Observing Kindergarteners as They Count

In Kindergarten, you can expect to see a wide range of number skills within your class. Students in the same class can vary considerably in age and in their previous experience with numbers and counting.

Your students will have many opportunities to count and use numbers not only in this unit, but throughout the year. You can learn a great deal about what your students understand by observing them. Listen to students as they talk with one another. Observe them as they count orally, as they count objects, and as they use numerals to record. Ask them about their thinking. You may observe some of the following:

Counting Orally

By the end of the year, most kindergarteners will have learned to rote count to 10 and beyond, with some able to count as high as 100. Many will be able to count orally much higher than they can count objects. Many who have learned the internal counting pattern or sequence (1, 2, 3 . . . 21, 22, 23 . . .), will still find the "bridge" numbers into the next decade (such as 19, 20, or 29, 30) difficult. You may hear children count "twenty-eight, twenty-nine, twenty-ten." Just as the young child who says "I runned away" understands something about the regularities of the English language, the student who says "twenty-ten" understands something about the regularity of the counting numbers. Students gradually learn the bridge numbers as they hear and use the counting sequence.

Counting Quantities

Most kindergarteners end the year with a grasp of *quantities* up to 20 or so. Some students accurately count quantities above 20, while others may not consistently count smaller quantities. Some may be inconsistent and count successfully one time while having difficulty the next.

Even when students can accurately count the objects in a set, they may not know that the last number counted also describes the number of objects in the set. You may observe students who successfully count a set of cubes, but have to go back and recount the set to answer the question, "How many cubes are there?" These students have not yet connected the counting numbers to the quantity of objects in a set. Students develop their understanding of quantity through repeated experiences organizing and counting sets of objects. In Kindergarten, many of the activities that focus on quantity can be adjusted so that students are working at a level of challenge appropriate for them.

Organizing a Count

Some students may be able to count objects they can pick up, move around, and organize with far more accuracy than they can when counting static objects, such as pictures of things on a page. You may observe some students who can count objects correctly when the group is organized for them, but you will see others who have trouble organizing or keeping track of objects themselves. They will need many and varied experiences with counting to develop techniques for counting accurately and for keeping track of what they are counting.

Counting by Writing Numbers

Knowing how to write numerals is not directly related to counting and understanding quantity; however, it is useful for representing a quantity that has been counted. Young students who are learning how to write numerals frequently reverse numbers or digits. Often this is not a mathematical problem but a matter of experience. Students need many opportunities to see how numerals are formed and to practice writing them. They should gain this experience by using numbers to record mathematical information, such as the number of students in school today or the number of objects on a page of a counting book. Numeral formation is related to letter formation; both are important in order to communicate in writing. We recommend that rote practice of numeral writing be part of handwriting instruction rather than mathematics.