The Short Story

Goals

- Write an equation to represent a relationship described in prose.
- Use a letter to stand for a variable (an unknown quantity).
- Solve an equation for the value of its variable.
- Collect constants by subtracting same values from both sides of an equation.
- Check solutions by replacing variables with their values.

Questions to Ask

1. What did Ms. Terry buy? (muffins)
2. How many boxes of muffins did she buy? (2)
3. How many other muffins did she get? (3)
4. How many muffins did she have altogether? (13)
5. What do you need to figure out? (the number of muffins in each box)
6. What letter will stand for the number of muffins in each box? (g)
7. Using g, how can you show that Ms. Terry bought 2 boxes of muffins? ($2g$ or $g + g$)

Solutions

1. $2g + 3 = 13$
2. $2g + 3 = 13$
   $\quad -3 \quad -3$
   $2g \quad = 10$
   $g \quad = 10 \div 2$
   $g \quad = 5$
3. 5
4. a. $2g + 3 = 13$
   b. $(2 \times 5) + 3 = 13$
   c. $10 + 3 = 13$
   $13 = 13$

f.y.i.

"Some of my students thought that these problems were like those that they saw in their math textbooks as 'multi-step' arithmetic problems. I capitalized on that association by having my students write equations for the textbook problems and solve them in the same way that they did the ones in this section. Because of the experience with these short stories, my students were more eager to do the textbook problems and were more successful solving them!"

"To help my students see that the choice of letter to use to stand for a variable does not affect the solution, and to help personalize the problem, I had each student choose a different letter to stand for the number of muffins in a box, and to solve the problem using that letter. After all students had solved the problem, we compared solution steps."

The Short Story 1

Ms. Terry's Story

I bought 2 boxes of muffins.

My neighbor gave me 3 more muffins.

Then I had 13 muffins.

How many muffins were in each box?

If g stands for the number of muffins in one box, then $g + g$ or $2g$ stands for the number of muffins in 2 boxes.

Let g stand for the number of muffins in a box.

1. Write an equation to tell Ms. Terry's story.

_____

2. Solve for g.

3. How many muffins are in each box? _____

4. Now check your answer.
   - **a.** Write the equation here. _____
   - **b.** Replace g with its value. _____
   - **c.** Show that the left side equals the right side.