



North Carolina Essential Standards Mathematics Grade 5

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	
5.N.1	Understand the value of whole numbers, fractions and decimal representations from 0.001 to 1,000,000.	5.N.1.1	Understand the value of whole numbers to 1,000,000.
		5.N.1.2	Compare fractions of like denominators symbolically and unlike denominators using area models and number lines ($<$, $>$, \leq , \geq , $=$, \neq).
		5.N.1.3	Represent the relationship among fractions (halves, fourths, fifths and tenths) and decimals.
		5.N.1.4	Represent fair share of multiple discrete wholes and continuous wholes symbolically and name an individual share as a/b .
5.N.2	Use combinations of whole number addition, subtraction, multiplication and division to solve multi-step problems in context.	5.N.2.1	Use strategies to develop fluency in whole number addition and subtraction to solve multi-step problems in context.
		5.N.2.2	Use multiplication up to three-digit by two-digit and division up to three-digit by two-digit with and without remainders to develop fluency.
		5.N.2.3	Use the concept of division to solve problems with remainders expressed as numbers left over and as fractions.
		5.N.2.4	Identify prime factors (for numbers less than 60) and multiples by composing and decomposing whole numbers.
		5.N.2.5	Use estimation to justify the reasonableness of solutions.
5.N.3	Use strategies to solve problems involving addition and subtraction of fractions and decimals.	5.N.3.1	Use a variety of strategies to solve problems involving addition and subtraction of fractions with unlike denominators.
		5.N.3.2	Use a variety of strategies to solve problems involving addition and subtraction of decimals.
		5.N.3.3	Use estimation of sums and differences of fractions and decimals to justify reasonableness of solutions.
5.N.4	Use tables and graphs to compare ratios.	5.N.4.1	Represent two quantities that vary by the same factor (proportionately) using a ratio table.
		5.N.4.2	Use graphing of two-column tables to compare ratio values.

Algebra

	Essential Standard	Clarifying Objectives	
5.A.1	Apply mathematical operations to solve equations.	5.A.1.1	Represent situations as algebraic equations.
		5.A.1.2	Use combinations of addition, subtraction, multiplication and division with whole numbers to solve one- and two- step equations.
		5.A.1.3	Use addition and subtraction of decimals and fractions with variables to solve one-step equations.
5.A.2	Apply the concept of inequality.	5.A.2.1	Represent problem situations with inequalities.
		5.A.2.2	Identify values of a variable as a solution for an inequality.
5.A.3	Analyze growing and repeating patterns to solve problems.	5.A.3.1	Use numbers, pictures, tables, graphs and algebraic expressions to represent numeric and non-numeric patterns to solve problems.
		5.A.3.2	Analyze an arithmetic sequence to generate a rule and generate a rule using an arithmetic sequence to solve problems.

Geometry

	Essential Standard	Clarifying Objectives	
5.G.1	Apply properties to classify polygons.	5.G.1.1	Classify triangles and quadrilaterals based on angles, sides, diagonals and shape (convex and concave quadrilaterals).
		5.G.1.2	Use triangles to categorize polygons by the sums of the measures of interior angles.
5.G.2	Understand the relationships between rectangles and rectangular prisms.	5.G.2.1	Compare the dimensions of a rectangular prism to its two-dimensional net.
		5.G.2.2	Compare the area of a two-dimensional net to the surface area of its three-dimensional rectangular prism.

Measurement

	Essential Standard	Clarifying Objectives	
5.M.1	Use a protractor to measure angles.	5.M.1.1	Understand the procedure for measuring angles to the nearest 5° with a protractor.
		5.M.1.2	Use angle benchmarks to estimate and solve problems: $\frac{1}{4}$ turn, right angle, 90° , $\frac{1}{2}$ turn, 180° , $\frac{3}{4}$ turn, 270° , and a complete turn, 360° .
5.M.2	Use measurement of temperature and of elapsed time to solve problems.	5.M.2.1	Understand elapsed time to solve problems.
		5.M.2.2	Understand negative and non-negative temperatures on a thermometer to solve problems.

Statistics and Probability

	Essential Standard	Clarifying Objectives	
5.S.1	Interpret trends in data from statistical investigations.	5.S.1.1	Use data from statistical investigations presented in graphs to interpret trends.
		5.S.1.2	Interpret appropriateness for specific questions by comparing multiple representations of one or more sets of data