North Carolina Tutorials are designed specifically for the Common Core State Standards for English language arts, the North Carolina Standard Course of Study for Math, and the North Carolina Essential Standards, to prepare students for the READY End-of-Course Assessments.

Math Tutorials offer targeted instruction, practice and review designed to develop computational fluency, deepen conceptual understanding, and apply mathematical practices. They automatically identify and address learning gaps down to elementary-level content, using adaptive remediation to bring students to grade-level no matter where they start. Students engage with the content in an interactive, feedback-rich environment as they progress through standards-aligned modules. By constantly honing the ability to apply their knowledge in abstract and real world scenarios, students build the depth of knowledge and higher order skills required to demonstrate their mastery when put to the test.

In each module, the Learn It and Try It make complex ideas accessible to students through focused content, modeled logic and process, multi-modal representations, and personalized feedback as students reason through increasingly challenging problems. The Review It offers a high impact summary of key concepts and relates those concepts to students' lives. The Test It assesses students' mastery of the module's concepts, providing granular performance data to students and teachers after each attempt. To help students focus on the content most relevant to them, unit-level pretests and posttests can quickly identify where students are strong and where they're still learning.

Unit 1: Ratios and Rates

- **RATIOS**
  - NC.6.RP.1.i: Ratio and Proportional Relationships Understand ratio concepts and use ratio reasoning to solve problems. Understand the concept of a ratio and use ratio language to: Describe a ratio as a multiplicative relationship between two quantities.
  - NC.6.RP.1.ii: Ratio and Proportional Relationships Understand ratio concepts and use ratio reasoning to solve problems. Understand the concept of a ratio and use ratio language to: Model a ratio relationship using a variety of representations.
  - NC.6.RP.3.i: Ratio and Proportional Relationships Understand ratio concepts and use ratio reasoning to solve problems. Use ratio reasoning with equivalent whole-number ratios to solve real-world and mathematical problems by: Creating and using a table to compare ratios.
  - NC.6.RP.3.ii: Ratio and Proportional Relationships Understand ratio concepts and use ratio reasoning to solve problems. Use ratio reasoning with equivalent whole-number ratios to solve real-world and mathematical problems by: Finding missing values in the tables.
  - NC.6.RP.3.v: Ratio and Proportional Relationships Understand ratio concepts and use ratio reasoning to solve problems. Use ratio reasoning with equivalent whole-number ratios to solve real-world and

mathematical problems by: Plotting the pairs of values on the coordinate plane.

- NC.6.NS.8: The Number System Apply and extend previous understandings of numbers to the system of rational numbers. 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.
- NC.6.NS.6.b.3: The Number System Apply and extend previous understandings of numbers to the system of rational numbers. Understand rational numbers as points on the number line and as ordered pairs on a coordinate plane. On a coordinate plane: Find and position pairs of rational numbers on a coordinate plane.
- NC.6.NS.7.b: The Number System Apply and extend previous understandings of numbers to the system of rational numbers. Understand ordering of rational numbers. Write, interpret, and explain statements of order for rational numbers in real-world contexts.

- **RATES AND UNIT RATES**
  - NC.6.RP.2: Ratio and Proportional Relationships Understand ratio concepts and use ratio reasoning to solve problems. Understand that ratios can be expressed as equivalent unit ratios by finding and interpreting both unit ratios in context.
  - NC.6.RP.3.iii: Ratio and Proportional Relationships Understand ratio concepts and use ratio reasoning to solve problems. Use ratio reasoning with equivalent whole-number ratios to solve real-world and mathematical problems by: Using a unit ratio.

Unit 2: Percents and Conversions

- **SOLVING PERCENT PROBLEMS**
  - NC.6.RP.4.i: Ratio and Proportional Relationships Understand ratio concepts and use ratio reasoning to solve problems. 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.
  - NC.6.RP.4.iii: Ratio and Proportional Relationships Understand ratio concepts and use ratio reasoning to solve problems. Use ratio reasoning to solve real-world and mathematical problems with percents by: Finding the whole, given a part and the percent.
- **UNIT CONVERSIONS**
  - NC.6.RP.3.iv: Ratio and Proportional Relationships Understand ratio concepts and use ratio reasoning to solve problems. Use ratio reasoning with equivalent whole-number ratios to solve real-world and mathematical problems by: Converting and manipulating measurements using given ratios.

