

Video Summary

Early multiplication and division

(8 minutes 40 seconds)

The video for Session 2 includes three clips from three different grade-level classes: first grade, third grade, and fourth grade.

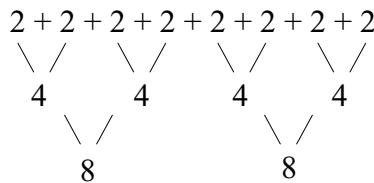
Ways to make 16

(3 minutes)

First-grade class with teacher Malia Scott

The first sequence shows a first-grade class examining ways to make 16. Jason breaks 16 into $2 + 2 + 2 + 2 + 2 + 2 + 2 + 2$. The teacher records this chain on the board, and Jason counts 8 twos. Serena confirms that he has enough twos, going to the board and counting by 2 as she points to them: “2, 4, 6, 8, 10, 12, 14, 16.”

Jason, who wrote the problem, explains that he thought about it this way:



And he knew $8 + 8$ is 16.

Counting by 25s

(1 minute 20 seconds)

Fourth-grade class with teacher Angela Philactos

In the next sequence, we see a group of fourth-grade students counting to 400 by 25s. It is still important to keep in mind the quantities represented by the numbers in the “counting by” chant. They use cubes connected in 5×5 flats to model the situation as they count 25, 50, 75, 100, 125, ... up to 400. The teacher asks them, “Is there any way you can organize those [flats of cubes] so I can tell at a glance how many?” The students then group their cube-flats in stacks of four, or 100 cubes each.

How many legs on three elephants?

(4 minutes 20 seconds)

Third-grade class with teacher Nancy Horowitz

In the final sequence, two third-grade students share their approaches to the problem, “How many legs do three elephants have?” One student, Ebony, draws three circles with four slashes in each one.



$$4 \text{ legs} \times 3 \text{ circles (elephants, each with 4 legs)} = 12 \text{ legs}$$

David uses the arithmetic statements, “ $4 + 4 = 8$, so that’s two elephants, and if we add another elephant, it’s 12 legs, $8 + 4 \text{ legs} = 12 \text{ legs}$.”

The video concludes with comments from the teacher, Nancy Horowitz. She talks about the difficulty for children who are starting to multiply of keeping track of the number of groups versus the number of items in the group and knowing what the answer stands for—in this example, is it elephants or legs?