

Close to 500

Strand:	Number and Number Sense
Topic:	Identifying the 10-to-one relationship among ones, tens, and hundreds, using manipulatives
Primary SOL:	2.1 The student will a) read, write, and identify the place and value of each digit in a three-digit numeral, with and without models
Related SOL:	2.5, 2.6b

Materials

- “Close to 500” Rules (attached)
- Place-value mat (attached)
- “Close to 500” Score Card (attached)
- Manipulatives (e.g., single beans, cups of 10 beans each, 10 cups of 10 beans to make 100 each, base-10 blocks; single ice pop sticks, bundles of 10 ice pop sticks, and 10 bundles of 10 ice pop sticks to make 100; pennies, dimes and dollars; connecting cubes, single paper clips and chains of 10 paper clips, plastic linking cubes)
- Number (or dot) cubes

Vocabulary

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

Student/Teacher Actions: What should students be doing? What should teachers be doing?

1. Group students in pairs.
2. Provide each group with place-value mats, sets of manipulatives, and a number cube.
3. Explain that each player will create sets of ones, tens, and hundreds, trying to get as close to 500 as they can to win the game.
4. Explain rules to the “Close to 500” game.

Assessment

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

- **Journal/writing prompts (include a minimum of two)**
 - 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’ and Meghan’s place-value mats. Write at least two statements comparing Chris’ and Meghan’s place-value mats.
- **Other Assessments (include informal assessment ideas)**
 - Monitor students while 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’ 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 the sum(s) of the opposing player(s).

Strategies for Differentiation

- Have students use two 10-sided number generators (number cubes) 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 hundreds chart with smaller manipulatives. As the student progresses through the game, he/she can fill in the chart by placing the manipulatives in the empty squares. (See below)
- Use a poster-sized hundreds chart and larger manipulatives for students with fine-motor challenges.
- If students have 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.

“Close to 500” Rules

Materials: Each player has a place value mat. Each team member will receive a laminated place-value chart and a hard copy of a place-value chart. Students will demonstrate writing numerals on the laminated place-value chart and use the hard copy place-value chart to show representations of numbers using manipulatives.

10 beans, 10 linking cubes and 1 counting chip

1. Each player takes turns rolling the number cube. On the first roll, the player decides which place value to put the number of the roll. The number rolled is used to determine how many manipulatives he/she receives. For example, if a player rolls a 6, he/she gets either a representative of 6, 60, or 600 manipulatives.
2. Player 1 writes his number in the column on the place-value mat they chose.
3. Player 2 takes a turn.
4. When it is the player 1’s turn again, player 1 will choose which of the remaining two columns to put their second roll. For example, if they chose to put their first roll in the hundreds column, then they have to choose to put the second roll in the tens or ones column.
5. Player 2 repeats the same procedure as player 1.
6. When it is the player 1’s turn again, player 1 will put the result of their roll in the final column.
7. The player who gets closest to 500 wins.
8. Have students choose a different manipulative for the second round. One goal is for them to see the 10-to-one relationship, using a variety of manipulatives.

Note: The following pages are intended for classroom use for students as a visual aid to learning.

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Place Value Mat

Hundreds	Tens	Ones

“Close to 500” Score Card

	Player 1		Player 2	
	Final Number	How far from 500?	Final Number	How far from 500?
Round 1				
Round 2				
Round 3				