Unit 3: Rational Numbers

- **ADDING RATIONAL NUMBERS**
  - NC.6.NS.6.a.1: The Number System Apply and extend previous understandings of numbers to the system of rational numbers. Understand rational numbers as points on the number line and as ordered pairs on a coordinate plane. On a number line: Recognize opposite signs of numbers as indicating locations on opposite sides of 0 and that the opposite of the opposite of a number is the number itself.

- NC.6.NS.9.i: The Number System Apply and extend previous understandings of numbers to the system of rational numbers. Apply and extend previous understandings of addition and subtraction. Describe situations in which opposite quantities combine to make 0.
- NC.6.NS.9.ii: The Number System Apply and extend previous understandings of numbers to the system of rational numbers. Apply and extend previous understandings of addition and subtraction. Understand + 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.
- NC.6.NS.9.iii: The Number System Apply and extend previous understandings of numbers to the system of rational numbers. Apply and extend previous understandings of addition and subtraction. Understand subtraction of integers as adding the additive inverse, - = + ( ). Show that the distance between two integers on the number line is the absolute value of their difference.
- NC.6.NS.9.iv: The Number System Apply and extend previous understandings of numbers to the system of rational numbers. Apply and extend previous understandings of addition and subtraction. Use models to add and subtract integers from -20 to 20 and describe real-world contexts using sums and differences.

- **SUBTRACTING RATIONAL NUMBERS**
  - NC.6.NS.9.i: The Number System Apply and extend previous understandings of numbers to the system of rational numbers. Apply and extend previous understandings of addition and subtraction. Describe situations in which opposite quantities combine to make 0.
  - NC.6.NS.9.ii: The Number System Apply and extend previous understandings of numbers to the system of rational numbers. Apply and extend previous understandings of addition and subtraction. Understand + 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.
  - NC.6.NS.9.iii: The Number System Apply and extend previous understandings of numbers to the system of rational numbers. Apply and extend previous understandings of addition and subtraction. Understand subtraction of integers as adding the additive inverse, - = + ( ). Show that the distance between two integers on the number line is the absolute value of their difference.
  - NC.6.NS.9.iv: The Number System Apply and extend previous understandings of numbers to the system of rational numbers. Apply and extend previous understandings of addition and subtraction. Use models to add and subtract integers from -20 to 20 and describe real-world contexts using sums and differences.

Unit 4: Dividing Fractions

- **DIVIDING FRACTIONS**
  - NC.6.NS.1.i: The Number System Apply and extend previous understandings of multiplication and division to divide fractions by fractions. Use visual models and common denominators to: Interpret and compute quotients of fractions.
  - NC.6.NS.1.ii: The Number System Apply and extend previous understandings of multiplication and division to divide fractions by fractions. Use visual models and common denominators to: Solve real-world and mathematical problems involving division of fractions.

- **SOLVING PROBLEMS BY DIVIDING FRACTIONS**
  - NC.6.NS.1.i: The Number System Apply and extend previous understandings of multiplication and division to divide fractions by fractions. Use visual models and common denominators to: Interpret and compute quotients of fractions.
  - NC.6.NS.1.ii: The Number System Apply and extend previous understandings of multiplication and division to divide fractions by fractions. Use visual models and common denominators to: Solve real-world and mathematical problems involving division of fractions.

