New Jersey Student Learning Standards for Mathematics and Student Learning Objectives

Issued by the New Jersey Department of Education – Updated August 2019

Kindergarten – Number Concepts and Counting to 10 – Unit 1

Rationale

Unit 1 focuses on counting and the relationship between numbers and quantities. Learners count by ones up to ten and say the number name for each object when counting up to ten objects. They come to understand that, when counting, the last number tells the total number of objects regardless of their order. Learners represent numbers of objects, including the absence of objects (0), with written numbers and answer 'how many' questions about a group of objects arranged in lines, rectangular, arrays, and circles.

Also in this unit, learners use their counting experiences to develop an understanding of addition and subtraction within 5. They represent addition and subtraction within 5 using multiple strategies including using objects, fingers, mental images, drawings, sounds, acting out, verbal explanations, expressions or equations.

Throughout the unit, learners use concrete objects to count and to represent addition and subtraction. These concrete objects support learners' development of spatial reasoning. They recognize and correctly name two-dimensional shapes regardless of the orientation and size of objects. By describing objects in the environment using names of shapes and describing the relative positions of objects, learners extend their spatial reasoning skills.

Note: Double asterisks (**) indicate that the example(s) included within the New Jersey Student Learning Standard may be especially informative when considering the Student Learning Objective.

Kindergarten – Unit 1, Module A

Standard	Student Learning Objectives We are learning to … / We are learning that …
■ **K.CC.A.1** Count to 100 by ones and by tens.	▪ count by ones to 10
■ **K.CC.A.2** Count forward beginning from a given number within the known sequence (instead of having to begin at 1).	▪ count on from a number other than 1 to 10
■ **K.CC.A.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).	▪ write numbers 0 to 10 ▪ represent a number of objects with a written number from 1 through 10 ▪ zero represents a count of no objects

Key: ■ Major Cluster ▢ Supporting Cluster ◎ Additional Cluster

Standard	Student Learning Objectives We are learning to … / We are learning that …
K.CC.B.4 Understand the relationship between numbers and quantities; connect counting to cardinality. a. 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.	▪ when counting, each object is paired with only one number name ▪ say the number name for each object in a group up to 10 objects when counting
K.CC.B.4 Understand the relationship between numbers and quantities; connect counting to cardinality. b. Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.	▪ when counting a set of objects up to 10, the last number tells the total number of objects ▪ after counting a set of objects up to 10, the total is the same even when the arrangement or order is changed
K.CC.B.4 Understand the relationship between numbers and quantities; connect counting to cardinality. c. Understand that each successive number name refers to a quantity that is one larger.	▪ when given a number between 0 and 10, the next number is one larger than the given number
K.CC.B.5 Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects.	▪ count out the correct number of objects when given a number up to 10 ▪ answer "how many" questions about a group of objects up to 10 in a line, rectangular array, and circle by counting
K.OA.A.1 Represent addition and subtraction up to 10 with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.	▪ represent addition within 5 in a variety of ways (e.g., objects, fingers, mental images, drawings, sounds, acting out, verbal explanations, expressions or equations) ▪ represent subtraction within 5 in a variety of ways (e.g., objects, fingers, mental images, drawings, sounds, acting out, verbal explanations, expressions or equations)

New Jersey Student Learning Standards for Mathematics and Student Learning Objectives

Kindergarten – Unit 1, Module B

Standard	Student Learning Objectives We are learning to … / We are learning that …
K.G.A.1 Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as *above, below, beside, in front of, behind,* and *next to.* Note: shapes include squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres.	▪ identify squares, circles, triangles, rectangles, and hexagons ▪ describe the attributes of squares, circles, triangles, rectangles, and hexagons ▪ describe objects in the environment using names of shapes ▪ describe the positions of objects in the environment using words such as above, below, beside, in front of, behind, and next to
K.G.A.2 Correctly name shapes regardless of their orientations or overall size. Note: shapes include squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres.	▪ the name of a shape does not change when orientation and size change ▪ correctly name squares, circles, triangles, rectangles and hexagons of different sizes and orientations

Kindergarten – Counting to 20, Addition and Subtraction – Unit 2

Rationale

In unit 2, learners continue to develop an understanding of number names and the count sequence. They extend the count sequence to 20, starting at various numbers and represent up to 20 objects with written numbers. Counting objects in a scattered arrangement is introduced in this unit. Learners demonstrate spatial reasoning and understanding of the count sequence to answer "how many" questions about a group of up to 10 scattered objects. They classify objects into given categories, find totals for each category and compare numbers up to 10. Learners also determine whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group.

