PUBLIC SCHOOLS OF NORTH CAROLINA
State Board of Education | Department of Public Instruction

North Carolina Standard Course of Study
Kindergarten Mathematics

Standards for Mathematical Practice	
1. Make sense of problems and persevere in solving them. 2. Reason abstractly and quantitatively. 3. Construct viable arguments and critique the reasoning of others. 4. Model with mathematics.	5. Use appropriate tools strategically. 6. Attend to precision. 7. Look for and make use of structure. 8. Look for and express regularity in repeated reasoning.

Counting and Cardinality	
Know number names and the counting sequence.	
NC.K.CC.1	Know number names and recognize patterns in the counting sequence by: • Counting to 100 by ones. • Counting to 100 by tens.
NC.K.CC.2	Count forward beginning from a given number within the known sequence, instead of having to begin at 1.
NC.K.CC.3	Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20, with 0 representing a count of no objects.
Count to tell the number of objects.	
NC.K.CC.4	Understand the relationship between numbers and quantities. • When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object (one-to-one correspondence). • Recognize that the last number named tells the number of objects counted regardless of their arrangement (cardinality). • State the number of objects in a group, of up to 5 objects, without counting the objects (perceptual subitizing).
NC.K.CC.5	Count to answer "How many?" in the following situations: • Given a number from 1–20, count out that many objects. • Given up to 20 objects, name the next successive number when an object is added, recognizing the quantity is one more/greater. • Given 20 objects arranged in a line, a rectangular array, and a circle, identify how many. • Given 10 objects in a scattered arrangement, identify how many.

K-2 Mathematics

Compare numbers.	
NC.K.CC.6	Identify whether the number of objects, within 10, in one group is greater than, less than, or equal to the number of objects in another group, by using matching and counting strategies.
NC.K.CC.7	Compare two numbers, within 10, presented as written numerals.
Operations and Algebraic Thinking	
Understand addition and subtraction.	
NC.K.OA.1	Represent addition and subtraction, within 10: • Use a variety of representations such as objects, fingers, mental images, drawings, sounds, acting out situations, verbal explanations, or expressions. • Demonstrate understanding of addition and subtraction by making connections among representations.
NC.K.OA.2	Solve addition and subtraction word problems, within 10, using objects or drawings to represent the problem, when solving: • Add to/Take From-Result Unknown • Put Together/ Take Apart (Total Unknown and Two Addends Unknown)
NC.K.OA.3	Decompose numbers less than or equal to 10 into pairs in more than one way using objects or drawings, and record each decomposition by a drawing or expression.
NC.K.OA.4	For any number from 0 to 10, find the number that makes 10 when added to the given number using objects or drawings, and record the answer with a drawing or expression.
NC.K.OA.5	Demonstrate fluency with addition and subtraction within 5.
NC.K.OA.6	Recognize and combine groups with totals up to 5 (conceptual subitizing).
Number and Operations in Base Ten	
Build foundation for place value.	
NC.K.NBT.1	Compose and decompose numbers from 11 to 19 into ten ones and some further ones by: • Using objects or drawings. • Recording each composition or decomposition by a drawing or expression. • Understanding that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones.

K-2 Mathematics

Measurement and Data	
Describe and compare measurable attributes.	
NC.K.MD.1	Describe measurable attributes of objects; and describe several different measurable attributes of a single object.
NC.K.MD.2	Directly compare two objects with a measurable attribute in common, to see which object has "more of"/"less of" the attribute, and describe the difference.
Classify objects and count the number of objects in each category.	
NC.K.MD.3	Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.
Geometry	
Identify and describe shapes.	
NC.K.G.1	Describe objects in the environment using names of shapes, and describe the relative positions of objects using positional terms.
NC.K.G.2	Correctly name squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres regardless of their orientations or overall size.
NC.K.G.3	Identify squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres as two-dimensional or three-dimensional.
Analyze, compare, create, and compose shapes.	
NC.K.G.4	Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, attributes and other properties.
NC.K.G.5	Model shapes in the world by: • Building and drawing triangles, rectangles, squares, hexagons, circles. • Building cubes, cones, spheres, and cylinders.
NC.K.G.6	Compose larger shapes from simple shapes.

North Carolina Standard Course of Study
First Grade Mathematics

Standards for Mathematical Practice	
1. Make sense of problems and persevere in solving them. 2. Reason abstractly and quantitatively. 3. Construct viable arguments and critique the reasoning of others. 4. Model with mathematics.	5. Use appropriate tools strategically. 6. Attend to precision. 7. Look for and make use of structure. 8. Look for and express regularity in repeated reasoning.

