

LESSON 1

Objective

Explore place-value concepts for tens and ones.

Common Core State Standards

- **1.NBT.2a** 10 can be thought of as a bundle of ten ones — called a “ten.”
- **1.NBT.2b** The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones.
- **1.NBT.2c** The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones).

Number and Operations in Base Ten

Exploring Place Value

Prior to learning how to add and subtract two-digit numbers, children need to establish a solid understanding of place value, a skill that lends itself to grasping the concept of regrouping. In preparation for these operations, children need to understand the position of the number 10 within the base ten system. They need to see that the word *ten* represents one entity as well as 10 separate units.

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

Talk About It

Discuss the Try It! activity.

- **Say:** Look at your Place-Value Chart (BLM 3). **Ask:** What number is in the ones place? In the tens place?
- **Ask:** Could you have put all 17 Base Ten Block units in the ones place on your chart? Why or why not? Emphasize that the ones place can show the numbers 0–9, but that higher numbers must be regrouped and moved to the tens place.
- Discuss larger numbers. To start, have children model the tens numbers 20–90. Then introduce ones.

Solve It

With children, reread the problem. Have children draw a picture of Matt’s basket of tennis balls and write the addition sentence that corresponds to the story. Then have children show the sum on a place-value chart.

More Ideas

For other ways to teach about place value—

- Use Cuisenaire® Rods to model place value. Assign a value of 1 to the white rods and a value of 10 to the orange rods. Have volunteers use combinations of rods to build numbers. Exchange as many rods as necessary to make an orange 10, and put it in the tens place on a place-value chart (BLM 3). Leave the other rods in the ones place.
- Have children make sets of 10 Snap Cubes® and put the sets into small bags. Announce a two-digit number and have children show the number on place-value charts using the sets of 10 cubes and single cubes.

Formative Assessment

Have children try the following problem.

There were 12 children in the library. Then 4 more children came in. Draw a circle around the place-value chart that shows how many children in all.

A.

Tens	Ones
■	■ ■ ■ ■

B.

Tens	Ones
■ ■ ■ ■	■

C.

Tens	Ones
■	■ ■

Try It!

20 minutes | Pairs

Here is a problem about working with place value.

Matt has 11 tennis balls in a big green basket. His friend Paul didn't know Matt had so many tennis balls, and he went to the store and bought 6 tennis balls so he could play tennis with Matt. When he added his 6 tennis balls to Matt's basket, how many tennis balls did they have in all? In how many different ways can you show this number?

Introduce the problem. Then have children do the activity to solve the problem.

Distribute Base Ten Blocks and the Place-Value Chart (BLM 3) to pairs. Display a place-value chart for modeling. Explain that a place-value chart helps show the number of tens and ones that make up a number.

Materials

- Base Ten Blocks (20 units and 9 rods per pair)
- Place-Value Chart (BLM 3; 1 per pair)



1. Hold up a unit. **Say:** *This block stands for one unit. Make a group of units to show 11. Make another group to show 6.* Explain that counting all the units is just one way to show how many you have in all.



2. Explain that children can show how many in another way. **Say:** *Look at this rod. It has 10 sections, so it is the same as 10 units together.* Have children exchange 10 units for one rod by placing the 10-unit rod in the tens column on their charts. Point out that the "1" in the number 10 is in the tens place. **Ask:** *How many tens are in 17?*



3. Ask: *How many more units are there?*
Say: *Count units in the ones column of your chart.* **Ask:** *How many ones are in 17?*

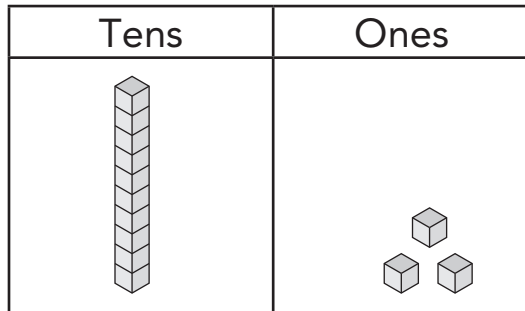
Look Out!

Some children might have difficulty visualizing that 10 ones (Base Ten units) together make one 10 (Base Ten rod). Have children put a set of Base Ten units into a bag. If they put this one set in the tens column of a place-value chart, then there will be zero in the ones column. Have them write the 1 under the tens column and 0 under the ones.

**Use Base Ten Blocks. Build each number.
Write the number.**

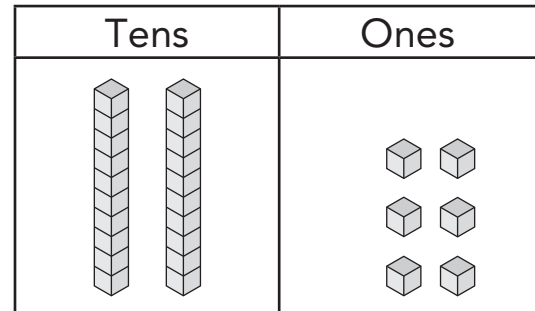
(Check students' work.)

