PUZZLE TALK

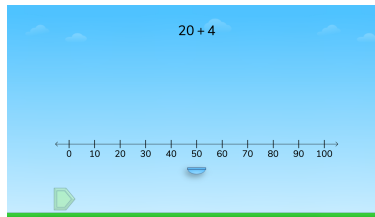| First Grade | Adding and Subtracting by Tens | Addition and Subtraction On the Number Line |

Materials

Whiteboards and markers
Counters
Base ten blocks
Beans and sticks

Directions

20 + 4

- Show a puzzle in Level 1 that has a multiple of ten plus a single digit number. Ask students, "What do you see? How do you think we solve this puzzle?" Have students explain their strategy to solve sum on the number line.
- Ask students, "What numbers can we see on this number line? What numbers are not shown? How do you know?"

- Repeat step 1 with a subtraction problem in Level 2. Discuss the directions you move on the number line to find a sum, difference. Ask students to explain their strategy to find the difference on the number line.

90 − 5

20 + 70
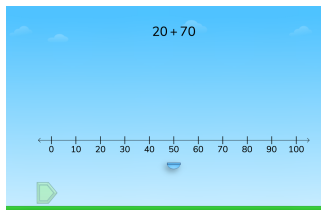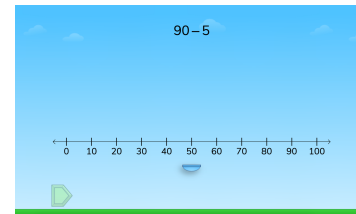
- Play puzzles in Level 3 starting with addition, then subtraction. Have students explain their strategies. Look for students to use numbers of tens (e.g., 60 + 30 is 6 tens + 3 tens which equal 9 tens).

Sample Questions

- What whole numbers are not shown between 20 and 30?
- What number is in the middle of each space between two tens? How do you know?
- Why do you move to the right on a number line to add? Why do you move to the left to subtract?
- How did you determine where to place the bucket?
- How does this relate to adding single digit numbers? For example, how is 30 + 50 similar to 3 + 5?
- Multiples of 10 are called "friendly numbers" because they are easy to add and subtract. Do you agree? Why or why not?

What to look for

How does the student:
- discuss direction on the number line? (Numbers increase as you move from left to right.)
- understand that the distance between 10 and 20 is the same size as the distance between 50 and 60?
- understand that there are 10 whole number jumps from one ten to the next higher ten?
- understand that the number in the middle of the two tens will have a 5 in the ones place?
- explain that adding and subtracting tens is the same as adding and subtracting one-digit numbers? (unitizing)