CHAPTER 1

Mathematics of the Chapter

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Laurie's Insights

Listen to Laurie talk about how this chapter fits in with your students' learning progressions.

Laurie's Notes

Language Routines

Compare & Connect: What is similar? What is different?

To use this routine, prompt students to reflect on a topic and then have a class discussion about connections or differences in mathematical approaches, representations, structure, concepts, and language.

Laurie's Notes

Overview

What we're doing…

Students first learn to model and count each number before they associate the symbol to the number name and quantity. In this chapter, students learn to write the numbers 0 through 5 using verbal pathways. The verbal pathways are short action statements on how to form the numbers 0 to 5.

"Pull around and in, around and stop."

Why we're doing it…

Eventually, we want students to fluently add and subtract within 10. A key step is seeing a group of objects and knowing the amount without having to count. This is called *subitizing*. Give students numerous opportunities to practice subitizing, as it is a skill that cannot be explicitly taught. Smaller quantities are easier for students to subitize. One way to assess a student's ability to subitize is to roll a die and ask how many dots are shown. If students can immediately name the quantity, they are able to subitize. Each lesson is intentionally designed so that students focus on perceptually subitizing numbers to five as they count groups of objects arranged in different formations. Some students may also develop conceptual subitizing when they can see a number as the sum of two parts.

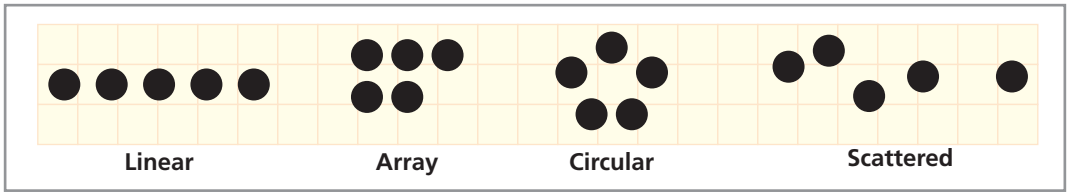
"I see two dots."

"I see 4 dots and 2 dots."

more.

Essential Background

There are different number formations that students should experience when they are asked to count objects. Linear formations are easier for students to track. Array formations, set up in rows and columns, help build strong connections to addition. When objects are arranged in a circular formation, students must decide where to start counting and know when to stop. Scattered formations are the most difficult for students, as it is easy to lose track of which objects have been counted.



When we count, we start with the number 1. The set of numbers 1, 2, 3, 4, … are called the *counting numbers*. The numbers 1 to 5 are learned before the number 0, because zero is a difficult concept for students to grasp, as they cannot point to or count objects. Students learn that 0 stands for having none of something. After students learn the numbers 0 to 5, they show the numbers in sequential order. Counting forward, backward, and from a given number helps students understand the number sequence and prepares them for comparing numbers in the next chapter.