

Students use the four operations to identify and explain patterns in arithmetic

Standard 3.OA.8 Solve two-step word problems.

- A. Solve two-step word problems using the four operations. Know how to perform operations in the conventional order when there are no parentheses to specify a particular order (Order of Operations). (Limit to problems posed with whole numbers and having whole number answers.)
- B. Represent two-step problems using equations with a letter standing for the unknown quantity. Create accurate equations to match word problems.
- C. Assess the reasonableness of answers using mental computation and estimation strategies, including rounding.

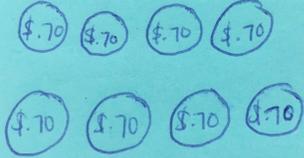
Key Elements: Multi-step word problems can be solved by decoding the order in which the function(s) are being used. Use letters to represent unknown quantities, especially when treating division problems as a multiplication problem with an unknown factor. Use rounding to check accuracy and see if the answer is reasonable.

Use word problem strategies-

<p>The Big 5</p> <ol style="list-style-type: none">1. Read the problem2. Underline important information3. Draw a picture4. Write the equation to match5. Solve and label	<p>CUBES</p> <ul style="list-style-type: none">C- Circle the numbersU- Underline the questionB- Box the key wordsE- Eliminate what you don't needS- Solve and check
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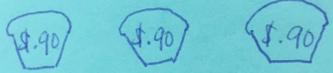
At the school bake sale, Mrs. Smith's class sold 8 cookies for \$.70 each and 3 cupcakes for \$.90 each. How much money, in cents, did Mrs. Smith's class earn?

Step 1: Multiplication
8 cookies x .70 cents



$8 \times 70 = \$5.60$ or
560 cents

Step 2: Multiply



3 cupcakes x \$.90 cents
 $3 \times 90 = \$2.70$ or
270 cents

Step 3: Add

$270 + 560 = 830$ cents
 $(3 \times 90) + (8 \times 70) = 830$ cents
or
\$8.30

It is essential that students label their numbers and models when solving word problems. Labels can eliminate some confusion because students can use logic to check if their answer is reasonable. For example, multiplying 8 cookies x 3 cupcakes will not give you the amount earned at the bake sale.

Another way to check for reasonableness is to use benchmark numbers. Students can see which benchmark number (10, 20, 30, 40, 50, etc.) is closest to the number they are using in the equation to simplify the equation. When they find the simplified answer, they can compare it to the actual answer to see if the answers are similar. It is a good way to see if the answer makes sense in the context.

*** Any unknown quantity can be replaced with a variable. ***

<https://www.ixl.com/math/grade-3/write-variable-equations-to-represent-word-problems>

<https://www.youtube.com/watch?v=OThwcoWtc6E>