fish Tank 7–8 M5 Lesson 19: Volumes of Pyramids and Cones 7–8 M5 Lesson 21: Volume of Composite Solids *Supplemental material is needed to fully address perimeter of two-dimensional objects.*

Geometry

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

North Carolina Standard Course of Study–Mathematics	Aligned Components of *Eureka Math²*
NC.8.G.2 Use transformations to define congruence. • 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.	7–8 M3 Lesson 7: Motions of the Plane 7–8 M3 Lesson 8: Translations, Reflections, and Rotations 7–8 M3 Lesson 9: Rigid Motions on the Coordinate Plane 7–8 M3 Lesson 10: Sequencing the Rigid Motions 7–8 M3 Lesson 11: Showing Figures Are Congruent 7–8 M3 Lesson 12: Lines Cut by a Transversal
NC.8.G.3 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.	7–8 M3 Lesson 9: Rigid Motions on the Coordinate Plane 7–8 M3 Lesson 22: Dilations 7–8 M3 Lesson 23: Using Lined Paper to Explore Dilations 7–8 M3 Lesson 24: Figures and Dilations 7–8 M3 Lesson 25: The Shadowy Hand 7–8 M3 Lesson 26: Dilations on the Coordinate Plane

North Carolina Standard Course of Study–Mathematics	Aligned Components of *Eureka Math²*
NC.8.G.4 Use transformations to define similarity. • 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.	7–8 M3 Lesson 27: Similar Figures 7–8 M3 Lesson 28: Exploring Angles in Similar Triangles

Geometry

Analyze angle relationships.

North Carolina Standard Course of Study–Mathematics	Aligned Components of *Eureka Math²*
NC.8.G.5 Use informal arguments to analyze angle relationships. • 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.	7–8 M3 Lesson 12: Lines Cut by a Transversal 7–8 M3 Lesson 13: Angle Sum of a Triangle 7–8 M3 Lesson 14: Exterior Angles of Triangles 7–8 M3 Lesson 28: Exploring Angles in Similar Triangles 7–8 M3 Lesson 29: Using Similar Figures to Find Unknown Side Lengths *Supplemental material is needed to address solving real-world problems involving angles.*

Geometry

Understand and apply the Pythagorean Theorem.

North Carolina Standard Course of Study–Mathematics	Aligned Components of *Eureka Math²*
NC.8.G.6 Explain the Pythagorean Theorem and its converse.	7–8 M3 Lesson 15: Proving the Pythagorean Theorem 7–8 M3 Lesson 16: Proving the Converse of the Pythagorean Theorem

North Carolina Standard Course of Study–Mathematics	Aligned Components of *Eureka Math²*
NC.8.G.7 Apply the Pythagorean Theorem and its converse to solve real-world and mathematical problems.	7–8 M1 Lesson 19: The Pythagorean Theorem 7–8 M3 Lesson 16: Proving the Converse of the Pythagorean Theorem 7–8 M3 Lesson 17: Applications of the Pythagorean Theorem 7–8 M3 Lesson 29: Using Similar Figures to Find Unknown Side Lengths 7–8 M5 Lesson 19: Volumes of Pyramids and Cones *Supplemental material is needed to address solving real-world problems involving the converse of the Pythagorean Theorem.*
NC.8.G.8 Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.	7–8 M3 Lesson 17: Applications of the Pythagorean Theorem

Geometry

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

North Carolina Standard Course of Study–Mathematics	Aligned Components of *Eureka Math²*
NC.8.G.9 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.	7–8 M5 Lesson 16: Volume of Prisms 7–8 M5 Lesson 17: Volume of Cylinders 7–8 M5 Lesson 18: Designing a Fish Tank 7–8 M5 Lesson 19: Volumes of Pyramids and Cones 7–8 M5 Lesson 20: Volume of Spheres 7–8 M5 Lesson 21: Volume of Composite Solids 7–8 M5 Lesson 22: Volumes of Truncated Cones and Pyramids 7–8 M5 Lesson 23: Applications of Volume

Statistics and Probability

Use random sampling to draw inferences about a population.

North Carolina Standard Course of Study–Mathematics	Aligned Components of *Eureka Math²*
NC.7.SP.1 Understand that statistics can be used to gain information about a population by: • Recognizing that generalizations about a population from a sample are valid only if the sample is representative of that population. • Using random sampling to produce representative samples to support valid inferences.	7–8 M6 Lesson 10: Populations and Samples 7–8 M6 Lesson 11: Selecting a Sample 7–8 M6 Lesson 12: Sampling Variability When Estimating a Population Mean
NC.7.SP.2 Generate multiple random samples (or simulated 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.	7–8 M6 Lesson 12: Sampling Variability When Estimating a Population Mean 7–8 M6 Lesson 13: Sampling Variability and the Effect of Sample Size 7–8 M6 Lesson 14: Sampling Variability When Estimating a Population Proportion

Statistics and Probability

Make informal inferences to compare two populations.

