Number and Operations in Base Ten

Adding 10 or 100

With a thorough understanding of place value, children can use mental math to add 10 or 100 to a given number. With practice, children realize that adding 10 affects the tens place and adding 100 affects the hundreds place without changing the ones place. They know also that if 10 is added to 190, 290, 390, 490, 590, 690, 790, or 890, then the hundreds place is affected. Manipulatives such as Base Ten Blocks can help children understand the place value changes involved in adding 10 or 100.

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

Talk About It

Discuss the Try It! activity.

■ Write *148 + 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:** *When we add 100, we only need to increase the hundreds by 1, since zeros are added in the tens and ones places.*

■ Write *148 + 10* 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:** *When we add 10, we only need to increase the tens by 1, since zero is added in the ones place.*

■ **Ask:** *Why would it be easy to add 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 add 10.

More Ideas

For other ways to teach adding 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 add 10 and then add 100 to 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 add either 10 or 100 to the number. Have the first child decide if 10 or 100 were added and write the new number. Switch roles and repeat.

Formative Assessment

Have children try the following problem.

Which digit in 723 changes if 100 is added?

**A.** 2   **B.** 3   **C.** 7

Try It! 25 minutes | Pairs

Here is a problem about adding 10 or 100.

The gym teacher tracks how many sit-ups the children have done in class. So far, Giana has done 148 sit-ups. Her fiend Baillie has done 100 sit-ups. How many sit-ups have both girls done in all? How many sit-ups will each girl have if she does 10 more in the next class?

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 (5 flats, 10 rods, and 20 units per pair)
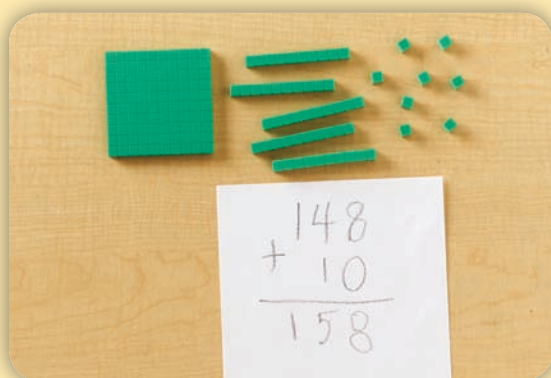- paper (1 sheet per pair)
- pencils (1 per pair)
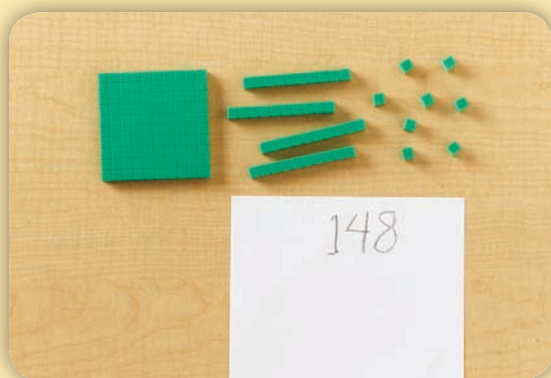
1. Say: *Let's use blocks to show the number of sit-ups Giana has done.* **Ask:** *How many hundreds do we need? How many tens do we need? How many ones do we need?*
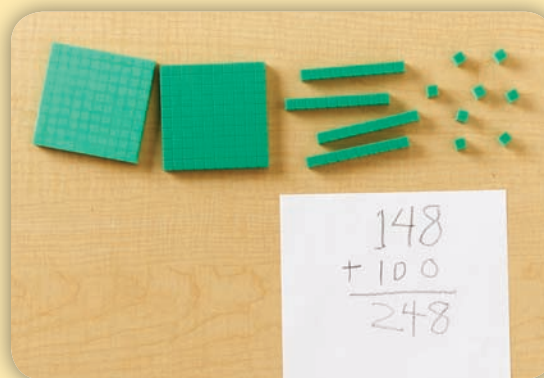
2. Say: *Now let's show how many sit-ups Baillie has done.* Have children model 100. **Say:** *Put the blocks together to add the numbers.* Write *148 + 100*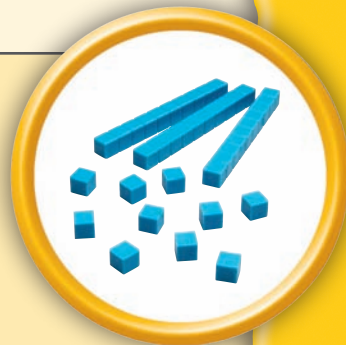 in vertical format on the board. **Ask:** *When you combined the blocks, did you change the ones? Did you change the tens? Did you change the hundreds?* **Say:** *Write the sum on your paper.*

