**3.OA.8** Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.[3]

[3]This standard is limited to problems posed with whole numbers and having whole-number answers; students should know how to perform operations in the conventional order when there are no parentheses to specify a particular order.

## Mechanics

*Teacher Notes: This standard requires that students first identify the information needed to solve each step in two-step word problems. Students will identify key words in the text to determine whether to use addition, subtraction, multiplication, or division to solve each step.*

*Start with the reading of a two-step word problem.*

**Example**: Seven volunteers each baked 9 cupcakes for the 3rd graders' field day picnic. After the picnic, only 11 cupcakes remained. How many cupcakes did the 3rd graders eat at the field day picnic?

*Ask students to identify what they need to know to answer the question.*

How many cupcakes did the 3rd graders eat?

*Students must identify the numbers and determine which operation they will use to solve the first part of the problem. How many cupcakes were there in the beginning?*

(7) volunteers each baked (9) cupcakes for the 3rd graders' field day picnic.

(7 volunteers times 9 cupcakes) $7 \times 9 = n$ $n = 63$

*Students must then identify the number and determine which operation they will use to solve the second part of the two-step word problem.*

How many cupcakes were left?

After the picnic, only (11) cupcakes remained.

There were 63 cupcakes to begin with. $63 - 11 = d$

*Students should be able to write an equation for each step of the word problem using a letter to stand for the unknown quantity and solve both equations to answer the question.*

$7 \times 9 = n$ $n = 63$ $63 - 11 = d$ $d = 52$, so the 3rd graders ate 52 cupcakes

*Is the answer reasonable?*

Yes, because there were about 60 cupcakes to begin with and there were about 10 left over. The 3rd graders ate about 50 cupcakes.

**Example**: On vacation, Carmen planned to climb two monuments. One had 298 stairs, and the other had 391 stairs. Carmen climbed all the way to the top of one monument and part way to the top of the other before it started to rain. She did not climb the last 53 stairs. How many stairs did Carmen climb?

1. What will answer the question? the number of stairs Carmen climbed
2. Find the total number of stairs Carmen planned to climb by writing an equation. Use a letter for the unknown quantity. Solve the equation.

   $298 + 391 = r$ $r = 689$
3. Use the information from the first equation to write the second equation. Solve the equation to find the answer.

   $689 - 53 = s$ $s = 636$

Answer: Carmen climbed 636 stairs.

## Concept Mastery

- ✓ Students will be able to understand and articulate what is being asked for in a two-step word problem, i.e. the information that will answer the question.
- ✓ Students will be able to identify factors, addends, etc. and determine which operation to use in each step.
- ✓ Students will be able to write an equation with a letter representing the unknown quantity for each step.
- ✓ Students will be able to solve the first equation, and then use the result to solve the second equation.

## Web Resources* Always preview websites and videos prior to use with students. For more information, see the "*Internet Content Tips & Cautions*" document.

Broken link? Click Here to let us know!

### Class Demo & Activities

Problem Solving Song

Addition and Subtraction Word Problems

### Student Practice

Word Problems with Katie — Addition & Subtraction

Word Problems with Katie — Multiplication & Division

Grand Slam — Addition and Subtraction

Grand Slam — Multiplication & Division

Multiplication and Division Word Problems 2

Self-Checking Math Word Problems

Thinking Blocks

Problems and Solutions

Restating a Problem

Solving a Problem with Pictures & Diagrams

Representations

Solving Problems (Hidden Questions)

Division Word Problems Worksheet Generator - 1 Digit Divisor

Division Word Problems Worksheet Generator - Multiple Digit Divisor

Mixed Operation Word Problems Worksheet Generator

Multiplication & Division Word Problems Worksheet Generator

Mixed Multiplication & Division Word Problems for 3rd Grade

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## References

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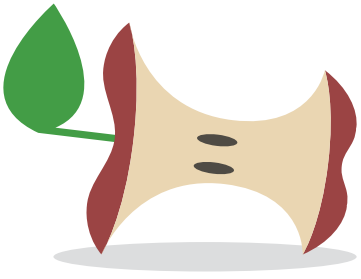

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