



Taking the Mystery Out of Solving Word Problems

Summary

Whenever you use mathematical reasoning to accomplish a task, you're solving a word problem! You'll encounter word problems on the job and in every day life. The purpose of this activity is to learn a technique that will help you anytime you have to solve a word problem.

Workplace Readiness Skill

Mathematics: Uses mathematical reasoning to accomplish tasks.

Workplace Readiness Definition

- using mathematical reasoning and processes to accomplish job-specific tasks (e.g., using graphs and charts to estimate expenditures for a construction job, using decimals and percentages in retail applications)
- making calculations related to personal finance (e.g., wage rates, paycheck deductions, taxes)

Overview

First, a **word problem** is a sentence, or group of sentences, that tells a story, contains numbers, and asks you to find another number. Sounds simple enough, right? And even though the problems can get complex, the definition remains the same and the same techniques for solving them remains the same, too.

Here's an example of a very basic word problem:

Last week Patricia worked 40 hours and earned \$570. The week before, she earned \$495. What was the total amount of money that she earned?

And here's the solution:

Add the two amounts together to get the total amount that she earned:

$$\$570 + \$495 = \$1,065$$

So Patricia earned \$1,065.

No matter how simple or how complex a word problem may be, there are six steps that you can use to solve them. These steps help you to organize your thinking and figure out what to do. The steps are:

1. Read the problem carefully – more than once.
2. Determine what is being asked for – the **question**.
3. Determine the **information** necessary to answer the question.
4. Decide what type of **computation** to use.



5. **Solve** the problem and check your work.
6. **Reread** the question and make sure that your solution is **reasonable**.

Now, take another look at the example above and apply the steps:

Steps	Solution
1. Read the problem.	<i>Last week Paula worked 40 hours and earned \$570. The week before, she earned \$495. What was the total amount of money that she earned?</i>
2. The question is:	<i>What was the total amount of money that she earned?</i>
3. Information necessary to answer the question:	<i>\$570 and \$495</i> <i>Note: There is another number in the word problem – 40 hours. It isn't necessary to answer the question!</i>
4. Type of computation to answer the question:	<i>Addition</i>
5. Solve the problem:	$\$570 + \$495 = \$1,065$
6. Is the solution reasonable?	<i>Yes – check by rounding the numbers:</i> <i>If you round \$570 to \$600 and \$495 to \$500 and add those two numbers, you get \$1100. Based on the calculation, Paula definitely earned almost \$1100. So the answer is reasonable.</i>

Context Questions

- Do you find word problems easy to solve?
- Or, do you feel apprehensive when presented with a word problem?
- Do you ever just “freeze” when you see a word problem on a test?
- Does the 6-step technique described above make sense to you?
- Will applying the technique make it easier to think through the solution to a word problem?



Guidelines

Practicing the technique for solving word problems will help you to use it in any situation. The exercise, *Applying a Technique for Solving Word Problems*, provides that practice.

Exercises

Complete the *Applying a Technique for Solving Word Problems* exercise.

Evaluation

Check your work with the *Applying a Technique for Solving Word Problems – Key*.

Reflection after Completion

- Was the technique easy to apply?
- Did it help you to solve the word problems?
- What did you learn from this activity?

Notes:

Every time you need to solve a word problem think about the steps of the technique ... try using it to help you approach all word problems systematically.

Resources:

You can find lots of videos on solving word problems on YouTube ... they are all variations on the technique described in this activity. Here are links to two of them:

<http://www.bing.com/videos/search?q=Steps+to+Solving+Word+Problems+for+Kids&&view=detail&mid=0800FE600ED38AE928750800FE600ED38AE92875&rvsmid=F7E81DCD4CDF0E9E11DEF7E81DCD4CDF0E9E11DE&fsscr=0&FORM=VDQVAP>

<http://www.bing.com/videos/search?q=Steps+to+Solving+Word+Problems+for+Kids&&view=detail&mid=D396330D8ABEFA5231E4D396330D8ABEFA5231E4&rvsmid=F7E81DCD4CDF0E9E11DEF7E81DCD4CDF0E9E11DE&fsscr=0&FORM=VDFSRV>

Applying a Technique for Solving Word Problems

- A. Identify the “Question” by underlining the question in each of these word problems.**
- B. Identify the “Necessary Information” by circling the numbers that are necessary to solve each of these word problems.**
- C. Solve each of the word problems.**

Item #	Item
1.	Mitchell has \$27 in his checking account. He wrote checks for \$15 and \$20. How much money does he need to deposit in order to cover the checks?
2.	Brigitte loves to plant flowers. She has \$30 to spend on flower plant flats. Find the number of flats she can buy if they cost \$4.98 each.
3.	If 24 out of 96 city playgrounds need major repairs, what percent of the city playgrounds need major repairs?
4.	Find the cost of parking at a meter for 3 hours if it costs 25 cents an hour to park.
5.	Nigel travels to and from work with 3 friends every day. The round trip is 9 miles. If he works 5 days a week, how many miles does he commute in a week?
6.	Marisa bought a 64-ounce bottle of cola for \$1.79. How many 12-ounce glasses can she fill from the bottle?
7.	There are 7,000 people living in Charlestown. Of the 3,000 people who are registered to vote there, only 1,700 participated in the last election. How many registered voters did not vote?
8.	A serving of Craisin Flake cereal contains 0.26 gram of potassium. How many grams of potassium are in an 11-serving package of Craisin Flake?