

Objective

Write and solve number sentences from problem situations that express relationships involving addition and subtraction.

Common Core State Standards

- **2.OA.1** Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.
- **2.NBT.7** Add and subtract within 1000, 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. Understand that in adding or subtracting three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds.

Operations and Algebraic Thinking

Writing Number Sentences

A number sentence is an expression that contains numbers; symbols of operations; and a greater than, less than, or equal sign. Number sentences are used as a way to record the computation process of solving a mathematical problem. In order to write a number sentence from a problem situation, the numbers involved, as well as the relationship between them, must be identified.

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

Talk About It

Discuss the Try It! activity.

- Have children look at the Base Ten Blocks they used in the activity.
- **Ask:** *How did you show the number of cookies Danielle baked? What blocks did you use? Why? How did you show the cookies she sold? How can you take away the cookies Danielle sold?*
- **Ask:** *What number sentence did you write to show your solution to the problem? How do you know that is correct? How can you take away the cookies Danielle sold?*

Solve It

With children, reread the problem. Ask children to draw pictures of Danielle's cookies or symbols to represent them. Have children mark the cookies sold in some way. Then, have them label the picture with the number sentence and write a sentence explaining how they know the number sentence is correct.

More Ideas

For other ways to teach about writing number sentences—

- Have children use Snap Cubes® to act out a problem situation and write the corresponding number sentence as the situation is acted out.
- Have children use a Hundred Chart (BLM 2) to represent a problem situation and label the chart with the corresponding number sentence.
- Have children use Ten Frames (BLM 3) to represent the problem. Have them complete one ten frame and partially fill another to represent the cookies. Ask children how they might use the make-a-ten strategy to subtract.

Formative Assessment

Have children try the following problem.

Draw pictures to help solve this problem, and write a number sentence to show your work. Matt has cucumbers in his garden. Yesterday he picked 7, and today he picked 8. How many cucumbers did Matt pick altogether?

Try It! 30 minutes | Independent

Here is a problem about writing number sentences.

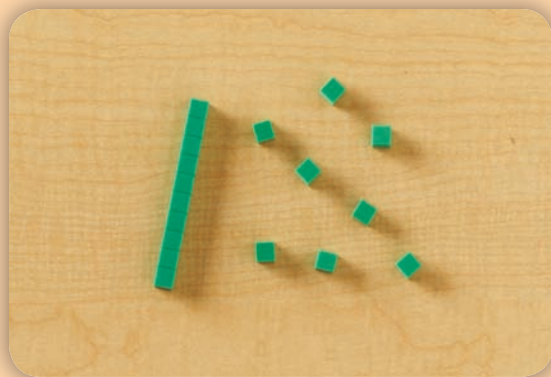
*Danielle baked 18 chocolate chip cookies for a bake sale. She sold 9 cookies.
How many cookies did she have left?*

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

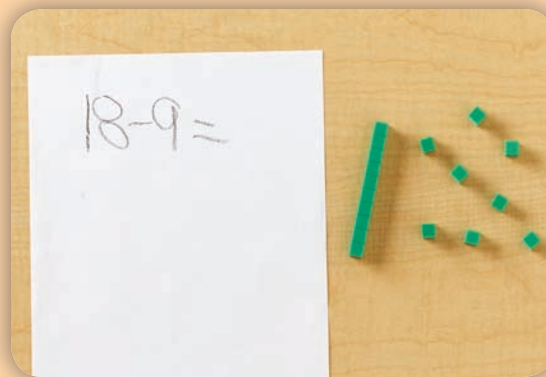
Distribute Base Ten Blocks, paper, and pencils to children.

Materials

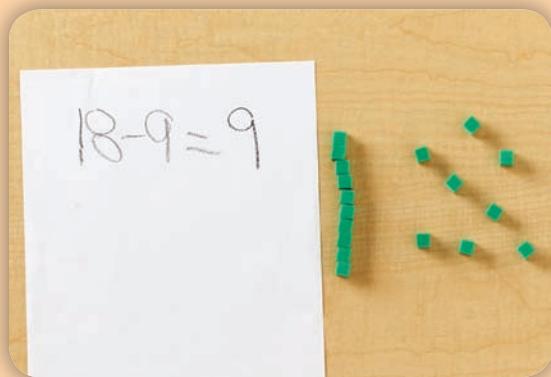
- Base Ten Blocks (rods and units)
- paper (1 sheet per child)
- pencils (1 per child)



1. To begin, have children choose Base Ten Blocks to show the number of cookies Danielle baked. Show how many cookies were sold.



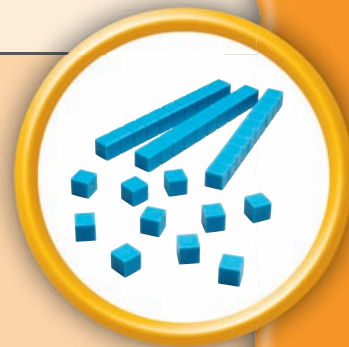
2. Have children write a number sentence on a sheet of paper that can be used to find the number of cookies that were left.



3. Ask: *Do you have to combine two numbers or take a number away from another to find the answer? How can you take away 9 cookies? Do you have to exchange any of the blocks? How many cookies were left?*

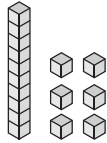
! Look Out!

Watch for children who confuse the operations, either in calculation or in representation with a symbol. Remind children to first decide if they need to combine or take away to find the answer. Prompt them to write the corresponding sequence of numbers and symbols. You also can have children make 9 jumps backward on a naked number line to show the taking away.

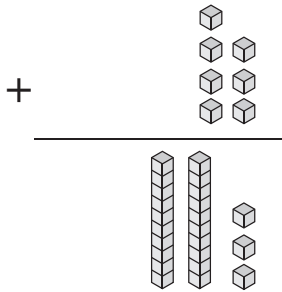


Use Base Ten Blocks. Write a number sentence for the model. (Check students' work.)

1.



Paul had 16 badges.



He got 7 more badges.

Now he has 23 badges.

Number sentence: _____ $16 + 7 = 23$

Use Base Ten Blocks. Model the problem. Draw the model. Write a number sentence to solve.

2. Sally had 16 blocks. She gave away 9 of them. How many does she have now?

Number sentence: _____ $16 - 9 = 7$

Write a number sentence to solve.

3. I had 7 coins. I got 8 more coins. How many coins do I have now?

Number sentence: _____ $7 + 8 = 15$



Answer Key

Challenge! What symbols do you use to write a number sentence for addition?
What symbols do you use to write a number sentence for subtraction?

Challenge: + and =; – and =

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