

Conquering Word Problems

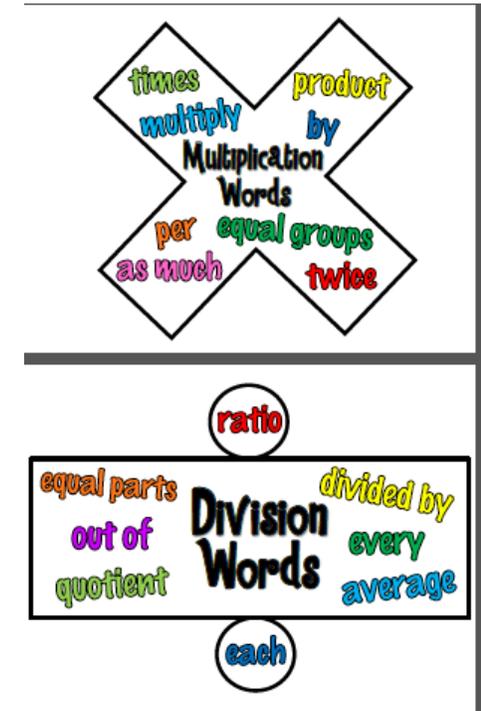
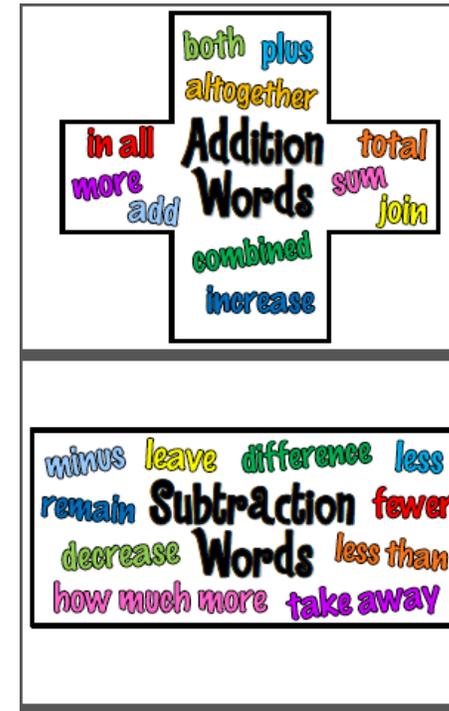
WITH NANCY WAITES

Why students struggle with math word problems.

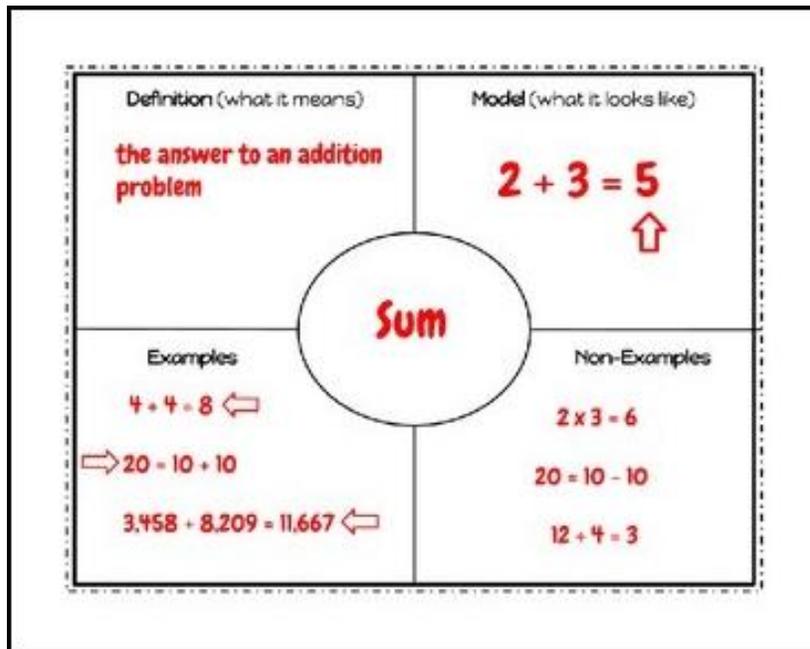
- ▶ If a student is already having trouble with regular math problems, then they can get overwhelmed when they come across a word problem. All they see are words and numbers jumbled together.
- ▶ Word problems take longer to solve.
 - ▶ If a student is good at math, they may still find word problems to be their least favorite.
 - ▶ Word problems requires flexible thinking and lots of practice.

Understanding the Language of Mathematics

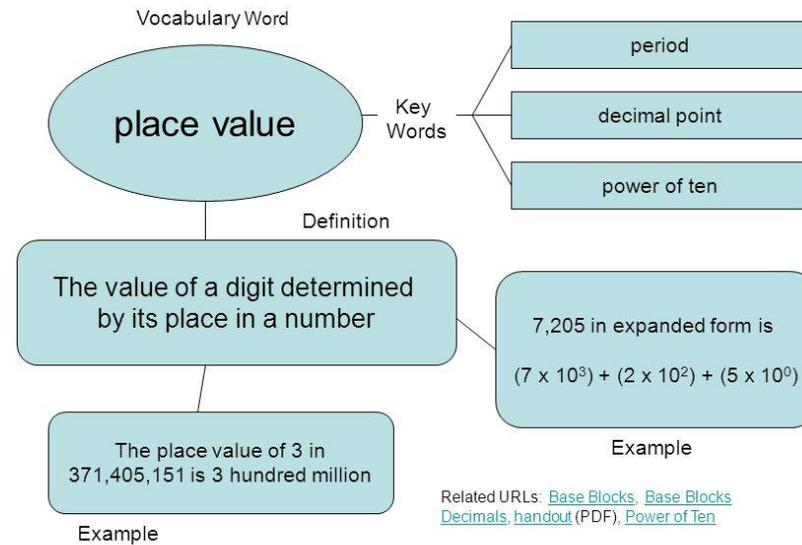
- ▶ Students may be confused by words that have special mathematical meaning, such as “volume,” “yard,” and “area.” Using notecards or graphic organizers may be helpful in understanding mathematical terms such as “divisor,” “quotient,” “product,” and “denominator”
- ▶ We can help students feel more confident with word problems by teaching them a problem-solving process that makes sense to them.