North Carolina Standard Course of Study–Mathematics	Aligned Components of *Eureka Math²*
NC.7.SP.3 Recognize the role of variability when comparing two populations.	*This standard is fully addressed by the lessons aligned to its subsections.*

North Carolina Standard Course of Study–Mathematics	Aligned Components of *Eureka Math²*
NC.7.SP.3.a 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.	6 M6 Lesson 2: Describing a Data Distribution 6 M6 Lesson 13: Using the Interquartile Range to Describe Variability 7–8 M6 Lesson 15: Comparing Sample Means 7–8 M6 Lesson 16: Comparing Population Means 7–8 M6 Lesson 17: Memory Games
NC.7.SP.3.b Informally assess the difference between two data sets by examining the overlap and separation between the graphical representations of two data sets.	7–8 M6 Lesson 15: Comparing Sample Means 7–8 M6 Lesson 16: Comparing Population Means 7–8 M6 Lesson 17: Memory Games
NC.7.SP.4 Use measures of center and measures of variability for numerical data from random samples to draw comparative inferences about two populations.	7–8 M6 Lesson 15: Comparing Sample Means 7–8 M6 Lesson 16: Comparing Population Means 7–8 M6 Lesson 17: Memory Games

Statistics and Probability

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

North Carolina Standard Course of Study–Mathematics	Aligned Components of *Eureka Math²*
NC.7.SP.5 Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring.	7–8 M6 Lesson 1: What Is Probability?
NC.7.SP.6 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.	7–8 M6 Lesson 1: What Is Probability? 7–8 M6 Lesson 2: Outcomes of Chance Experiments 7–8 M6 Lesson 5: Outcomes That Are Not Equally Likely 7–8 M6 Lesson 7: Picking Blue
NC.7.SP.7 Develop a probability model and use it to find probabilities of simple events.	7–8 M6 Lesson 6: The Law of Large Numbers
NC.7.SP.7.a Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events.	7–8 M6 Lesson 3: Theoretical Probability 7–8 M6 Lesson 6: The Law of Large Numbers
NC.7.SP.7.b Develop a probability model (which may not be uniform) by repeatedly performing a chance process and observing frequencies in the data generated.	7–8 M6 Lesson 6: The Law of Large Numbers 7–8 M6 Lesson 7: Picking Blue

North Carolina Standard Course of Study–Mathematics	Aligned Components of *Eureka Math²*
NC.7.SP.7.c Compare theoretical and experimental probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy.	7–8 M6 Lesson 6: The Law of Large Numbers
NC.7.SP.8 Determine probabilities of compound events using organized lists, tables, tree diagrams, and simulation.	*This standard is fully addressed by the lessons aligned to its subsections.*
NC.7.SP.8.a Understand that, just as with simple events, the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs.	7–8 M6 Lesson 4: Multistage Experiments
NC.7.SP.8.b For an event described in everyday language, identify the outcomes in the sample space which compose the event, when the sample space is represented using organized lists, tables, and tree diagrams.	7–8 M6 Lesson 4: Multistage Experiments
NC.7.SP.8.c Design and use a simulation to generate frequencies for compound events.	7–8 M6 Lesson 8: Probability Simulations 7–8 M6 Lesson 9: Simulations with Random Number Tables

Statistics and Probability

Investigate patterns of association in bivariate data.

North Carolina Standard Course of Study–Mathematics	Aligned Components of *Eureka Math²*
NC.8.SP.1 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.	7–8 M6 Lesson 18: Scatter Plots 7–8 M6 Lesson 19: Patterns in Scatter Plots
NC.8.SP.2 Model the relationship between bivariate quantitative data to: • 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.	7–8 M6 Lesson 20: Informally Fitting a Line to Data 7–8 M6 Lesson 21: Linear Models
NC.8.SP.3 Use the equation of a linear model to solve problems in the context of bivariate quantitative data, interpreting the slope and y-intercept.	7–8 M6 Lesson 20: Informally Fitting a Line to Data 7–8 M6 Lesson 21: Linear Models

North Carolina Standard Course of Study–Mathematics	Aligned Components of *Eureka Math²*
NC.8.SP.4 Understand that patterns of association can also be seen in bivariate categorical data by displaying frequencies and relative frequencies in a two-way table. • 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.	7–8 M6 Lesson 22: Bivariate Categorical Data 7–8 M6 Lesson 23: Association in Bivariate Categorical Data 7–8 M6 Lesson 24: Analyzing Bivariate Categorical Data

Functions

Define, evaluate, and compare functions.

North Carolina Standard Course of Study–Mathematics	Aligned Components of *Eureka Math²*
NC.8.F.1 Understand that a function is a rule that assigns to each input exactly one output. • 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.	7–8 M5 Lesson 1: Motion and Speed 7–8 M5 Lesson 2: Definition of a Function 7–8 M5 Lesson 4: More Examples of Functions 7–8 M5 Lesson 5: Graphs of Functions and Equations

North Carolina Standard Course of Study–Mathematics	Aligned Components of *Eureka Math²*
NC.8.F.2 Compare properties of two linear functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions).	7–8 M5 Lesson 7: Interpreting Rate of Change and Initial Value 7–8 M5 Lesson 8: Comparing Functions
NC.8.F.3 Identify linear functions from tables, equations, and graphs.	7–8 M5 Lesson 3: Linear Functions and Proportionality 7–8 M5 Lesson 6: Linear Functions and Rate of Change 7–8 M5 Lesson 10: Graphs of Nonlinear Functions

Functions

Use functions to model relationships between quantities.

North Carolina Standard Course of Study–Mathematics	Aligned Components of *Eureka Math²*
NC.8.F.4 Analyze functions that model linear relationships. • 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.	7–8 M4 Lesson 5: Proportional Relationships and Slope 7–8 M4 Lesson 6: Slopes of Rising Lines and Falling Lines 7–8 M4 Lesson 7: Using Coordinates to Find Slope 7–8 M4 Lesson 8: Slope-Intercept Form of the Equation of a Line 7–8 M5 Lesson 5: Graphs of Functions and Equations 7–8 M5 Lesson 6: Linear Functions and Rate of Change 7–8 M5 Lesson 7: Interpreting Rate of Change and Initial Value 7–8 M5 Lesson 23: Applications of Volume
NC.8.F.5 Qualitatively analyze the functional relationship between two quantities. • 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.	7–8 M5 Lesson 9: Increasing and Decreasing Functions 7–8 M5 Lesson 10: Graphs of Nonlinear Functions