1.



1 tens 3 ones
13

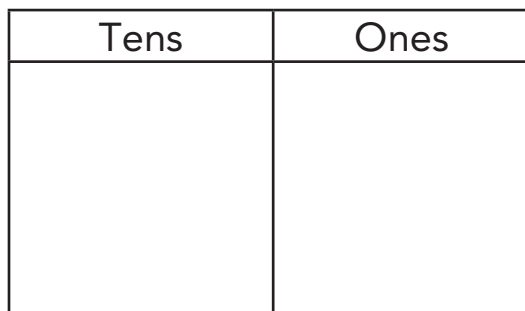
2.



2 tens 6 ones
26

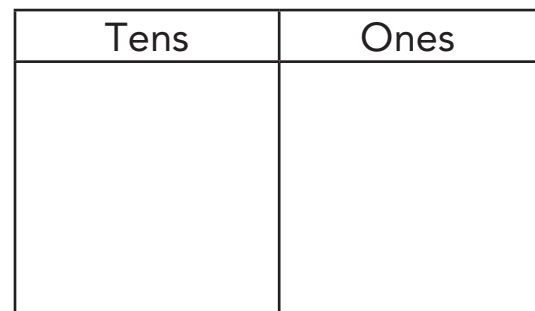
**Use Base Ten Blocks. Build each number.
Draw the model. Write the number.**

3. 17



1 tens 7 ones
17

4. 32



3 tens 2 ones
32

Write the number described.

5. 2 tens 5 ones 256. 4 tens 2 ones 42

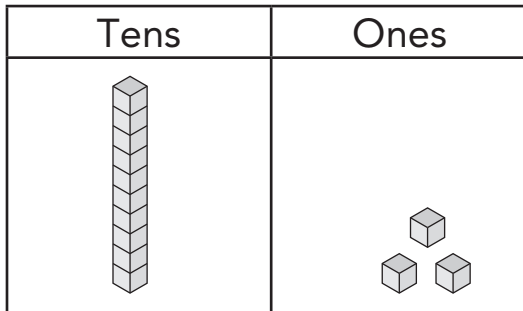
Answer Key

Challenge! How would you build the number 80? Why is only one type of Base Ten Block used?

Challenge: (Sample) Use 8 tens and 0 ones. The digit in the ones place is 0, so there are no ones to model.

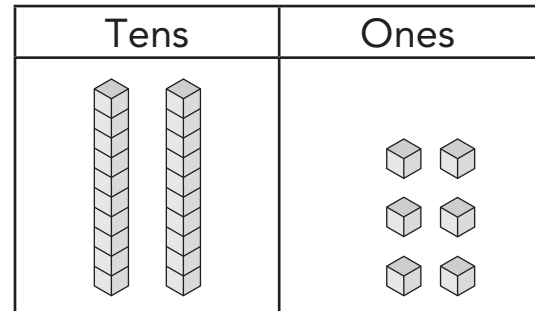
Use Base Ten Blocks. Build each number.
Write the number.

1.



_____ tens _____ ones

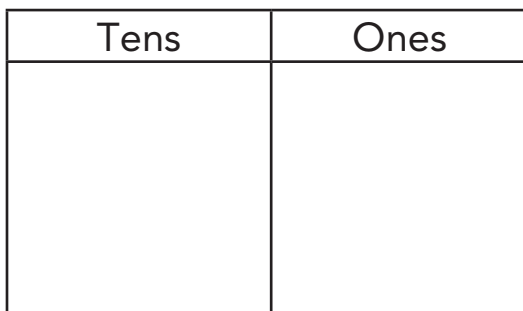
2.



_____ tens _____ ones

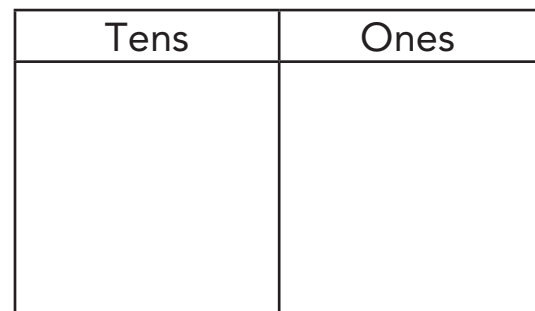
Use Base Ten Blocks. Build each number.
Draw the model. Write the number.

3. 17



_____ tens _____ ones

4. 32



_____ tens _____ ones

Write the number described.

5. 2 tens 5 ones _____

6. 4 tens 2 ones _____

Name _____

Challenge! How would you build the number 80? Why is only one type of Base Ten Block used?

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Name _____

Ones	
Tens	