Throughout the unit, learners use concrete objects to count and to represent addition and subtraction. Addition and subtraction, including solving word problems using objects and drawings, is extended to up to 10 objects. Learners begin decomposing numbers less than or equal to 5 into pairs in multiple ways using objects or drawings. This leads them towards building fluency (accuracy and efficiency) for addition and subtraction within 5.

To extend spatial reasoning skills, learners describe objects in the environment using names of shapes and describe their relative positions. They identify and describe both two and three-dimensional shapes, recognizing that two dimensional shapes are flat, and three-dimensional shapes are solid.

Kindergarten – Unit 2, Module A

Standard	Student Learning Objectives We are learning to … / We are learning that …
K.CC.A.1 Count to 100 by ones and by tens.	▪ count by ones to 20
K.CC.A.2 Count forward beginning from a given number within the known sequence (instead of having to begin at 1).	▪ count on from a number other than 1 up to 20
K.CC.A.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).	▪ write numbers 0 through 20 ▪ represent the number of objects with a written number from 0 through 20
K.CC.B.4 Understand the relationship between numbers and quantities; connect counting to cardinality. a. 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.	▪ when counting, each object is paired with only one number name. ▪ say the number name for each object in a group up to 20 objects when counting

Standard	Student Learning Objectives We are learning to … / We are learning that …
K.CC.B.4 Understand the relationship between numbers and quantities; connect counting to cardinality. b. Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.	▪ when counting a set of objects up to 20, the last number tells the total number of objects ▪ after counting a set of objects up to 20, the total is the same even when the arrangement or order is changed
K.CC.B.4 Understand the relationship between numbers and quantities; connect counting to cardinality. c. Understand that each successive number name refers to a quantity that is one larger.	▪ when given a number between 0 and 20, the next number is one larger than the given number
K.CC.B.5 Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects.	▪ count out the correct number of objects when given a number up to 20 ▪ answer "how many" questions about groups of objects up to 20 in a line, rectangular array, and circle by counting ▪ answer "how many" questions about a group of up to 10 objects in a scattered arrangement by counting
K.CC.C.6 Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.	▪ equal means the same amount ▪ identify when the number of objects is equal to, greater than, or less than the number of objects in another group by matching or counting the number of objects in both groups
K.CC.C.7 Compare two numbers between 1 and 10 presented as written numerals.	▪ compare two written numbers between 1 and 10

Kindergarten – Unit 2, Module B

Standard	Student Learning Objectives We are learning to … / We are learning that …
K.OA.A.1 Represent addition and subtraction up to 10 with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.	▪ represent addition within 10 with objects, fingers, mental images, drawings, sounds, acting out problems, verbal explanations, expressions and equations ▪ represent subtraction within 10 with objects, fingers, mental images, drawings, sounds, acting out problems, verbal explanations, expressions and equations
K.OA.A.2 Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.	▪ represent addition and subtraction word problems within 10 using objects, drawings ▪ solve addition and subtraction word problems within 10
K.OA.A.3 Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., 5 = 2 + 3 and 5 = 4 + 1).	▪ decompose numbers less than or equal to 5 in pairs e.g. by using objects or drawings ▪ record the decomposition of numbers less than or equal to 5 in pairs with a drawing or equation. ▪ decompose numbers less than or equal to 5 in pairs in more than one way e.g., by using objects or drawings and record the decompositions with a drawing or equation
K.OA.A.5 Demonstrate fluency for addition and subtraction within 5.	▪ represent addition and subtraction within 5 using objects, pictures, numbers, and words (working towards accuracy and efficiency)

Standard	Student Learning Objectives We are learning to … / We are learning that …
K.MD.B.3 Classify objects into given categories; count the number of objects in each category and sort the categories by count. Note: Limit category counts to be less than or equal to 10.	▪ classify objects into given categories ▪ count the number of objects in each category (up to 10) and sort the categories by their count**
K.G.A.1 Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as *above, below, beside, in front of, behind,* and *next to.* Note: shapes include squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres.	▪ identify cubes, cones, cylinders and spheres ▪ describe the attributes of cubes, cones, cylinders and spheres ▪ describe objects in the environment using names of shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres)
K.G.A.2 Correctly name shapes regardless of their orientations or overall size.	▪ orientation and size do not change the shape (cubes, cones, cylinders and spheres) ▪ correctly name cubes, cones, cylinders, and spheres
K.G.A.3 Identify shapes as two-dimensional (lying in a plane, "flat") or three-dimensional ("solid").	▪ two-dimensional shapes are "flat" (lying in a plane) ▪ three-dimensional shapes are "solid" ▪ identify shapes as two-dimensional or three-dimensional

Kindergarten – Count, Compose and Compare Numbers – Unit 3

Rationale

In unit 3, learners continue to develop an understanding of number names and the count sequence by extending the count sequence to 50. They count by tens to 50 and represent up to 20 objects with written numbers. Learners continue to answer "how many" questions about groups of objects, explore the meaning of "equal," and use strategies to identify when the number of objects is equal to, greater than, or less than the number of objects in another group. As learners use written numerals, the abstract representation of groups of objects, more frequently, they understand that written numerals have a value and can be compared.

