

Objective

Use models to add two-digit numbers without 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 Without Regrouping

Using concrete objects to introduce and practice addition without regrouping provides children with a solid foundation upon which to build higher-level mathematical skills later on. Providing ample opportunity to practice allows children to gain a better understanding of the addition process. As they learn to recognize small groups within larger groups, children start to develop strategies they will use for estimating.

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

Talk About It

Discuss the Try It! activity.

- Ask:** Which column do we add first when we add two-digit numbers?
- Ask:** What are two important steps we need to remember when we add two-digit numbers?
- Say:** We just added two numbers with two digits each. **Ask:** How is adding two-digit numbers different from adding single-digit numbers? How is it the same?

Solve It

With children, reread the problem. Have children draw a “before and after” picture of Scott’s marbles on a Place-Value Chart (BLM 3). Beneath it, have them write a sentence or two telling what happens when they combine the marbles and what it means. **Say:** Remember that Scott needed 32 marbles. **Ask:** Does he have enough?

More Ideas

For other ways to teach about adding two-digit numbers without regrouping—

- Write several two-digit addition problems on index cards and allow children to select cards at random. Have children use Base Ten Blocks and the Place-Value Chart (BLM 3) to solve the problems.
- Distribute 10 Two-Color Counters to each child. Have children use the counters with the red side up to show tens and the yellow side up to show ones. Have children build two-digit numbers and then use a column chart to add them. Then have them use Snap Cubes® to build the sum.

Formative Assessment

Have children try the following problem.

Last week, Mr. Smith bought 20 cookies for the children in his club. This week, he bought 24 cookies. On the line below the problem, write how many cookies Mr. Smith bought in all.

$$\begin{array}{r}
 24 \\
 + 20 \\
 \hline
 \end{array}$$

_____ cookies in all

Try It! 20 minutes | Pairs

Here is a problem about adding without regrouping.

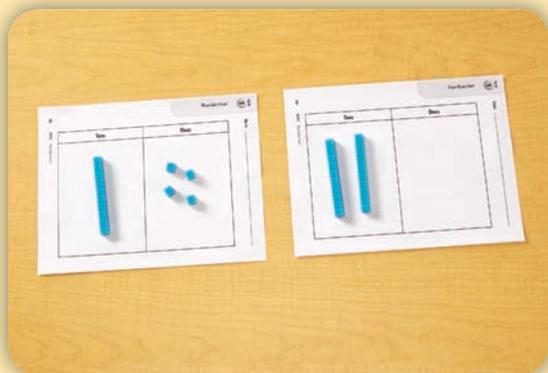
Scott needs 32 marbles to play a game. He poured his yellow marbles and his orange marbles on the floor and counted them. He counted 14 yellow marbles and 20 orange marbles. How many marbles does Scott have in all? Does he have enough to play the game?

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

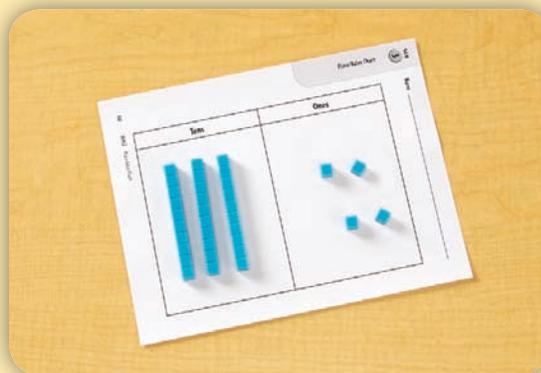
Give each pair the Base Ten Blocks, Place-Value Chart (BLM 3), paper, and pencils. On the board, display a place-value chart for modeling.

Materials

- Base Ten Blocks (3 rods and 10 units per pair)
- Place-Value Chart (BLM 3; 2 per pair)
- paper (1 sheet per child)
- pencils (1 per child)



1. Have one child in each pair place Base Ten rods and units on one place-value chart to show 14. **Ask:** How many tens does this number have? How many ones? Have the other child use the other place-value chart to show 20. **Ask:** How many tens does this number have? How many ones?



2. Have children move the blocks from the 20 chart to the 14 chart. Make sure children have the tens and ones in the correct columns. **Ask:** How many ones are in the "14 + 20" chart? How many tens? Guide children to realize that they just added the numbers together. **Say:** 20 blocks added to 14 blocks gives me 34 blocks in all. Have the children count the blocks to check their answer.



