



North Carolina Essential Standards Mathematics Grade 6

Note on Numbering: **N**–Number and Operations, **A**–Algebra, **G**–Geometry, **M**–Measurement, **S**–Statistics and Probability and **D**–Discrete Mathematics

Number and Operations

	Essential Standard	Clarifying Objectives	
6.N.1	Use a variety of strategies (including models, pictures, mental computation) to solve problems involving multiplication and division of non-negative rational numbers.	6.N.1.1	Apply multiplication and division to non-negative decimal numbers.
		6.N.1.2	Apply multiplication and division to non-negative fractions.
6.N.2	Use combinations of addition, subtraction, multiplication and division for non-negative rational numbers to solve multi-step problems.	6.N.2.1	Use formal algorithms for all four operations for non-negative rational numbers.
		6.N.2.2	Understand when the associative and commutative properties hold true for non-negative rational numbers.
6.N.3	Understand the relationship between integers, non-negative decimals, fractions and percents.	6.N.3.1	Compare integers and non-negative decimals, fractions and percents using the number line.
		6.N.3.2	Represent percents as decimals and fractions; fractions as decimals and percents; and decimals as fractions and percents.
6.N.4	Use the concept of unit rate to solve problems.	6.N.4.1	Use ratio tables or graphs to represent unit rates.
		6.N.4.2	Use unit rates to solve problems.
6.N.5	Understand large and small numbers using exponents and exponential notation.	6.N.5.1	Represent numbers using scientific notation.
		6.N.5.2	Represent numbers as prime factors with exponents.
		6.N.5.3	Compare numeric expressions using repeated multiplication and exponential notation.

Algebra

	Essential Standard	Clarifying Objectives	
6.A.1	Apply mathematical operations and properties for non-negative rational numbers to solve one-step equations and inequalities.	6.A.1.1	Use verbal descriptions and algebraic equations and inequalities to represent problem situations.
		6.A.1.2	Use mathematical operations and properties to solve one-step equations.
		6.A.1.3	Use mathematical operations and properties to solve inequalities.
6.A.2	Analyze patterns to determine the rule that enables accurate predictions of missing numbers, including the n^{th} term, of arithmetic sequences (x_1, x_2, x_3, x_n).	6.A.2.1	Analyze patterns of arithmetic sequences to determine the rule that defines the pattern.
		6.A.2.2	Use the rule to predict the n^{th} term of an arithmetic sequence.
		6.A.2.3	Use a given rule to determine the pattern.
6.A.3	Analyze the data presented in qualitative graphs in terms of position, time, change and rate of change.	6.A.3.1	Represent the essential elements of a scenario in graphical form.
		6.A.3.2	Analyze the data presented in a qualitative graph to solve problems or answer questions.

Geometry

	Essential Standard	Clarifying Objectives	
6.G.1	Represent one- and two-dimensional geometric figures in the Cartesian coordinate system.	6.G.1.1	Identify the origin, axes, quadrants and coordinates on the Cartesian coordinate system.
		6.G.1.2	Describe the intersection of two or more geometric figures in the Cartesian coordinate system (e.g. intersection of a circle and a line).
		6.G.1.3	Summarize the effect of translations.
		6.G.1.4	Summarize the effect of reflections across horizontal and vertical lines.

Measurement

	Essential Standard	Clarifying Objectives	
6.M.1	Use the relationship between customary and metric measurements to estimate measures given in one system to its measure in the other system.	6.M.1.1	Use the relationships between customary and metric measurements to make estimates between systems.
6.M.2	Use attributes of polygons and formulas to determine perimeter and area.	6.M.2.1	Calculate the perimeter of polygons.
		6.M.2.2	Calculate the area of polygons.
6.M.3	Use the approximate value of π to calculate the circumference and area of circles.	6.M.3.1	Compare the ratio of the circumference to the diameter to identify an approximate value of π .
		6.M.3.2	Use formulas to determine the area and circumference of circles.

Statistics and Probability

	Essential Standard	Clarifying Objectives	
6.S.1	Understand the relationships between experimental and theoretical probabilities for simple events.	6.S.1.1	Predict the outcomes of probability experiments for simple events based on theoretical probability.
		6.S.1.2	Compare the outcomes from random experiments (experimental probability) to an expected outcome based on a theoretical probability.
6.S.2	Use strategies to identify sample spaces and probabilities.	6.S.2.1	Use tree diagrams and Fundamental Counting Principle to identify sample space and identify probabilities.
		6.S.2.2	Use organized lists to display a sample space and identify probabilities.
6.S.3	Understand graphical displays of data in terms of shape, measures of center and variability.	6.S.3.1	Represent data using dot plots, stem and leaf plots and histograms.
		6.S.3.2	Interpret distributions of data in terms of measures of center (mean, median and mode), shape (clusters, peaks and gaps) and variability (range).
		6.S.3.3	Compare the meanings and uses of means, medians and modes.
		6.S.3.4	Interpret information from a data set in terms of supporting or refuting statements about the data group.