Unit 5: Number Sense

- **DIVIDING MULTI-DIGIT WHOLE NUMBERS**
  - NC.6.NS.2: The Number System Compute fluently with multi-digit numbers and find common factors and multiples. Fluently divide using long division with a minimum of a four-digit dividend and interpret the quotient and remainder in context.
- **DECIMAL OPERATIONS**
  - NC.6.NS.3: The Number System Compute fluently with multi-digit numbers and find common factors and multiples. Apply and extend previous understandings of decimals to develop and fluently use the standard algorithms for addition, subtraction, multiplication and division of decimals.
- **GREATEST COMMON FACTOR AND LEAST COMMON MULTIPLE**
  - NC.6.NS.4.ii: The Number System Compute fluently with multi-digit numbers and find common factors and multiples. Understand and use prime factorization and the relationships between factors to: Find the greatest common factor of two whole numbers less than or equal to 100.
  - NC.6.NS.4.iii: The Number System Compute fluently with multi-digit numbers and find common factors and multiples. Understand and use prime factorization and the relationships between factors to: Use the greatest common factor and the distributive property to rewrite the sum of two whole numbers, each less than or equal to 100.
  - NC.6.NS.4.i: The Number System Compute fluently with multi-digit numbers and find common factors and multiples. Understand and use prime factorization and the relationships between factors to: Find the unique prime factorization for a whole number.
  - NC.6.NS.4.iv: The Number System Compute fluently with multi-digit numbers and find common factors and multiples. Understand and use prime factorization and the relationships between factors to: Find the least common multiple of two whole numbers less than or equal to 12 to add and subtract fractions with unlike denominators.

Unit 6: Signed Numbers

- **SIGNED NUMBERS**
  - NC.6.NS.5.i: The Number System Apply and extend previous understandings of numbers to the system of rational numbers. Understand and use rational numbers to: Describe quantities having opposite directions or values.

- NC.6.NS.6.a.1: The Number System Apply and extend previous understandings of numbers to the system of rational numbers. Understand rational numbers as points on the number line and as ordered pairs on a coordinate plane. On a number line: Recognize opposite signs of numbers as indicating locations on opposite sides of 0 and that the opposite of the opposite of a number is the number itself.
- NC.6.NS.5.ii: The Number System Apply and extend previous understandings of numbers to the system of rational numbers. Understand and use rational numbers to: Represent quantities in real-world contexts, explaining the meaning of 0 in each situation.

- **INEQUALITIES AND COMPARISON**
  - NC.6.NS.7.a: The Number System Apply and extend previous understandings of numbers to the system of rational numbers. Understand ordering of rational numbers. Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram.
  - NC.6.NS.6.a.1: The Number System Apply and extend previous understandings of numbers to the system of rational numbers. Understand rational numbers as points on the number line and as ordered pairs on a coordinate plane. On a number line: Recognize opposite signs of numbers as indicating locations on opposite sides of 0 and that the opposite of the opposite of a number is the number itself.
  - NC.6.EE.8.ii: Expressions and Equations Reason about one variable inequalities. Reason about inequalities by: Writing an inequality of the form x c or x c to represent a constraint or condition in a real-world or mathematical problem.
  - NC.6.NS.7.b: The Number System Apply and extend previous understandings of numbers to the system of rational numbers. Understand ordering of rational numbers. Write, interpret, and explain statements of order for rational numbers in real-world contexts.
- **ABSOLUTE VALUE**
  - NC.6.NS.5.iii.a: The Number System Apply and extend previous understandings of numbers to the system of rational numbers. Understand and use rational numbers to: Understand the absolute value of a rational number as its distance from 0 on the number line to: Interpret absolute value as magnitude for a positive or negative quantity in a real-world context.
  - NC.6.NS.6.a.1: The Number System Apply and extend previous understandings of numbers to the system of rational numbers. Understand rational numbers as points on the number line and as ordered pairs on a coordinate plane. On a number line: Recognize opposite signs of numbers as indicating locations on opposite sides of 0 and that the opposite of the opposite of a number is the number itself.
  - NC.6.NS.5.iii.b: The Number System Apply and extend previous understandings of numbers to the system of rational numbers. Understand and use rational numbers to: Understand the absolute value of a rational number as its distance from 0 on the number line to: Distinguish comparisons of absolute value from statements about order.
  - NC.6.NS.7.b: The Number System Apply and extend previous understandings of numbers to the system of rational numbers. Understand ordering of rational numbers. Write, interpret, and explain

statements of order for rational numbers in real-world contexts.

