

THEME: Understand Numbers 1 – 10**COUNTING AND CARDINALITY (CC)****Know number names and the count sequence.**

K.CC.2 Count forward within 100 beginning from any given number other than 1.

Count to tell the number of objects.

K.CC.4 Understand the relationship between numbers and quantities; connect counting to cardinality using a variety of objects including pennies.

- a. When counting objects, establish a one-to-one relationship by saying 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.
- b. Understand that the last number name said tells the number of objects counted and that the number of objects is the same regardless of their arrangement or the order in which they were counted.

Count to tell the number of objects.

K.CC.6 Orally identify (without using inequality symbols) whether the number of objects in one group is greater/more than, less/fewer than, or the same as the number of objects in another group, not to exceed 10 objects in each group.

OPERATIONS AND ALGEBRAIC THINKING (OA)**Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.**

K.OA.1 Represent addition and subtraction with objects, fingers, mental images, drawings, sounds such as claps, acting out situations, verbal explanations, expressions, or equations. Drawings need not show details, but should show the mathematics in the problem. (This applies wherever drawings are mentioned in the Standards.)

GEOMETRY (G)**Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres).**

K.G.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.

K.G.2 Correctly name shapes regardless of their orientations or overall size.

Describe, compare, create, and compose shapes.

K.G.5 Model shapes in the world by building shapes from components, e.g., sticks and clay balls, and drawing shapes.

Commentary:

Students enter kindergarten with a broad range of experiences with numbers. Some will be able to count by rote from 1 to 100 (or a subset of that range). Others may have limited experience with counting to 10. Keep in mind that the content standards identify what students should know and be able to do by the end of kindergarten.

Therefore, you will need to scaffold individual standards to meet the needs of students. For example, it is likely that you will begin the school year focusing on rote counting (sequencing number names) to 20 and at the same time work only on counting physical objects to 5. By the end of the year, students should be able to successfully complete all of these standards.

Once students are fluent at counting beginning with 1, they begin to work on counting forward from a number other than 1 within a given range. This is a prerequisite skill for counting on as students begin to work with addition.

Students move from rote counting to finding the number of objects in a set. Cardinality refers to the actual count or number of items in a set. As students show proficiency rote counting within a range of numbers, for example, 1 to 10, they can begin to find the number of objects in a set within that range. It is important for students to connect the physical objects (3 counters) with the oral number word (three) with the numeral (3). Students should begin with counting physical objects, progress to pictures, and then connect the physical representations to the numeral.

Kindergarten students will experience comparing quantities for the first time. Precision with language is critical. Scaffolding experiences that start by using concrete materials with obvious comparisons and honing in on quantities that get closer in size will provide students with the time needed to understand the concepts.

Students develop an understanding of the meaning of addition and subtraction by modeling how they can put together (compose) or take apart (decompose) up to 10 objects in different ways. It is critical for students to have a variety of experiences with concrete materials.

The study of geometry in kindergarten is essential as students must be able to recognize and visualize shapes in their surroundings. Many students are already exposed to shapes as they play, draw, color, build, and explore with toys and technology. Students will learn that specific attributes (number of side, angles, etc.) define what a shape is called and other attributes (color, size, and orientation) do not. Using attributes, students identify and describe squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres. Students find and identify shapes around home and school. They recognize, compare, and sort the shapes based upon geometric attributes. A variety of experience must be provided for students to locate both two-dimensional and three-dimensional objects as well as describe the positional location of the objects.

Instructional Resources

Math Expressions: Unit 1 (Sections: 1.1 – 1.18)

Manipulatives: Student Math White Boards, Objects of counting, Five frames, Ten frames, Hundreds chart, Numeral cards, Part-Part Whole Chart, Number line, Two-dimensional and three dimensional shapes, Attributes blocks, Pattern blocks, Tangrams and Shapes

Achieve The Core Fluency Resource

Digital: Think Central – Soar to Success for Below Level and Mega Math for On Level

Differentiated Instructional Activities: Pages: 5, 9, 13, 17, 21, 27, 31, 37, 43, 53, 57, 63, 67, 75, 79, 85, 89 and 95

Assessment Resources

Unit 1: Quick Quiz 1, 2, 3, and 4

Unit 1 Assessment Form A and Form B

Formative: “Check for Understanding embedded in each lesson.

Addressing Student Misconceptions and Common Errors**K.CC.2**

Students who struggles with developing this standard, particularly with numbers greater than 10, should master counting within a sequence before counting forward from a number in that sequence. For example, students should be able to rote count to 20 before they are expected to count on from 8. Begin with smaller numbers and progress to greater numbers. Limit how far you want students to count and then increase the range.

Addressing Student Misconceptions and Common Errors Cont.**K.CC.4**

Watch for students who find it confusing to say one number name with one object as they count (one-to-one correspondence). Begin with a smaller number of objects and model saying the number name as you physically move the object. Have students do the same. Also, watch for students who double count an object. Physically moving the object and saying one number name for each object will help to reinforce one-to-one correspondence; that is, one object goes with one number name. Students may see 5 items spread out as different from 5 items close together. Students should physically move the objects matching one item from one set with one item from the other set to understand that the count of 5 remains the same no matter how the objects are organized.

K.CC.6

Students who have trouble with the vocabulary of comparison need more opportunities to compare obvious amounts and practice the different ways to describe the comparison. For example, there are more teddy bear counter than chips. There are fewer chips than teddy bear counters.

Keep the number of objects in each set within the range of student success and then build to using greater numbers of items. Continue giving students opportunities to describe their thinking and to use comparison vocabulary.

K.OA.1

If students do not have time to draw pictures before working with numerical expressions and equations, they may be more likely to use finger counting and rote memorization in working with addition and subtraction-especially when learning basic facts.

K.G.1

When first learning about shapes, students may use informal names for shapes, such as calling a sphere a ball or cube a box. Reinforce appropriate vocabulary by reminding students to use the correct mathematical name. To help with this misconception, provide a variety of shapes to discuss and sort. Talk about how students can recognize examples and non-examples of shapes in the environment.

Addressing Student Misconceptions and Common Errors Cont.**K.G.2**

Kindergarten students usually will not recognize a triangle that has been inverted or turned upside down. Students often say that an inverted triangle does not look like a triangle. Teachers can provide activities to talk about what a shape looks like and identify specific attributes that define a shape. Another way to address this misconception is to have students trace shapes.

K.G.5

Some students may confuse the name of a two-dimensional shape with a related three-dimensional shape or the shape of its face. For example, students might call a cube a square. While exploring with two-dimensional flat shapes, start by using flat paper.

Source: [The Common Core Mathematics Companion: The Standards Decoded \(What They Say, What They Mean, How to Teach Them\)](#)

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