

# LESSON 5

## Objective

Use models to add with regrouping.

## Common Core State Standards

- **1.NBT.4** Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten.

## Number and Operations in Base Ten

# Adding with Regrouping

Using concrete objects to introduce and practice addition with regrouping provides children with a solid foundation upon which to build higher-level math skills later on. Providing ample opportunity to practice allows children to gain a better understanding of the methodical structure of the addition process. Practicing regrouping also aids in improving efficiency and accuracy in computation with pencil and paper. It also helps develop skills such as estimating and using mental math.

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

## Talk About It

Discuss the Try It! activity.

- **Say:** Remember that when we did addition without regrouping we added the ones column and the tens column. **Ask:** What do we do differently when we solve addition problems where we need to regroup? What do we do that is the same?
- **Ask:** What is the “new rule” we need to remember when we solve some addition problems? Lead children to recall that they should never have more than 9 single units in the ones column.

## Solve It

With children, reread the problem. Then have children draw a place-value chart that shows the 13 points together in the ones column. Have them write a sentence or two telling what they need to do with 10 of the points.

## More Ideas

For other ways to teach about adding with regrouping—

- Have children use Color Tiles to show regrouping. Give children a random group of two colors of tiles and instruct them to sort the two colors into two groups. Have children separate each color group into tens and ones. Children should make stacks of 10 tiles. Have them count the stacks and single tiles and tell how many they have of each color. Then have children add the two groups together to find how many tiles they have in total.
- Build one tower of 16 Snap Cubes® and one tower of 8 cubes and have children build the sum. Make sure that children separate out towers of 10 cubes so they are manually regrouping.

## Formative Assessment

Have children try the following problem.

*Kathy wants to buy socks that cost \$7 and a red shirt that costs \$24. How much money does she need? Circle the correct answer.*

- A. \$11      B. \$21      C. \$31

## Try It! 20 minutes | Pairs

Here is a problem about adding with regrouping.

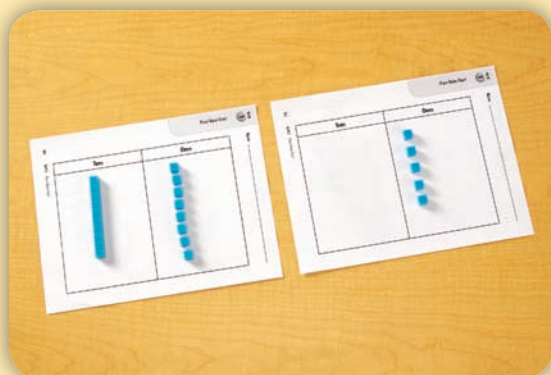
*Erika plays basketball for the Tigers, her first-grade team. She scored 18 points in the first half of a game. She scored 5 points in the second half. How many points did Erika score in the game?*

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

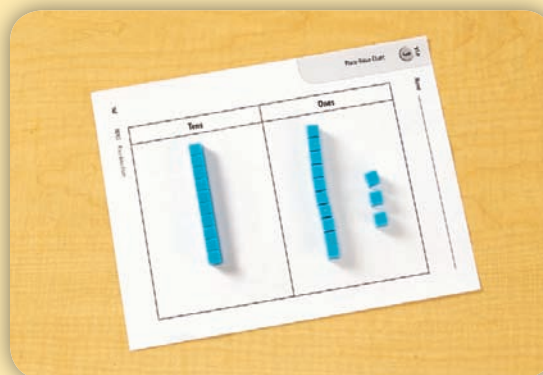
Give each pair of children Base Ten Blocks and the Place-Value Chart (BLM 3). Model the rule that when the ones column has 10 units, children should exchange the units for a rod and then move it to the tens column. Write the addition problem  $18 + 5$  in column form on the board or overhead.