Unit 7: The Coordinate Plane

- **PLOTTING POINTS IN THE COORDINATE PLANE**
  - NC.6.NS.6.a.1: The Number System Apply and extend previous understandings of numbers to the system of rational numbers. Understand rational numbers as points on the number line and as ordered pairs on a coordinate plane. On a number line: Recognize opposite signs of numbers as indicating locations on opposite sides of 0 and that the opposite of the opposite of a number is the number itself.
  - NC.6.NS.6.a.2: The Number System Apply and extend previous understandings of numbers to the system of rational numbers. Understand rational numbers as points on the number line and as ordered pairs on a coordinate plane. On a number line: Find and position rational numbers on a horizontal or vertical number line.
  - NC.6.NS.8: The Number System Apply and extend previous understandings of numbers to the system of rational numbers. 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.
  - NC.6.NS.6.b.1: The Number System Apply and extend previous understandings of numbers to the system of rational numbers. Understand rational numbers as points on the number line and as ordered pairs on a coordinate plane. On a coordinate plane: Understand signs of numbers in ordered pairs as indicating locations in quadrants.
  - NC.6.NS.6.b.2: The Number System Apply and extend previous understandings of numbers to the system of rational numbers. Understand rational numbers as points on the number line and as ordered pairs on a coordinate plane. On a coordinate plane: Recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes.
  - NC.6.NS.6.b.3: The Number System Apply and extend previous understandings of numbers to the system of rational numbers. Understand rational numbers as points on the number line and as ordered pairs on a coordinate plane. On a coordinate plane: Find and position pairs of rational numbers on a coordinate plane.
  - NC.6.G.3.i: Geometry Solve real-world and mathematical problems involving area, surface area, and volume. Use the coordinate plane to solve real-world and mathematical problems by: Drawing polygons in the coordinate plane given coordinates for the vertices.
- **QUADRANTS AND AXES**
  - NC.6.NS.8: The Number System Apply and extend previous understandings of numbers to the system of rational numbers. 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.
  - NC.6.NS.6.b.1: The Number System Apply and extend previous understandings of numbers to the system of rational numbers. Understand rational numbers as points on the number line and as

ordered pairs on a coordinate plane. On a coordinate plane: Understand signs of numbers in ordered pairs as indicating locations in quadrants.

- NC.6.NS.6.b.3: The Number System Apply and extend previous understandings of numbers to the system of rational numbers. Understand rational numbers as points on the number line and as ordered pairs on a coordinate plane. On a coordinate plane: Find and position pairs of rational numbers on a coordinate plane.

- **USING GRAPHS TO SOLVE PROBLEMS**
  - NC.6.NS.8: The Number System Apply and extend previous understandings of numbers to the system of rational numbers. 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.
  - NC.6.NS.6.b.3: The Number System Apply and extend previous understandings of numbers to the system of rational numbers. Understand rational numbers as points on the number line and as ordered pairs on a coordinate plane. On a coordinate plane: Find and position pairs of rational numbers on a coordinate plane.
  - NC.6.G.3.ii: Geometry Solve real-world and mathematical problems involving area, surface area, and volume. Use the coordinate plane to solve real-world and mathematical problems by: Using coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate.

Unit 8: Numerical and Algebraic Expressions

- **EXPONENTS**
  - NC.6.EE.1: Expressions and Equations Apply and extend previous understandings of arithmetic to algebraic expressions. Write and evaluate numerical expressions, with and without grouping symbols, involving whole-number exponents.
  - NC.6.EE.2.iii: Expressions and Equations Apply and extend previous understandings of arithmetic to algebraic expressions. Write, read, and evaluate algebraic expressions. Evaluate expressions at specific values of their variables using expressions that arise from formulas used in real-world problems.
- **UNDERSTANDING PARTS OF EXPRESSIONS**
  - NC.6.EE.2.ii: Expressions and Equations Apply and extend previous understandings of arithmetic to algebraic expressions. Write, read, and evaluate algebraic expressions. Identify parts of an expression using mathematical terms and view one or more of those parts as a single entity.

