

# LESSON 9

## Objective

Identify missing subtrahends by calculating the difference between the minuend and the difference.

## Common Core State Standards

- **1.OA.4** Understand subtraction as an unknown-addend problem. *For example, subtract  $10 - 8$  by finding the number that makes 10 when added to 8.*
- **1.OA.8** Determine the unknown whole number in an addition or subtraction equation relating three whole numbers. *For example, determine the unknown number that makes the equation true in each of the equations  $8 + ? = 11$ ,  $5 = \square - 3$ ,  $6 + 6 = \square$ .*

## Operations and Algebraic Thinking

# Finding Missing Subtrahends

In subtraction, the first number is the *minuend*. The number being subtracted from the minuend is the *subtrahend*. The answer to a subtraction problem is the difference. Subtraction problems have an unknown difference; however, it can have a missing subtrahend instead, as in the problem  $12 - b = 6$ . Because the subtrahend and difference are two parts of a whole (minuend), when a subtrahend is unknown, subtract the difference from the whole (minuend) to find the missing subtrahend.

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

## Talk About It

Discuss the Try It! activity.

- Have children look at their DecaDots® tiles used in the Try It! activity.
- **Ask:** Which tiles show the number of Tia's stuffed animals? Which tiles show the animals Tia can keep?
- **Say:** Count back to find the number of dots that show the difference between how many animals Tia has and how many she can keep.
- **Ask:** How many animals will Tia give away? How do you know?

## Solve It

With children, reread the problem. Ask the children to draw pictures of Tia's animals and mark what she needs to give away. Then, have them write a sentence explaining how many animals Tia needs to give away.

## More Ideas

For other ways to teach about missing subtrahends—

- Have children use Snap Cubes® to represent the minuend, then take off the amount needed to result in a given difference and count what was taken off.
- Give children ten frames (BLM 2) and counters. Have them fill in with counters the minuend (whole) on one ten frame. Then have them fill in another ten frame with the known difference. Compare the two to find the missing subtrahend.

## Formative Assessment

Have children try the following problem.

*Draw pictures to solve this problem. Martin won 12 tickets to a baseball game. He wants to save 4 tickets for his family and give the rest away to friends. How many tickets can Martin give away?*

## Try It!

30 minutes | Pairs

Here is a problem using missing subtrahends.

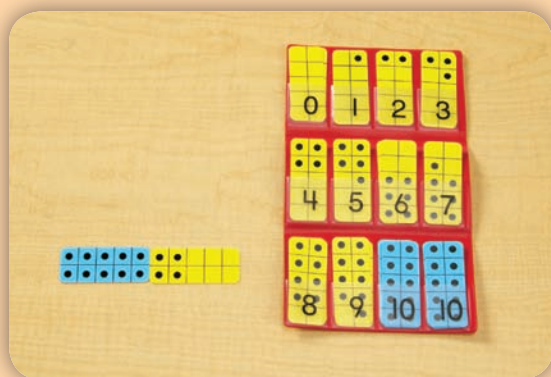
*Tia is giving away old toys. She has 14 stuffed animals. Her mother said she could only keep 8. How many stuffed animals will Tia give away?*

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

**Say:** *Let's show Tia how many toys she must give away.*

### Materials

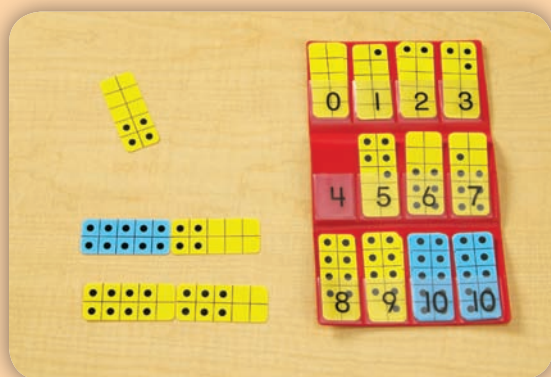
- DecaDots® wallet (1 per pair)



**1.** To begin, have children choose tiles to show the number of Tia's stuffed animals. Then show how many animals she can keep. **Say:** *You will have to combine two tiles to show numbers greater than 10.*



**2.** Have children place the tiles next to each other. Compare the number of dots that must be taken away from the tiles representing the number of Tia's stuffed animals to make it look like the tile that represents the number of stuffed animals Tia can keep.



**3. Ask:** *How many animals does Tia have to give away so that she has 8 animals? What tile did you place to make the two sets look the same?*

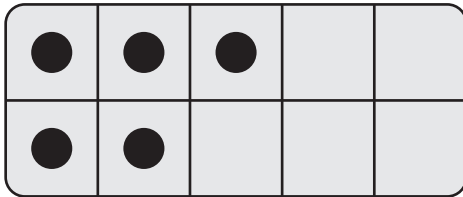
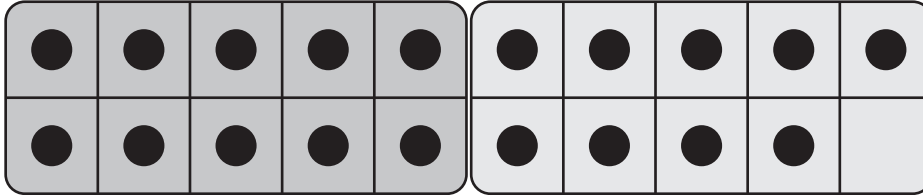
### Look Out!

Watch for children who add the minuend and difference. Remind children that the total number of animals Tia has is already known. Ask children if it would make sense for Tia to give away 22 animals.

**Use DecaDots. Build the sentence.  
Find the missing number.**

(Check students' work.)

1.



$$19 - \underline{14} = 5$$

**Use DecaDots. Draw the model.  
Find the missing number.**

$$2. \quad 20 - \underline{12} = 8$$

**Find each missing number.**

$$3. \quad 12 - \underline{3} = 9$$

$$4. \quad 11 - \underline{7} = 4$$

$$5. \quad 15 - \underline{4} = 11$$

$$6. \quad 19 - \underline{13} = 6$$



## Answer Key

**Challenge!** How can you use addition to check if you found the correct missing number? Draw a picture to help.

Challenge: (Sample) Add the number found to the number that is by itself on one side of the equal sign. The sum should match the other number in the problem.

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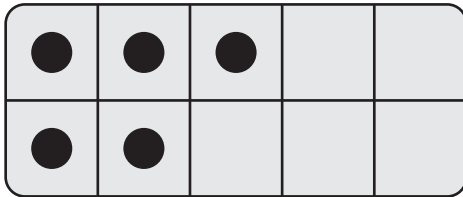
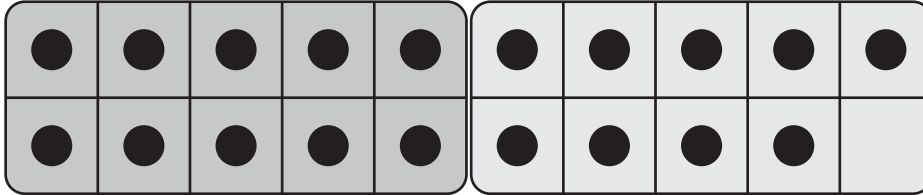
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Name \_\_\_\_\_

**Challenge!** How can you use addition to check if you found the correct missing number? Draw a picture to help.

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