

**Essential Skill: Know number names and the count sequence.**

**What it looks like:**

1. Students rote count by starting at one and counting to 100. When students count by tens they are only expected to master counting on the decade (0, 10, 20, 30, 40 ...). This objective does not require recognition of numerals. It is focused on the rote number sequence.
2. Students begin a rote forward counting sequence from a number other than 1. Thus, given the number 4, the student would count, "4, 5, 6, 7 ...". This objective does not require recognition of numerals. It is focused on the rote number sequence 0-100.
3. Students write the numerals 0-20 and use the written numerals 0-20 to represent the amount within a set. For example, if the student has counted 9 objects, then the written numeral "9" is recorded. Students can record the quantity of a set by selecting a number card/tile (numeral recognition) or writing the numeral. Students can also create a set of objects based on the numeral presented. For example, if a student picks up the number card "13", the student then creates a pile of 13 counters. While children may experiment with writing numbers beyond 20, this standard places emphasis on numbers 0-20.
  - a. Due to varied development of fine motor and visual development, reversal of numerals is anticipated. While reversals should be pointed out to students at appropriate times and correct formation modeled in instruction, the emphasis of this standard is on the use of numerals to represent quantities rather than the correct handwriting formation of the actual numeral itself.

**Example**

**Essential Skill: Count to tell the number of objects.**

Students use numbers, including written numerals, to represent quantities and to solve quantitative problems such as counting objects in a set, counting out a given number of objects, and comparing sets or numerals.

**What it looks like:**

1. Students count a set of objects and see sets and numerals in relationship to one another. These connections are higher-level skills that require students to analyze, reason about, and explain relationships between numbers and sets of objects. The expectation is that Level 1 students become comfortable with these skills with the numbers 1-20.
  - a. Students implement correct counting procedures by pointing to one object at a time (one-to-one correspondence), using one counting word for every object (synchrony/ one-to-one tagging), while keeping track of objects that have and have not been counted. This is the foundation of counting.
  - b. Students answer the question “How many are there?” by counting objects in a set and understanding that the last number stated when counting a set (...8, 9, **10**) represents the total amount of objects: “There are **10** bears in this pile.” (cardinality). Since an important goal for children is to count with meaning, it is important to have children answer the question, “How many do you have?” after they count. Often times, children who have not developed cardinality will count the amount again, not realizing that the **10** they stated means 10 objects in all.

Young children believe what they see. Therefore, they may believe that a pile of cubes that they counted may be more if spread apart in a line. As children move towards the developmental milestone of conservation of number, they develop the understanding that the number of objects does not change when the objects are moved, rearranged, or hidden. Children need many different experiences with counting objects, as well as maturation, before they can reach this developmental milestone.

- a. Another important milestone in counting is inclusion (aka hierarchal inclusion). Inclusion is based on the understanding that numbers build by exactly one each time and that they nest within each other by this amount. For example, a set of three objects is nested within a set of 4 objects; within this same set of 4 objects is also a set of two objects and a set of one. Using this understanding, if a student has four objects and wants to have 5 objects, the student is able to add one more- knowing that four is within, or a sub-part of, 5 (rather than removing all 4 objects and starting over to make a new set of 5). This concept is critical for the later development of part/whole relationships. Students are asked to understand this concept with and without (0-20) objects. For example, after counting a set of 8 objects, students answer the question, “How many would there be if we added one more object?”; and answer a similar question when not using objects, by asking hypothetically, “What if we have 5 cubes and added one more. How many cubes would there be then?” In order to answer “how many?” students need to keep track of objects when counting. Keeping track is a method of counting that is used to count each item once and only once when determining how many. After numerous experiences with counting objects, along with the developmental understanding that a group of objects counted multiple times will remain the same amount, students recognize

the need for keeping track in order to accurately determine “how many”. Depending on the amount of objects to be counted, and the students’ confidence with counting a set of objects, students may move the objects as they count each, point to each object as counted, look without touching when counting, or use a combination of these strategies. It is important that children develop a strategy that makes sense to them based on the realization that keeping track is important in order to get an accurate count, as opposed to following a rule, such as “Line them all up before you count”, in order to get the right answer.

As children learn to count accurately, they may count a set correctly one time, but not another. Other times they may be able to keep track up to a certain amount, but then lose track from then on. Some arrangements, such as a line or rectangular array, are easier for them to get the correct answer but may limit their flexibility with developing meaningful tracking strategies, so providing multiple arrangements help children learn how to keep track. Since scattered arrangements are the most challenging for students, this standard specifies that students only count up to 10 objects in a scattered arrangement and count up to 20 objects in a line, rectangular array, or circle.

### Example

Essential Skill: **Compare numbers.**

What it looks like:

1. 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.<sup>1</sup>
2. Compare two numbers between 1 and 10 presented as written numerals.

Example

**Essential Skill: Work with numbers 11–19 to gain foundations for place value**

**What it looks like:**

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.

**Example**

**Essential Skill: Understand addition as putting together and adding to, and subtraction as taking apart and taking from.**

What it looks like:

1. Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.
2. Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.
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  $5 = 4 + 1$ ).
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.
5. Fluently add and subtract within 5.

Example

Essential Skill: **Describe and compare measurable attributes of objects.**

What it looks like:

1. Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.
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.*

Example

Essential Skill: **Classify objects and count the number of objects in each category.**

What it looks like:

Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.

Example

**Essential Skill: Demonstrate an understanding of time concepts and tools that measure time.**

**What it looks like:**

Demonstrate an understanding of concepts time (e.g., morning, afternoon, evening, today, yesterday, tomorrow, week, year) and tools that measure time (e.g., clock, calendar).

1. Name the days of the week.
2. Identify the time (to the nearest hour) of everyday events (e.g., lunch time is 12 o'clock, bedtime is 8 o'clock at night).

**Example**

**Essential Skill: Identify and describe shapes**

**What it looks like:**

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*.
2. Correctly name shapes regardless of their orientations or overall size (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres)..
3. Identify shapes as two-dimensional (lying in a plane, “flat”) or three-dimensional (“solid”).

**Example**

Essential Skill: **Analyze, compare, create, and compose shapes.**

What it looks like:

1. 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).
2. Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.
3. Compose simple shapes to form larger shapes. *For example, “Can you join these two triangles with full sides touching to make a rectangle?”*

Example