Unit 9: Writing and Evaluating Expressions

- **WRITING EXPRESSIONS**
  - NC.6.EE.2.i: Expressions and Equations Apply and extend previous understandings of arithmetic to algebraic expressions. Write, read, and evaluate algebraic expressions. Write expressions that record operations with numbers and with letters standing for numbers.

- NC.6.EE.6: Expressions and Equations Reason about and solve one-variable equations. Use variables to represent numbers and write expressions when solving a real-world or mathematical problem.
- NC.6.EE.9.i: Expressions and Equations Represent and analyze quantitative relationships between dependent and independent variables. 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.
- NC.6.EE.7.i: Expressions and Equations Reason about and solve one-variable equations. Solve real-world and mathematical problems by writing and solving equations of the form: + = in which p, q and x are all nonnegative rational numbers; and,
- NC.6.EE.7.ii: Expressions and Equations Reason about and solve one-variable equations. Solve real-world and mathematical problems by writing and solving equations of the form: = for cases in which p, q and x are all nonnegative rational numbers.

- **EVALUATING EXPRESSIONS**
  - NC.6.EE.2.iii: Expressions and Equations Apply and extend previous understandings of arithmetic to algebraic expressions. Write, read, and evaluate algebraic expressions. Evaluate expressions at specific values of their variables using expressions that arise from formulas used in real-world problems.
- **EQUIVALENT EXPRESSIONS**
  - NC.6.EE.3: Expressions and Equations Apply and extend previous understandings of arithmetic to algebraic expressions. Apply the properties of operations to generate equivalent expressions without exponents.
  - NC.6.EE.4: Expressions and Equations Apply and extend previous understandings of arithmetic to algebraic expressions. Identify when two expressions are equivalent and justify with mathematical reasoning.

Unit 10: Expressions and Equations

- **WRITING EXPRESSIONS TO SOLVE PROBLEMS**
  - NC.6.EE.2.i: Expressions and Equations Apply and extend previous understandings of arithmetic to algebraic expressions. Write, read, and evaluate algebraic expressions. Write expressions that record operations with numbers and with letters standing for numbers.
  - NC.6.EE.6: Expressions and Equations Reason about and solve one-variable equations. Use variables to represent numbers and write expressions when solving a real-world or mathematical problem.
  - NC.6.EE.7.i: Expressions and Equations Reason about and solve one-variable equations. Solve real-world and mathematical problems by writing and solving equations of the form: + = in which p, q and x are all nonnegative rational numbers; and,
  - NC.6.EE.7.ii: Expressions and Equations Reason about and solve one-variable equations. Solve real-world and mathematical problems by writing and solving equations of the form: = for cases in which p, q and x are all nonnegative rational numbers.

- NC.6.EE.9.i: Expressions and Equations Represent and analyze quantitative relationships between dependent and independent variables. 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.
- NC.6.EE.9.ii: Expressions and Equations Represent and analyze quantitative relationships between dependent and independent variables. Represent and analyze quantitative relationships by: Analyze the relationship between quantities in different representations (context, equations, tables, and graphs).

- **INDEPENDENT AND DEPENDENT VARIABLES**
  - NC.6.EE.2.i: Expressions and Equations Apply and extend previous understandings of arithmetic to algebraic expressions. Write, read, and evaluate algebraic expressions. Write expressions that record operations with numbers and with letters standing for numbers.
  - NC.6.EE.6: Expressions and Equations Reason about and solve one-variable equations. Use variables to represent numbers and write expressions when solving a real-world or mathematical problem.
  - NC.6.EE.9.i: Expressions and Equations Represent and analyze quantitative relationships between dependent and independent variables. 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.
  - NC.6.EE.9.ii: Expressions and Equations Represent and analyze quantitative relationships between dependent and independent variables. Represent and analyze quantitative relationships by: Analyze the relationship between quantities in different representations (context, equations, tables, and graphs).
- **MULTIPLE REPRESENTATIONS: TABLES, GRAPHS, AND EQUATIONS**
  - NC.6.EE.9.ii: Expressions and Equations Represent and analyze quantitative relationships between dependent and independent variables. Represent and analyze quantitative relationships by: Analyze the relationship between quantities in different representations (context, equations, tables, and graphs).
  - NC.6.EE.9.i: Expressions and Equations Represent and analyze quantitative relationships between dependent and independent variables. 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.

