

Race to 100

Reporting Category	Number and Number Sense
Topic	Identifying the ten-to-one relationship among ones, tens, and hundreds, using manipulatives
Primary SOL	2.1 The student will a) read, write, and identify the place value of each digit in a three-digit numeral, using numeration models.
Related SOL	2.5, 2.6b

Materials

- Various manipulatives (e.g., single beans and cups of 10 beans each, base-10 blocks, single popsicle sticks and bundles of 10 popsicle sticks, pennies and dimes, connecting cubes, single paper clips and chains of 10 paper clips, plastic linking cubes)
- Number (or dot) cubes
- Place value mat(attached)

Vocabulary

add, addition, column, digit, ones, place value, rows, sum, tens, hundreds, manipulative

Student/Teacher Actions (what students and teachers should be doing to facilitate learning)

1. Put students into groups of two or more. Provide each group with place value mats, sets of manipulatives, and a pair of number cubes. Explain that each player will create sets of ten to ultimately reach 100 and win the game.
2. Explain the game “Race to 100.” Each player rolls the pair of number cubes and adds the two numbers rolled to determine how many manipulatives (e.g., beans, pennies, popsicle sticks) he/she receives. For example, if a player rolls a 6 and a 3, he/she gets 9 manipulatives. Then, it is the next player’s turn. When it is the first player’s turn again, he/she adds the newly rolled sum to his/her previously rolled sum to see whether the new total number of manipulatives will make a set of 10. For example, he/she rolls a 2 and a 5 on the next turn and then adds 7 beans to the previous 9 beans for a new total of 16 beans. Players place their manipulatives in the correct columns of their place value mats. Play continues until a player reaches 100.
3. Have students choose a different manipulative for the second round of the game. One goal is for them to see the ten-to-one relationship, using a variety of manipulatives.

Assessment

- **Questions**
 - How does the ten-to-one relationship of the dimes and pennies compare to the ten-to-one relationship of the base-10 blocks?
 - With which manipulative was it easiest to see the ten-to-one relationship? What made it easier to see the relationship with that manipulative than with the other manipulatives?

- With which manipulative was it hardest to see the ten-to-one relationship? What made it harder to see the relationship with that manipulative than with the other manipulatives?
- **Journal/Writing Prompts**
 - Mandy is playing “Race to 100.” After several rolls, she has 24 manipulatives. Choose three different manipulatives, and draw what Mandy’s place value mat might look like at this point.”
 - Eric is playing “Race to 100.” At this point in the game, he has 72 linking cubes. On his next roll, he rolls a 4 and a 5. Draw a picture showing Eric’s place value mat before his roll and his place value mat after his roll.
 - Chris and Meghan are playing “Race to 100.” Chris is playing with beans and Meghan is playing with base-10 blocks. Chris has 21 beans, and Meghan has 31 blocks. Draw a picture of Chris’s and Meghan’s place value mats. Write at least two statements comparing Chris’s and Meghan’s place value mats.
- **Other**
 - Monitor students as they are playing the game to be sure they trade a group of 10 single manipulatives for a manipulative of equivalent value whenever possible.
 - Monitor students’ various addition strategies (i.e., counting on, one-more-than, two-more-than, doubles, near doubles, make-ten, and partial sums) as they play the game. Ask students to explain how they figured out the sums.
 - Have the class form a circle to participate in a discussion. Have students take turns telling something they learned, something they will remember, and an important discovery from the activity.

Extensions and Connections (for all students)

- After playing several rounds of “Race to 100,” have students play “Race to Zero.” Students start with 100 objects and then roll the number cubes to subtract the manipulatives until all the manipulatives have been removed. The first to have zero manipulatives wins.
- Have students pause at different points in the game to practice comparing their sum to sum(s) of the opposing player(s).

Strategies for Differentiation

- Have students use two 10-sided number generators to create larger sums in the “Race to 100” game.
- Challenge students to “race” to different numbers. For students struggling with the larger number, give them a smaller number to which to “race.” Students needing an extra challenge could “race” to a larger number.
- Allow students to use calculators to help them confirm their sums.
- Some students may find it helpful to use a blank hundred chart with smaller manipulatives. As the student progresses through the game, he/she can fill in the hundred chart by placing the manipulatives in the empty squares.
- Use a poster-sized hundred chart and larger manipulatives for students with fine motor challenges.

- If students are having trouble with using two cubes, have them play the game using one cube.
- If available, use an interactive whiteboard to demonstrate the activity with the class.
- Some students may benefit from using the interactive whiteboard rather than the traditional manipulatives.

Place Value Mat

Hundreds	Tens	Ones