LESSON 9

Objective

Subtract 10 or 100.

Common Core State Standards

- **2.NBT.8** Mentally add 10 or 100 to a given number 100–900, and mentally subtract 10 or 100 from a given number 100–900.

Number and Operations in Base Ten

Subtracting 10 or 100

With a thorough understanding of place value, children can use mental math to subtract 10 or 100 from a given number. With practice, children realize that subtracting 10 affects the tens place and subtracting 100 affects the hundreds place without changing the ones place. They know also that if 10 is subtracted from 100, 200, 300, 400, 500, 600, 700, 800, or 900, then the hundreds place is affected. Manipulatives such as Base Ten Blocks can help children understand the place value changes involved in subtracting 10 or 100.

Try It! *Perform the Try It! activity on the next page.*

Talk About It

Discuss the Try It! activity.

- Write *327 – 10* in vertical format on the board. **Ask:** *When we subtract, do we need to change the ones? Do we need to change the tens?* **Say:** *When we subtract 10, we decrease the tens by one. We do not change the ones, since zero is subtracted in the ones place.*
- Write *327 – 100* in vertical format on the board. **Ask:** *Do we need to change the ones? Do we need to change the tens? Do we need to change the hundreds?* **Say:** *We only need to change the hundreds, because zero is subtracted in the tens and ones places. We decrease the hundreds by 1.*
- **Ask:** *Why would it be easy to subtract 10 or 100 in your head without writing the problem down?*

Solve It

With children, reread the problem. Have children write the number sentences that solve the parts of the problem. Then have them write a sentence telling why it is easy to subtract 10 or 100.

More Ideas

For other ways to teach subtracting 10 or 100—

- Have children pick 3 digits from a bag and create a three-digit number. Have them build the number with Base Ten Blocks. Next have children subtract 10 and then subtract 100 from the original number.
- Have children work in pairs. Have one child write a three-digit number. Have the second child build the number with Base Ten Blocks and subtract either 10 or 100 from the number. Have the first child decide if 10 or 100 were subtracted and write the new number. Switch roles and repeat.

Formative Assessment

Have children try the following problem.

Which digit in 319 changes if 10 is subtracted?

A. 1 **B.** 3 **C.** 9

Try It! 25 minutes | Pairs

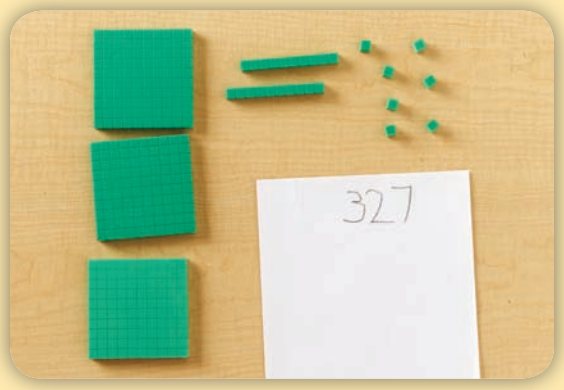
Here is a problem about subtracting 10 or 100.

The second grade classes collected canned goods for the local food bank. Mrs. Dell's class collected 327 canned goods. Mr. Larson's class collected 10 less than Mrs. Dell's class. Miss Johnson's class collected 100 less than Mrs. Dell's class. How many canned goods did Mr. Larson's and Miss Johnson's classes collect?

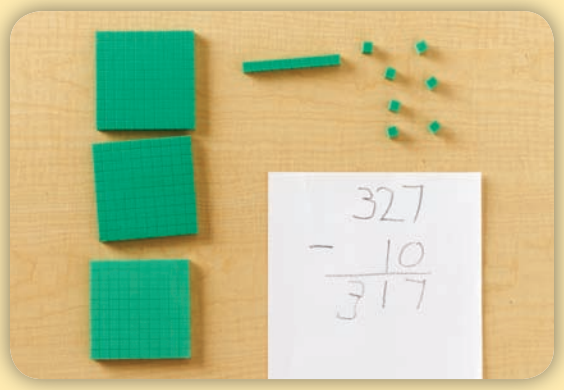
Introduce the problem. Then have children do the activity to solve the problem. Distribute Base Ten Blocks, paper, and pencils to children.