Unit 11: Solving Equations

- **SOLVING ADDITION EQUATIONS**
  - NC.6.EE.7.i: Expressions and Equations Reason about and solve one-variable equations. Solve real-world and mathematical problems by writing and solving equations of the form: + = in which p, q and x are all nonnegative rational numbers; and,
  - NC.6.EE.7.ii: Expressions and Equations Reason about and solve one-variable equations. Solve real-world and mathematical problems by writing and solving equations of the form: = for cases in which p, q and x are all nonnegative rational numbers.

- **SOLVING MULTIPLICATION EQUATIONS**
  - NC.6.EE.7.ii: Expressions and Equations Reason about and solve one-variable equations. Solve real-world and mathematical problems by writing and solving equations of the form: = for cases in which p, q and x are all nonnegative rational numbers.

Unit 12: Solving Inequalities

- **SOLUTIONS OF EQUATIONS AND INEQUALITIES**
  - NC.6.EE.5: Expressions and Equations Reason about and solve one-variable equations. Use substitution to determine whether a given number in a specified set makes an equation true.
  - NC.6.EE.7.i: Expressions and Equations Reason about and solve one-variable equations. Solve real-world and mathematical problems by writing and solving equations of the form: + = in which p, q and x are all nonnegative rational numbers; and,
  - NC.6.EE.7.ii: Expressions and Equations Reason about and solve one-variable equations. Solve real-world and mathematical problems by writing and solving equations of the form: = for cases in which p, q and x are all nonnegative rational numbers.
  - NC.6.EE.8.i: Expressions and Equations Reason about one variable inequalities. Reason about inequalities by: Using substitution to determine whether a given number in a specified set makes an inequality true.
- **SOLVING INEQUALITIES**
  - NC.6.EE.5: Expressions and Equations Reason about and solve one-variable equations. Use substitution to determine whether a given number in a specified set makes an equation true.
  - NC.6.EE.8.i: Expressions and Equations Reason about one variable inequalities. Reason about inequalities by: Using substitution to determine whether a given number in a specified set makes an inequality true.
  - NC.6.EE.8.iv: Expressions and Equations Reason about one variable inequalities. Reason about inequalities by: Representing solutions of inequalities on number line diagrams.
  - NC.6.EE.8.ii: Expressions and Equations Reason about one variable inequalities. Reason about inequalities by: Writing an inequality of the form x c or x c to represent a constraint or condition in a real-world or mathematical problem.

Unit 13: Two-Dimensional Geometry

- **AREA**
  - NC.6.G.1.i: Geometry Solve real-world and mathematical problems involving area, surface area, and volume. 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.
  - NC.6.G.1.ii: Geometry Solve real-world and mathematical problems involving area, surface area, and volume. Create geometric models to solve real-world and mathematical problems to: Find the area of special quadrilaterals and polygons by decomposing into triangles or rectangles.
- **COORDINATE GEOMETRY**

- NC.6.NS.8: The Number System Apply and extend previous understandings of numbers to the system of rational numbers. 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.
- NC.6.NS.6.b.3: The Number System Apply and extend previous understandings of numbers to the system of rational numbers. Understand rational numbers as points on the number line and as ordered pairs on a coordinate plane. On a coordinate plane: Find and position pairs of rational numbers on a coordinate plane.
- NC.6.G.3.i: Geometry Solve real-world and mathematical problems involving area, surface area, and volume. Use the coordinate plane to solve real-world and mathematical problems by: Drawing polygons in the coordinate plane given coordinates for the vertices.
- NC.6.G.3.ii: Geometry Solve real-world and mathematical problems involving area, surface area, and volume. Use the coordinate plane to solve real-world and mathematical problems by: Using coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate.

