# Teacher Note

Tuesday night **homework**

All grade levels please read for Wednesday

# Counting Is More Than 1, 2, 3

Counting is the basis for understanding our number system and for almost all of the number work in the primary grades. It involves more than just knowing the number names, their sequence, and how to write each number. While it may seem simple, counting is actually quite complex and involves the interplay between a number of skills and concepts.

## Rote Counting

Students need to know the number names and their order by rote; they learn this sequence—both forward and backward—by hearing others count and by counting themselves. However, just as saying the alphabet does not indicate that a student can use written language, being able to say "one, two, three, four, five, six, seven, eight, nine, ten" does not necessarily indicate that students know what those counting words mean. Students also need to use numbers in meaningful ways if they are to build an understanding of quantity and number relationships.

## One-to-One Correspondence

To count accurately, a student must know that one number name stands for one object that is being counted. Often, when young children first begin to count, they do not connect the numbers in the "counting song" to the objects they are counting. Children learn about one-to-one correspondence through repeated opportunities to count sets of objects and to watch others as they count. One-to-one correspondence develops over time with students first counting small groups of objects (up to five or six) accurately, and eventually larger groups.

## Keeping Track

Another important part of counting accurately is being able to keep track of what has already been counted and what remains to be counted. As students first learn to count sets of objects, they often count some objects more than once and skip other objects altogether. Students develop strategies for organizing and keeping track of a count as they realize the need and as they see others use such strategies.

## Connecting Numbers to Quantities

Many young students are still coordinating the ordinal sequence of the numbers with the cardinal meaning of those numbers. In other words, we get to 5 by counting in order 1, 2, 3, 4, 5. Understanding this aspect of number is connected to the one-to-one correspondence between the numbers we say and the objects we are counting. However, being able to count accurately using this ordinal sequence is not the same as knowing that when we have finished counting, the final number in our sequence will tell us the quantity of the things we have counted.

## Conservation

Conservation of number involves understanding that three is always three, whether it is three objects together, three objects spread apart, or some other formation. As students learn to count, you will see many who do not yet understand this idea. They think that the larger the arrangement of objects, the more objects there are. Being able to conserve quantity is not a skill that can be taught; it is a cognitive process that develops as children grow.

## Counting by Groups

Counting a set of objects by equal groups such as 2s, requires that each of the steps mentioned above happens again, at a different level. Students need to know the 2s sequence (2, 4, 6, 8) by rote. They need to realize that one number in this count represents two objects, and that each time they say a number they are adding another group of two to their count. Keeping track while counting by groups becomes a more complex task as well. Students begin to explore counting by groups in the data unit, "Counting Ourselves and Others," as they count the number of eyes in their class. However, most students will not count by groups in a meaningful way until first or second grade.