Learners reinforce their understanding of addition and subtraction within 10, and continue to model addition and subtraction using objects, fingers, mental images, drawings, sounds, acting out, verbal explanations, expressions or equations. They decompose larger numbers (up to 10) into pairs in multiple ways using objects or drawings and discover the number that makes 10 when added to a given number from 1 to 9. These experiences support fluency (accuracy and efficiency) for addition and subtraction within 5.

Foundational place value concepts are introduced in unit 3. Learners explore different ways to compose and decompose numbers 11 through 19 into ten ones and some additional number of ones using both concrete objects and drawings.

Spatial reasoning in this unit engages learners in comparing two and three-dimensional shapes and using informal language to describe their similarities and differences. Learners again classify objects into given categories, count the number of objects in each category, and sort the categories according to the number of objects in each.

Kindergarten – Unit 3, Module A

Standard	Student Learning Objectives We are learning to … / We are learning that …
K.CC.A.1 Count to 100 by ones and by tens.	▪ count by ones to 50 ▪ count by tens to 50
K.CC.A.2 Count forward beginning from a given number within the known sequence (instead of having to begin at 1).	▪ count on from a number other than 1 to 50
K.CC.B.4 Understand the relationship between numbers and quantities; connect counting to cardinality. A. 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.	▪ when counting, each object is paired with only one number name. ▪ say the number name for each object in a group up to 20 objects when counting

Standard	Student Learning Objectives We are learning to … / We are learning that …
K.CC.B.4 Understand the relationship between numbers and quantities; connect counting to cardinality. b. Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.	▪ when counting a set of objects up to 20, the last number tells the total number of objects ▪ after counting a set of objects up to 20, the total is the same even when the arrangement or order is changed
K.CC.B.4 Understand the relationship between numbers and quantities; connect counting to cardinality. c. Understand that each successive number name refers to a quantity that is one larger.	▪ when given a number between 0 and 20, the next number is one larger than the given number
K.CC.B.5 Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects.	▪ answer "how many" questions about groups of objects up to 20 in a line, rectangular array, and circle by counting
K.CC.C.6 Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.	▪ equal means the same amount ▪ identify when the number of objects is equal to, greater than, or less than the number of objects in another group by matching or counting the number of objects in both groups
K.CC.C.7 Compare two numbers between 1 and 10 presented as written numerals.	▪ compare two written numbers between 1 and 10

Kindergarten – Unit 3, Module B

Standard	Student Learning Objectives We are learning to … / We are learning that …
K.OA.A.2 Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.	▪ solve addition and subtraction word problems within 10
K.OA.A.5 Demonstrate fluency for addition and subtraction within 5.	▪ represent addition and subtraction within 5 using objects, pictures, numbers, and words (working towards accuracy and efficiency)
K.OA.A.3 Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., 5 = 2 + 3 and 5 = 4 + 1).	▪ decompose numbers less than or equal to 10 in pairs e.g. by using objects or drawings ▪ record the decomposition of numbers less than or equal to 10 in pairs with a drawing or equation. ▪ decompose numbers less than or equal to 10 in pairs in more than one way e.g. by using objects or drawings and record the decompositions with a drawing or equation
K.OA.A.4 For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing or equation.	▪ find the number that makes 10 when added to a given number from 1 to 9 (e.g. using objects or drawings) ▪ record the numbers that make 10 with a drawing or equation
K.NBT.A.1 Compose and decompose numbers from 11 to 19 into ten ones and some further ones, e.g., by using objects or drawings, and record each composition or decomposition by a drawing or equation (e.g., 18 = 10 + 8); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones.	▪ compose ten ones and some further ones (e.g. using objects or drawings) into numbers 11 to 19 and record it with a drawing or equation ▪ decompose numbers 11 to 19 into ten ones and some further ones (e.g. using objects or drawings) and record it with a drawing or equation ▪ the numbers 11 to 19 are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine more ones