Unit 14: Three-Dimensional Geometry

- **VOLUME**
  - NC.6.G.2: Geometry Solve real-world and mathematical problems involving area, surface area, and volume. 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.
- **SOLID FIGURES**
  - NC.6.G.4: Geometry Solve real-world and mathematical problems involving area, surface area, and volume. 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.

Unit 15: Introduction to Statistics

- **STATISTICAL QUESTIONS AND DATA DISTRIBUTIONS**
  - NC.6.SP.1: Statistics and Probability Develop understanding of statistical variability. Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers.
  - NC.6.SP.2: Statistics and Probability Develop understanding of statistical variability. Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape.
  - NC.6.SP.3.a.1: Statistics and Probability Develop understanding of statistical variability. Understand that both a measure of center and a description of variability should be considered when describing a numerical data set. 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.

- NC.6.SP.3.a.2: Statistics and Probability Develop understanding of statistical variability. Understand that both a measure of center and a description of variability should be considered when describing a numerical data set. 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 the median as a measure of center that is the numerical middle of an ordered data set.
- NC.6.SP.5.b.1: Statistics and Probability Summarize and describe distributions. Summarize numerical data sets in relation to their context. Analyze center and variability by: Giving quantitative measures of center, describing variability, and any overall pattern, and noting any striking deviations.
- NC.6.SP.5.a.2: Statistics and Probability Summarize and describe distributions. Summarize numerical data sets in relation to their context. Describe the collected data by: Communicating the nature of the attribute under investigation, how it was measured, and the units of measurement.
- NC.6.SP.5.b.2: Statistics and Probability Summarize and describe distributions. Summarize numerical data sets in relation to their context. Analyze center and variability by: Justifying the appropriate choice of measures of center using the shape of the data distribution.

- **MEASURES OF CENTER AND VARIABILITY**
  - NC.6.SP.2: Statistics and Probability Develop understanding of statistical variability. Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape.
  - NC.6.SP.3.a.1: Statistics and Probability Develop understanding of statistical variability. Understand that both a measure of center and a description of variability should be considered when describing a numerical data set. 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.
  - NC.6.SP.4.ii: Statistics and Probability Summarize and describe distributions. Display numerical data in plots on a number line. Compare the attributes of different representations of the same data.
  - NC.6.SP.5.b.1: Statistics and Probability Summarize and describe distributions. Summarize numerical data sets in relation to their context. Analyze center and variability by: Giving quantitative measures of center, describing variability, and any overall pattern, and noting any striking deviations.

Unit 16: Displaying Data

- **BOX PLOTS**
  - NC.6.SP.3.a.2: Statistics and Probability Develop understanding of statistical variability. Understand that both a measure of center and a description of variability should be considered when describing a numerical data set. 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 the median as a measure of center that is the numerical middle of an ordered data set.

- NC.6.SP.4.i: Statistics and Probability Summarize and describe distributions. Display numerical data in plots on a number line. Use dot plots, histograms, and box plots to represent data.
- NC.6.SP.5.b.1: Statistics and Probability Summarize and describe distributions. Summarize numerical data sets in relation to their context. Analyze center and variability by: Giving quantitative measures of center, describing variability, and any overall pattern, and noting any striking deviations.
- NC.6.SP.5.a.2: Statistics and Probability Summarize and describe distributions. Summarize numerical data sets in relation to their context. Describe the collected data by: Communicating the nature of the attribute under investigation, how it was measured, and the units of measurement.
- NC.6.SP.2: Statistics and Probability Develop understanding of statistical variability. Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape.

