

Strategies for *Close to 100*

As students shared the strategies they were using for choosing numbers in the *Close to 100* game, the teacher posted their ideas on chart paper.

Teacher: Think about how you chose numbers to try. Do you have any advice for your friends on how to get close to 100? Tell me something that *you* look for when you try to get close to 100.

Elena: I first try to find two numbers that equal 10, like 7 and 3, or 6 and 4.

Teacher: For the tens digit?

Elena: Yes.

Oscar: I'd look for 9, and put another number with it, and it might come close to 100.

Teacher: When you started with 9, was it on the tens side or the ones side?

Oscar: On the tens side, so it's 90.

Teacher: So you started with 90? What else did you look at?

Oscar: I tried to get 10 on the ones side.

Gil: I tried to find a high number and then a little one, like 90-something, and then if I had a zero, I made something like zero five (05).

Teacher: So you tried to make something in the 90s and a 1-digit number.

Beatriz: I tried to find a way to get 9, and then I tried to find a way to make 10.

Teacher: So you tried to find two numbers that you could use in the tens place to make 90 and two numbers to make 10?

Beatriz: Yes, I make 9 with the first two numbers [meaning the tens digits; for example, 70 and 20, or 80 and 10]. Then I try to make 10 with the second two. I don't want to make the first two equal 10 because then I would already have 100 [$70 + 30 = 100$], and you hardly ever get two zeros. So, I try to get numbers that make 9 instead of 10, and then I try to make 10 in the ones place.

Teacher: Did anyone think about the combinations to make 100 that you already know and use those to choose your cards?

Denzel: I didn't have $20 + 80$, which I know is 100, so I did 21 plus 83 because that was the closest I could get. I made $83 + 21$ and that was 104.

Deondra: I know that 60 plus 40 equals 100. I had the cards to make 62. That's 2 more than 60, so I looked to see if I could make a number 2 less than 40. I couldn't make 38, so I made 37. 62 plus 37 got me to 99.

To prepare for this discussion, the teacher walked around the classroom while students were playing *Close to 100* and noted two main strategies: using digits in the tens place to make 90 and in the ones place to make 10, and starting with known combinations and adjusting the numbers. Her goal in this discussion was to highlight both of these approaches. When no student described starting with known combinations, she explicitly asked whether anyone had used this approach.