### Materials

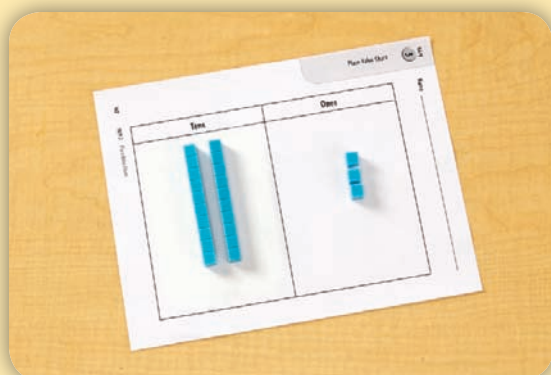
- Base Ten Blocks (4 rods and 33 units per pair)
- Place-Value Chart (BLM 3; 2 per pair)



**1.** Have one child in each pair use Base Ten rods and units to show 18 on a place-value chart. Have the other child show 5.



**2. Say:** Let's see what happens when we add these numbers. Move the ones from one chart to the other. **Ask:** How many ones do we now have in all?



**3. Say:** Now we can exchange ten units for a tens rod. Put the rod in the tens column.  
**Ask:** How many tens and ones do we have in all? (2 tens and 3 ones) **Say:** 18 blocks added to 5 blocks is 23.

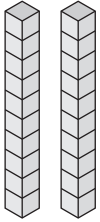
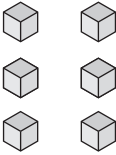
### Look Out!

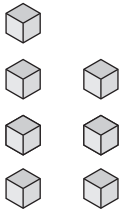
Some children might understand the algorithm (using paper and pencil) but can't show the regrouping using manipulatives. This could indicate a child's lack of number sense and reliance on following the algorithm. Have these children write the number sentence first and then model the problem with blocks.

**Use Base Ten Blocks. Build each number. Add and regroup. Write the numbers and the sum.**

(Check students' work.)

1.

Tens	Ones
	

Tens	Ones
	

Can you exchange 10 ones for 1 ten? yes

$$\underline{\quad 26 \quad} + \underline{\quad 7 \quad} = \underline{\quad 33 \quad}$$

**Use Base Ten Blocks. Build the numbers. Draw the models. Add.**

2.  $36 + 5 = \underline{\quad 41 \quad}$

Tens	Ones
(Check students' work.)	

Tens	Ones
(Check students' work.)	

**Add.**

3. 
$$\begin{array}{r} 17 \\ + 5 \\ \hline \end{array}$$
  
22

4. 
$$\begin{array}{r} 54 \\ + 7 \\ \hline \end{array}$$
  
61

5. 
$$\begin{array}{r} 17 \\ + 9 \\ \hline \end{array}$$
  
26



## Answer Key

**Challenge!** How do you know when you have to exchange 10 ones for 1 ten?

Challenge: (Sample) When you have 10 or more unit blocks.

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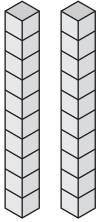
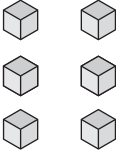
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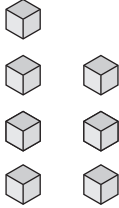
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**Use Base Ten Blocks. Build each number. Add and regroup. Write the numbers and the sum.**

1.

Tens	Ones
	

Tens	Ones
	

Can you exchange 10 ones for 1 ten? \_\_\_\_\_

$$\underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$

**Use Base Ten Blocks. Build the numbers. Draw the models. Add.**

2.  $36 + 5 = \underline{\hspace{2cm}}$

Tens	Ones

Tens	Ones

**Add.**

3. 
$$\begin{array}{r} 17 \\ + 5 \\ \hline \end{array}$$

4. 
$$\begin{array}{r} 54 \\ + 7 \\ \hline \end{array}$$

5. 
$$\begin{array}{r} 17 \\ + 9 \\ \hline \end{array}$$

Name \_\_\_\_\_

**Challenge!** How do you know when you have to exchange 10 ones for 1 ten?

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Name \_\_\_\_\_

Ones	
Tens	