3. On the board, write the activity as a number chart in columns. Have children copy it onto their recording paper. Tell them to be sure to line up the numbers so that the tens and ones columns match.

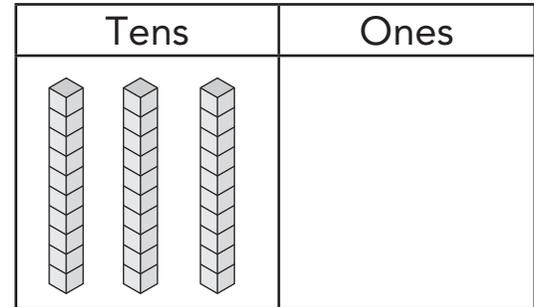
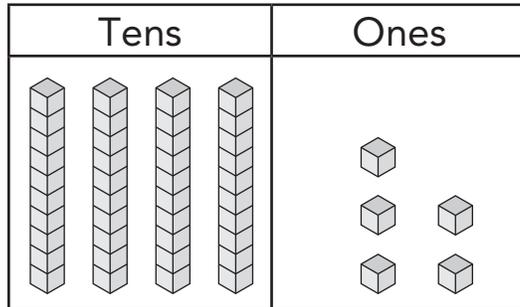
Look Out!

Some children may have trouble grasping the importance of accuracy in lining up the numbers in column addition problems. Remember to emphasize that they should add the ones column first!

Use Base Ten Blocks. Build each number.

Write the numbers and the sum. (Check students' work.)

1.

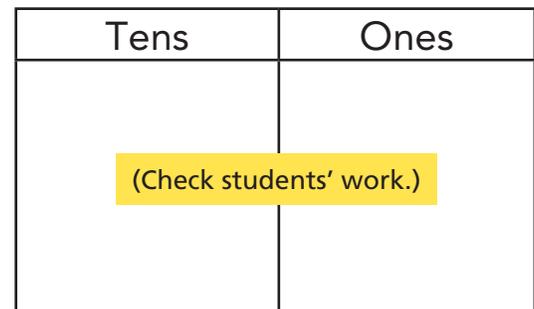
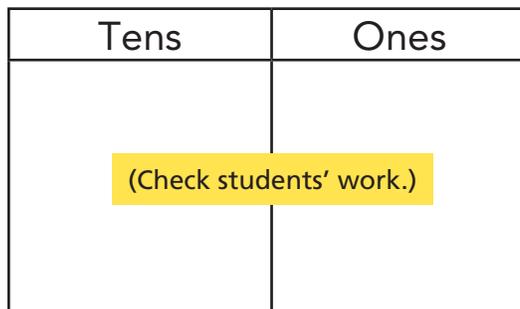


$$\underline{\quad 45 \quad} + \underline{\quad 30 \quad} = \underline{\quad 75 \quad}$$

Use Base Ten Blocks. Build the numbers.

Draw the models. Add.

$$2. \quad 20 + 61 = \underline{\quad 81 \quad}$$



Add.

$$3. \quad \begin{array}{r} 34 \\ + 10 \\ \hline 44 \end{array}$$

$$4. \quad \begin{array}{r} 44 \\ + 30 \\ \hline 74 \end{array}$$

$$5. \quad \begin{array}{r} 16 \\ + 20 \\ \hline 36 \end{array}$$

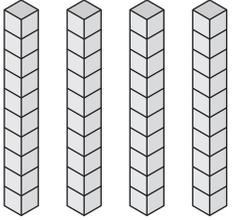
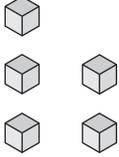
Answer Key

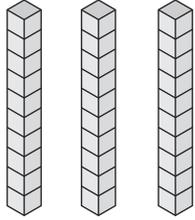
Challenge! What if you want to add 24 and 35? Both numbers have some ones. How would you add?

Challenge: (Sample) I would add the ones to get the ones digit and add the tens to get the tens digit.

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

1.

Tens	Ones
	

Tens	Ones
	

_____ + _____ = _____

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

2. $20 + 61 =$ _____

Tens	Ones

Tens	Ones

Add.

3.
$$\begin{array}{r} 34 \\ + 10 \\ \hline \end{array}$$

4.
$$\begin{array}{r} 44 \\ + 30 \\ \hline \end{array}$$

5.
$$\begin{array}{r} 16 \\ + 20 \\ \hline \end{array}$$

Name _____

Challenge! What if you want to add 24 and 35? Both numbers have some ones. How would you add?

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Name _____

Ones	
Tens	