

Observing Students As They Count

Counting is the basis for understanding our number system and for almost all number work in the primary grades. In order to count properly, students must know the number names and their sequence. However, students must also be able to write these numbers.

Connecting Words and Numbers to Quantities

Students need to connect number words (seven) and written number (7) to the quantities they represent (|||| ||). To ensure that each object is counted once and only once, they need a system for keeping track of what has and has not been counted. They must also know that the final number they say represents the total number of things counted.

In order to use the above skills to solve problems, students will be doing a lot of counting in this unit and throughout the year. Students will count into the hundreds by 1s, 2s, 5s, 10s, and other numbers. Many students will use counting-on or counting-back procedures to solve addition and subtraction problems.

Expect a great deal of diversity among your students. By the end of the year, many will have learned the oral counting sequence, up to 150 and will recognize patterns in the number sequence to at least 150. However, most second graders will not end the year with a grasp of quantities greater than 100. Many of the activities that focus on quantity can be adjusted so that students can work at a level of challenge that is appropriate for them; early in Grade 2, some students will need repeated experiences with smaller quantities, while others will be able to work with larger collections.

Types of Counting Opportunities

Your students will have many opportunities to count and use numbers in this unit and throughout the year. You can learn what your students understand about counting by observing them as they work. Listen to students as they talk with one another. Observe them as they count objects and as they

count orally and in writing. Ask them about their thinking as they work. You may observe some of the following:

Counting orally Generally students can count higher orally than they can with objects or in writing. Question students to see whether they can count on or back from any number. “Can you count starting from 93?” Or, “Can you count backwards starting at 45?” Most second graders can count on from any number less than 100, but a few may need to start over at one or a familiar number, such as 20.

Counting objects Students will vary in their ability to count objects. Some may count correctly when objects are spread out in a line or when they can move the objects while counting, but they may have difficulty counting objects in a random grouping.

Counting by writing numbers In counting to 100 and beyond, some second graders may have difficulty at the “bridges” (19, 20 or 39, 40) and with numbers greater than 100. For example, some students count “99, 100, 200, 300, 400,” and so on, and others count “110, 200, 201, . . . 209, 210, 300,” and so on. See **Dialogue Box:** What Comes after 109? page 212.

Note: Young students frequently reverse digits (a backwards 5) or numbers (51 for 15). Often this is not a mathematical problem but more a matter of experience. Students need many opportunities to see and practice the sequence of written numbers. Number formation should be addressed in your curriculum handwriting.

Counting by 2s, 5s, and other numbers Counting by groups, such as 2s, requires knowing the number’s sequence (e.g., 2, 4, 6, 8 . . .) by rote. Students must also realize that each time they say a number they are adding another group of two to their count. Keeping track while counting by groups may be difficult for some students. As with counting by 1s, students often learn the oral sequence before they are fully able to comprehend what counting by groups means. For example, students may not realize that the total of a quantity is the same regardless of how it is counted.