Materials

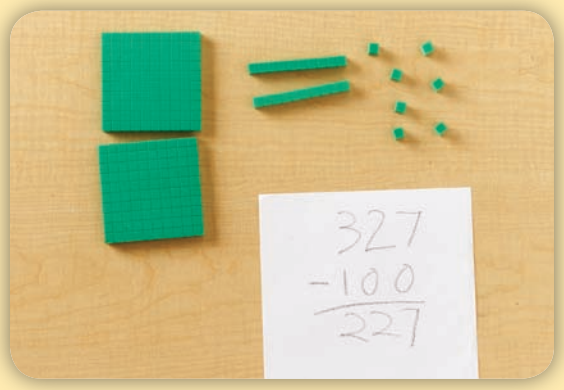
- Base Ten Blocks (10 flats, 10 rods, and 15 units per pair)
- paper (1 sheet per pair)
- pencils (1 per pair)



1. Say: *Let's use blocks to show the number of canned goods Mrs. Dell's class collected.* **Ask:** *How many hundreds do we need? How many tens do we need? How many ones do we need?*



2. Say: *Now let's find the number of canned goods Mr. Larson's class collected. They collected 10 less.* **Ask:** *Do we need to change the ones? Do we need to change the tens? Do we need to change the hundreds?* **Say:** *We subtract 1 ten from the 2 tens, to give us 1 ten. Write the difference on your paper.*



3. Say: *Let's find the number of canned goods Miss Johnson's class collected. They collected 100 less than Mrs. Dell's class.* **Ask:** *Do we need to change the ones? Do we need to change the tens? Do we need to change the hundreds?* **Say:** *We subtract 1 hundred from the 3 hundreds. Write the difference on your paper.*

⚠ Look Out!

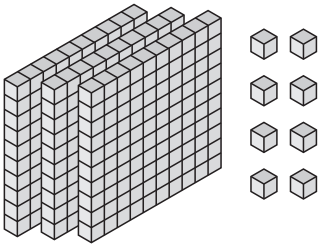
Watch for children who are not lining up their numbers correctly. If the place values aren't aligned, the children will not subtract properly and will not get the correct answer. If children repeatedly have difficulties, have them use grid or graph paper to keep their digits aligned

Answer Key

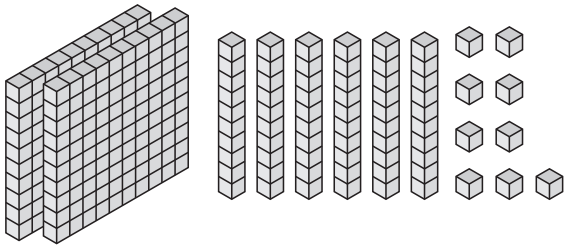
Look at the number. Then look at the blocks. Build the model. Decide if 10 or 100 were subtracted. Write 10 or 100.

(Check students' work.)

1. 408 – 100



2. 279 – 10



Look at the first number. Draw a model. Look at the difference. Decide if 10 or 100 need to be subtracted. Write 10 or 100.

3. 189 – 10 = 179

4. 528 – 100 = 428

Look at each number. Subtract 10. Then subtract 100. Write both differences.

5.

327	327
– 10	– 100
317	227

6.

999	999
– 10	– 100
989	899

7.

459	459
– 10	– 100
449	359

8.

221	221
– 10	– 100
211	121

Answer Key

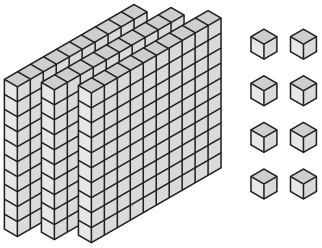
Challenge! When we subtract 10 from a number, we usually only need to decrease the tens by one. Is there a time when subtracting 10, that you need to change the number in the hundreds place? Use drawings or words to show your answer.

Challenge: (Sample) Yes; If I subtract 10 from 0 tens, then I will need to borrow from the hundreds and change the number in the hundreds place.

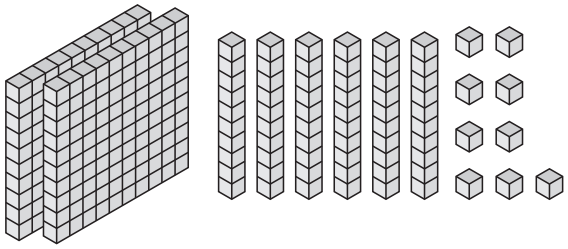
Name _____

Look at the number. Then look at the blocks. Build the model. Decide if 10 or 100 were subtracted. Write 10 or 100.

1. 408 – _____



2. 279 – _____



Look at the first number. Draw a model. Look at the difference. Decide if 10 or 100 need to be subtracted. Write 10 or 100.

3. 189 – _____ = 179

4. 528 – _____ = 428

Look at each number. Subtract 10. Then subtract 100. Write both differences.

5. 327 327

– _____ – _____

6. 999 999

– _____ – _____

7. 459 459

– _____ – _____

8. 221 221

– _____ – _____

Name _____

Challenge! When we subtract 10 from a number, we usually only need to decrease the tens by one. Is there a time when subtracting 10, that you need to change the number in the hundreds place? Use drawings or words to show your answer.