Kindergarten – Unit 3, Module C

Standard	Student Learning Objectives We are learning to … / We are learning that …
☐ **K.G.B.4** Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/"corners") and other attributes (e.g., having sides of equal length).	▪ describe the parts of two- and three- dimensional shapes (e.g., number of sides, faces, vertices/ "corners") ▪ compare by describing similarities, differences, parts, and other attributes of two- and three-dimensional shapes using informal language
☐ **K.MD.B.3** Classify objects into given categories; count the number of objects in each category and sort the categories by count. Note: Limit category counts to be less than or equal to 10	▪ classify objects into given categories ▪ count the number of objects in a category and sort the categories of objects by their count

Kindergarten – Represent Number Concepts and Model with Shapes – Unit 4

Rationale

In this unit, learners extend the count sequence to 100. They count by ones and tens and begin at various numbers. Using objects or drawings, learners continue to decompose numbers into pairs in multiple ways. They record numbers that make 10 with drawings and with equations, and demonstrate fluency for addition and subtraction within 5 by accurately and efficiently finding sums and differences. Learners continue to build place value understanding by exploring different ways to compose and decompose numbers 11 through 19 into a ten and ones using objects and drawings. solve addition and subtraction word problems within 10 using objects, drawings, or other strategies.

Learners use spatial reasoning to model shapes in the world by building shapes from components (e.g., sticks and clay balls). They compose simple shapes to form larger shapes and describe measurable attributes of various objects. Learners explore early ideas about measurement. They understand that an object can have more than one measurable attribute, compare two objects that have a measurable attribute in common, and determine which object has "more of" or "less of" the attribute.

Kindergarten – Unit 4, Module A

Standard	Student Learning Objectives We are learning to … / We are learning that …
K.CC.A.1 Count to 100 by ones and by tens.	▪ count by ones to 100 ▪ count by tens to 100
K.CC.A.2 Count forward beginning from a given number within the known sequence (instead of having to begin at 1).	▪ count on from a number other than 1 to 100
K.OA.A.2 Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.	▪ solve addition and subtraction word problems within 10
K.OA.A.3 Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., 5 = 2 + 3 and 5 = 4 + 1).	▪ decompose numbers less than or equal to 10 in pairs e.g. by using objects or drawings ▪ record the decomposition of numbers less than or equal to 10 in pairs with a drawing or equation ▪ decompose numbers less than or equal to 10 in pairs in more than one way e.g. by using objects or drawings and record the decompositions with a drawing or equation
K.OA.A.4 For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by	▪ find the number that makes 10 when added to a given number from 1 to 9 (e.g. using objects or drawings)

Standard	Student Learning Objectives We are learning to … / We are learning that …
using objects or drawings, and record the answer with a drawing or equation.	▪ record the numbers that make 10 with a drawing or equation
K.OA.A.5 Demonstrate fluency for addition and subtraction within 5.	▪ represent addition and subtraction within 5 with accuracy and efficiency
K.NBT.A.1 Compose and decompose numbers from 11 to 19 into ten ones and some further ones, e.g., by using objects or drawings, and record each composition or decomposition by a drawing or equation (e.g., 18 = 10 + 8); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones.	▪ compose and record numbers from 11 to 19 into a ten and some further ones (e.g. using objects or drawings) ▪ decompose and record numbers 11 to 19 into a ten and some further ones (e.g. using objects or drawings) ▪ the numbers 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones

Standard	Student Learning Objectives We are learning to … / We are learning that …
K.G.B.5 Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.	▪ model shapes in the world by building shapes from components (e.g. sticks and clay balls) ▪ model shapes in the world by drawing shapes
K.G.B.6 Compose simple shapes to form larger shapes. For example, "Can you join these two triangles with full sides touching to make a rectangle?"	▪ simple shapes can join to compose larger shapes** ▪ compose simple shapes to form larger shapes**
K.G.B.4 Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/"corners") and other attributes (e.g., having sides of equal length).	▪ analyze two- and three-dimensional shapes in different sizes and orientations using informal language ▪ a vertex or "corner" is where two sides meet ▪ some shapes (squares, triangles, rectangles, hexagons) have sides. ▪ the length of sides is an important attribute when naming shapes ▪ identify and describe sides of shapes using informal language ▪ analyze and describe the attributes of two dimensional shapes (e.g. number of sides, vertices/"corners") using informal language ▪ compare by describing similarities, differences, parts, and other attributes of two and three-dimensional shapes using informal language
K.MD.A.1 Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object. Note: shapes include squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres.	▪ objects have measurable attributes, such as length or weight. ▪ describe measurable attributes of objects, such as length or weight. ▪ describe several measurable attributes of a single object
K.MD.A.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. For example, directly compare the heights of two children and describe one child as taller/shorter. Note: shapes include squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres.	▪ compare two objects that share a measurable attribute to see which object has "more of"/"less of" the attribute ▪ describe the difference between two objects that share the same measurable attribute**