Operations and Algebraic Thinking	
Represent and solve problems.	
NC.1.OA.1	Represent and solve addition and subtraction word problems, within 20, with unknowns, by using objects, drawings, and equations with a symbol for the unknown number to represent the problem, when solving: • Add to/Take from-Change Unknown • Put together/Take Apart-Addend Unknown • Compare-Difference Unknown
NC.1.OA.2	Represent and solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, by using objects, drawings, and equations with a symbol for the unknown number.
Understand and apply the properties of operations.	
NC.1.OA.3	Apply the commutative and associative properties as strategies for solving addition problems.
NC.1.OA.4	Solve an unknown-addend problem, within 20, by using addition strategies and/or changing it to a subtraction problem.
Add and subtract within 20.	
NC.1.OA.9	Demonstrate fluency with addition and subtraction within 10.
NC.1.OA.6	Add and subtract, within 20, using strategies such as: • Counting on • Making ten • Decomposing a number leading to a ten

	• Using the relationship between addition and subtraction • Using a number line • Creating equivalent but simpler or known sums
Analyze addition and subtraction equations within 20.	
NC.1.OA.7	Apply understanding of the equal sign to determine if equations involving addition and subtraction are true.
NC.1.OA.8	Determine the unknown whole number in an addition or subtraction equation involving three whole numbers.
Number and Operations in Base Ten	
Extend and recognize patterns in the counting sequence.	
NC.1.NBT.1	Count to 150, starting at any number less than 150.
NC.1.NBT.7	Read and write numerals, and represent a number of objects with a written numeral, to 100.
Understand place value.	
NC.1.NBT.2	Understand that the two digits of a two-digit number represent amounts of tens and ones. • Unitize by making a ten from a collection of ten ones. • Model the numbers from 11 to 19 as composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones. • Demonstrate that the numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens, with 0 ones.
NC.1.NBT.3	Compare two two-digit numbers based on the value of the tens and ones digits, recording the results of comparisons with the symbols >, =, and <.
Use place value understanding and properties of operations.	
NC.1.NBT.4	Using concrete models or drawings, strategies based on place value, properties of operations, and explaining the reasoning used, add, within 100, in the following situations: • A two-digit number and a one-digit number • A two-digit number and a multiple of 10
NC.1.NBT.5	Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used.
NC.1.NBT.6	Subtract multiples of 10 in the range 10-90 from multiples of 10 in the range 10-90, explaining the reasoning, using: • Concrete models and drawings • Number lines

	• Strategies based on place value • Properties of operations • The relationship between addition and subtraction
Measurement and Data	
Measure lengths.	
NC.1.MD.1	Order three objects by length; compare the lengths of two objects indirectly by using a third object.
NC.1.MD.2	Measure lengths with non-standard units. • Express the length of an object as a whole number of non-standard length units. • Measure by laying multiple copies of a shorter object (the length unit) end to end (iterating) with no gaps or overlaps.
Build understanding of time and money.	
NC.1.MD.3	Tell and write time in hours and half-hours using analog and digital clocks.
NC.1.MD.5	Identify quarters, dimes, and nickels and relate their values to pennies.
Represent and interpret data.	
NC.1.MD.4	Organize, represent, and interpret data with up to three categories. • Ask and answer questions about the total number of data points. • Ask and answer questions about how many in each category. • Ask and answer questions about how many more or less are in one category than in another.
Geometry	
Reason with shapes and their attributes.	
NC.1.G.1	Distinguish between defining and non-defining attributes and create shapes with defining attributes by: • Building and drawing triangles, rectangles, squares, trapezoids, hexagons, circles. • Building cubes, rectangular prisms, cones, spheres, and cylinders.
NC.1.G.2	Create composite shapes by: • Making a two-dimensional composite shape using rectangles, squares, trapezoids, triangles, and half-circles naming the components of the new shape. • Making a three-dimensional composite shape using cubes, rectangular prisms, cones, and cylinders, naming the components of the new shape.

NC.1.G.3	Partition circles and rectangles into two and four equal shares. • Describe the shares as halves and fourths, as half of and fourth of. • Describe the whole as two of, or four of the shares. • Explain that decomposing into more equal shares creates smaller shares.