Graphic organizers



The Meaning of Place Value



Strategies to help students

- ▶ Read the problem, then re read and highlight key words.
- ▶ Draw a diagram or picture to help visualize the problem.
- ▶ Determine what the problem is wanting you to solve and what operation you will need to use.
- ▶ Decide on a strategy to solve and use it! It may also help to estimate what you think the answer is to help keep you on track.
- ▶ Solve the problem and check your answer. Use your estimation to see if your answer seems reasonable.
- ▶ It is very rare to complete the problem correctly the first time! Take a look at your mistakes and embrace them.
- ▶ Once you have answered the problem correctly, declare the solution in a complete sentence. Explain why your answer makes sense.

5-D Process

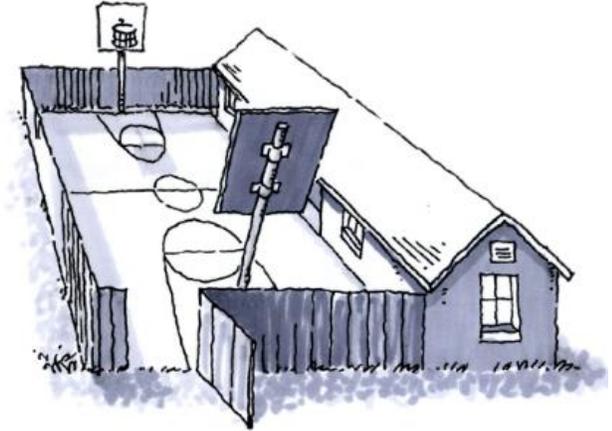
The 5-D Process

Describe/Draw: **Describe** the important words, write down words that you don't know, record any information that is important to the problem. If appropriate, **Draw** a diagram or picture to help visualize the problem putting important information in the picture.

Define	Do	Decide
Divide this into the number of sub columns that you need to Define all your terms. This is where you will try different numbers.	Do all of the math operations here.	Decide if your answer is too small, too large, or if it is correct. ✓ Then Decide what your next trial should be.

Declare: Declare the solution in a complete sentence, answering the question from the problem.

Solving a word problem using the 5-d process



► **5-104. FENCING THE BASKETBALL COURT**

► The Parent Club at Post Falls Middle School needs 183 feet of fencing to go around the rectangular outdoor basketball court behind the school gym. The club volunteers will only need to place a fence on three sides of the court, because the wall of the gym will form the fourth side. The length of the court is 32 feet more than the width. One of the shorter sides will be 5 feet shorter than the other one to leave room for a gate.

► **Your Task:** Determine how much fencing will be used on each side of the court. Be prepared to justify your answer and show all of your work. Be sure that someone who is not on your team can read and understand your work.

The 5-D Process

Describe/Draw:

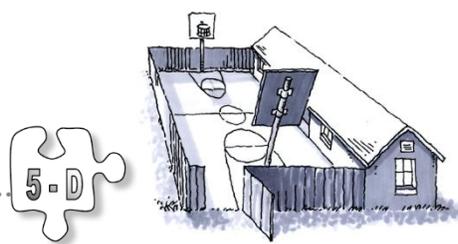
-
-
-

	Define	Do	Decide
Trial 1:			
Trial 2:			
Trial 3:			

Declare:

5.3.2 How can I organize it?

Solving a Word Problem



You have seen that being able to draw diagrams and describe relationships is helpful for solving problems. In this lesson, you will learn another way to organize your thinking as you solve word problems

5-104. FENCING THE BASKETBALL COURT

The Parent Club at Post Falls Middle School needs 183 feet of fencing to go around the rectangular outdoor basketball court behind the school gym. The club volunteers will only need to place a fence on three sides of the court, because the wall of the gym will form the fourth side. The length of the court is 32 feet more than the width. One of the shorter sides will be 5 feet shorter than the other one to leave room for a gate.

Your Task: Determine how much fencing will be used on each side of the court. Be prepared to justify your answer and show all of your work. Be sure that someone who is not on your team can read and understand your work.

The 5-D Process

Describe/Draw:

-
-
-

	Define	Do	Decide
Trial 1:			
Trial 2:			
Trial 3:			

Declare:

The 5-D Process

Describe/Draw: Describe the important words, write down words that you don't know, record any information that is important to the problem. If appropriate, **Draw** a diagram or picture to help visualize the problem putting important information in the picture.

Define	Do	Decide
Divide this into the number of sub columns that you need to Define all your terms. This is where you will try different numbers.	Do all of the math operations here.	Decide if your answer is too small, too large, or if it is correct. ✓ Then Decide what your next trial should be.

Declare: Declare the solution in a complete sentence, answering the question from the problem.