- **DOT PLOTS AND HISTOGRAMS**
  - NC.6.SP.4.i: Statistics and Probability Summarize and describe distributions. Display numerical data in plots on a number line. Use dot plots, histograms, and box plots to represent data.
  - NC.6.SP.5.a.1: Statistics and Probability Summarize and describe distributions. Summarize numerical data sets in relation to their context. Describe the collected data by: Reporting the number of observations in dot plots and histograms.
  - NC.6.SP.5.a.2: Statistics and Probability Summarize and describe distributions. Summarize numerical data sets in relation to their context. Describe the collected data by: Communicating the nature of the attribute under investigation, how it was measured, and the units of measurement.
  - NC.6.SP.4.ii: Statistics and Probability Summarize and describe distributions. Display numerical data in plots on a number line. Compare the attributes of different representations of the same data.

Unit 17: Summarizing Data

- **COLLECTING DATA**
  - NC.6.SP.5.a.1: Statistics and Probability Summarize and describe distributions. Summarize numerical data sets in relation to their context. Describe the collected data by: Reporting the number of observations in dot plots and histograms.
  - NC.6.SP.5.a.2: Statistics and Probability Summarize and describe distributions. Summarize numerical data sets in relation to their context. Describe the collected data by: Communicating the nature of the attribute under investigation, how it was measured, and the units of measurement.
  - NC.6.SP.4.ii: Statistics and Probability Summarize and describe distributions. Display numerical data in plots on a number line. Compare the attributes of different representations of the same data.
- **SUMMARIZING DATA USING MEASURES OF CENTER AND VARIABILITY**
  - NC.6.SP.3.a.1: Statistics and Probability Develop understanding of statistical variability. Understand that both a measure of center and a description of variability should be considered when describing a numerical data set. 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.

- NC.6.SP.3.a.2: Statistics and Probability Develop understanding of statistical variability. Understand that both a measure of center and a description of variability should be considered when describing a numerical data set. 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 the median as a measure of center that is the numerical middle of an ordered data set.
- NC.6.SP.4.ii: Statistics and Probability Summarize and describe distributions. Display numerical data in plots on a number line. Compare the attributes of different representations of the same data.
- NC.6.SP.5.b.1: Statistics and Probability Summarize and describe distributions. Summarize numerical data sets in relation to their context. Analyze center and variability by: Giving quantitative measures of center, describing variability, and any overall pattern, and noting any striking deviations.
- NC.6.SP.2: Statistics and Probability Develop understanding of statistical variability. Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape.
- NC.6.SP.3.b: Statistics and Probability Develop understanding of statistical variability. Understand that both a measure of center and a description of variability should be considered when describing a numerical data set. 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.

- **CHOOSING APPROPRIATE MEASURES TO SUMMARIZE DATA SETS**
  - NC.6.SP.2: Statistics and Probability Develop understanding of statistical variability. Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape.
  - NC.6.SP.3.a.1: Statistics and Probability Develop understanding of statistical variability. Understand that both a measure of center and a description of variability should be considered when describing a numerical data set. 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.
  - NC.6.SP.3.a.2: Statistics and Probability Develop understanding of statistical variability. Understand that both a measure of center and a description of variability should be considered when describing a numerical data set. 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 the median as a measure of center that is the numerical middle of an ordered data set.
  - NC.6.SP.5.b.1: Statistics and Probability Summarize and describe distributions. Summarize numerical data sets in relation to their context. Analyze center and variability by: Giving quantitative measures of center, describing variability, and any overall pattern, and noting any striking deviations.

- NC.6.SP.5.b.2: Statistics and Probability Summarize and describe distributions. Summarize numerical data sets in relation to their context. Analyze center and variability by: Justifying the appropriate choice of measures of center using the shape of the data distribution.
- NC.6.SP.3.b: Statistics and Probability Develop understanding of statistical variability. Understand that both a measure of center and a description of variability should be considered when describing a numerical data set. 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.
- NC.6.SP.4.ii: Statistics and Probability Summarize and describe distributions. Display numerical data in plots on a number line. Compare the attributes of different representations of the same data.