North Carolina Standard Course of Study
Second Grade Mathematics

Standards for Mathematical Practice	
1. Make sense of problems and persevere in solving them. 2. Reason abstractly and quantitatively. 3. Construct viable arguments and critique the reasoning of others. 4. Model with mathematics.	5. Use appropriate tools strategically. 6. Attend to precision. 7. Look for and make use of structure. 8. Look for and express regularity in repeated reasoning.

Operations and Algebraic Thinking	
Represent and solve problems.	

NC.2.OA.1	Represent and solve addition and subtraction word problems, within 100, with unknowns in all positions, by using representations and equations with a symbol for the unknown number to represent the problem, when solving:
	• One-Step problems:
	  ○ Add to/Take from-Start Unknown
	  ○ Compare-Bigger Unknown
	  ○ Compare-Smaller Unknown
	• Two-Step problems involving single digits:
	  ○ Add to/Take from- Change Unknown
	  ○ Add to/Take From- Result Unknown

Add and subtract within 20.	
NC.2.OA.2	Demonstrate fluency with addition and subtraction, within 20, using mental strategies.
Work with equal groups.	
NC.2.OA.3	Determine whether a group of objects, within 20, has an odd or even number of members by: • Pairing objects, then counting them by 2s. • Determining whether objects can be placed into two equal groups. • Writing an equation to express an even number as a sum of two equal addends.

NC.2.OA.4	Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns; write an equation to express the total as a sum of equal addends.
Number and Operations in Base Ten	
Understand place value.	
NC.2.NBT.1	Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones. • Unitize by making a hundred from a collection of ten tens. • Demonstrate that the numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four, five, six, seven, eight, or nine hundreds, with 0 tens and 0 ones. • Compose and decompose numbers using various groupings of hundreds, tens, and ones.
NC.2.NBT.2	Count within 1,000; skip-count by 5s, 10s, and 100s.
NC.2.NBT.3	Read and write numbers, within 1,000, using base-ten numerals, number names, and expanded form.
NC.2.NBT.4	Compare two three-digit numbers based on the value of the hundreds, tens, and ones digits, using >, =, and < symbols to record the results of comparisons.
Use place value understanding and properties of operations.	
NC.2.NBT.5	Demonstrate fluency with addition and subtraction, within 100, by: • Flexibly using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. • Comparing addition and subtraction strategies, and explaining why they work. • Selecting an appropriate strategy in order to efficiently compute sums and differences.
NC.2.NBT.6	Add up to three two-digit numbers using strategies based on place value and properties of operations.
NC.2.NBT.7	Add and subtract, within 1,000, relating the strategy to a written method, using: • Concrete models or drawings • Strategies based on place value • Properties of operations • Relationship between addition and subtraction
NC.2.NBT.8	Mentally add 10 or 100 to a given number 100–900, and mentally subtract 10 or 100 from a given number 100–900.

K-2 Mathematics

Measurement and Data	
Measure and estimate lengths.	
NC.2.MD.1	Measure the length of an object in standard units by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.
NC.2.MD.2	Measure the length of an object twice, using length units of different lengths for the two measurements; describe how the two measurements relate to the size of the unit chosen.
NC.2.MD.3	Estimate lengths in using standard units of inches, feet, yards, centimeters, and meters.
NC.2.MD.4	Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit.
Relate addition and subtraction to length.	
NC.2.MD.5	Use addition and subtraction, within 100, to solve word problems involving lengths that are given in the same units, using equations with a symbol for the unknown number to represent the problem.
NC.2.MD.6	Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points and represent whole-number sums and differences, within 100, on a number line.
Build understanding of time and money.	
NC.2.MD.7	Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m.
NC.2.MD.8	Solve word problems involving: • Quarters, dimes, nickels, and pennies within 99¢, using ¢ symbols appropriately. • Whole dollar amounts, using the $ symbol appropriately.
Represent and interpret data.	
NC.2.MD.10	Organize, represent, and interpret data with up to four categories. • Draw a picture graph and a bar graph with a single-unit scale to represent a data set. • Solve simple put-together, take-apart, and compare problems using information presented in a picture and a bar graph.
Geometry	
Reason with shapes and their attributes.	
NC.2.G.1	Recognize and draw triangles, quadrilaterals, pentagons, and hexagons, having specified attributes; recognize and describe attributes of rectangular prisms and cubes.

NC.2.G.3	Partition circles and rectangles into two, three, or four equal shares. • Describe the shares using the words halves, thirds, half of, a third of, fourths, fourth of, quarter of. • Describe the whole as two halves, three thirds, four fourths. • Explain that equal shares of identical wholes need not have the same shape.