⚠ Look Out!

Watch for children who want to regroup every time they add 100. Explain that they only need to regroup if they have 10 or more rods or flats. Any other time, they just increase the tens or hundreds place without regrouping.
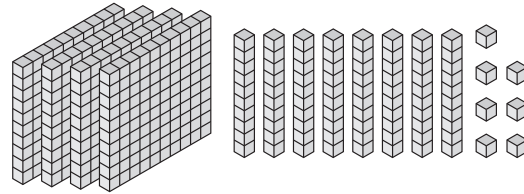

3. Say: *Let's find how many sit-ups each girl will have if she does 10 more in the next class.* **Ask:** *What do we need to add to each group of blocks? Does adding a ten change the ones? Does adding a ten change the hundreds?*

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

(Check students' work.)

1. $453 +$ __10__
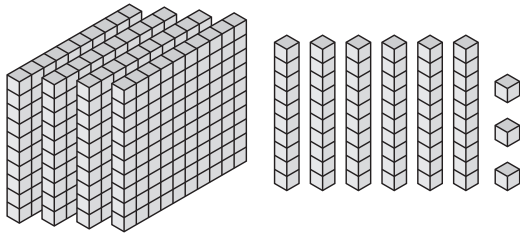
2. $387 +$ __100__

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

3. $264 +$ __100__ $= 364$

4. $528 +$ __100__ $= 628$

Look at each number. Add 10. Then add 100. Write both sums.

5.
$$489 + 10 = 499$$
$$489 + 100 = 589$$

6.
$$837 + 10 = 847$$
$$837 + 100 = 937$$

7.
$$648 + 10 = 658$$
$$648 + 100 = 748$$

8.
$$129 + 10 = 139$$
$$129 + 100 = 229$$

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Challenge!   When we add 10 to a number, we usually only need to increase the tens by one. Is there a time when adding 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 add 10 to 90, then I have to add 1 to the hundreds and make the tens a zero.

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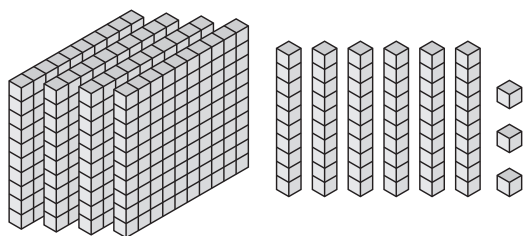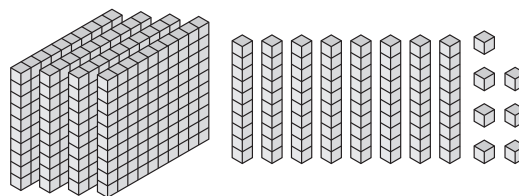
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Name _____

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

1. 453 + _____

2. 387 + _____

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

3. 264 + _____ = 364

4. 528 + _____ = 628

Look at each number. Add 10. Then add 100. Write both sums.

5. 489   489

   + ___   + ___
   ‾‾‾   ‾‾‾

6. 837   837

   + ___   + ___
   ‾‾‾   ‾‾‾

7. 648   648

   + ___   + ___
   ‾‾‾   ‾‾‾

8. 129   129

   + ___   + ___
   ‾‾‾   ‾‾‾

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

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