

### Cool Tools for Solving Challenging Word Problems



#### A. Objectives:

Students will create index resource cards with clue words signifying addition, subtraction, multiplication, and division.  
Students will play a game to review the clue words for each operation.  
Students will create word problems by working backward from answers to some questions about themselves.

#### B. State Competencies:

#### C. Lesson Resources:

The Idea for this lesson came from Wacky Word Problems: Games and Activities That Make Math Easy and Fun by Lynette Long ISBN: 0-471-21061-7.

#### D. Materials:

Pencil  
20 index cards per group  
10 more index cards per student

#### E. Instruction:

##### a. Introduction:

Students will brainstorm all the clue words found in word problems that tell us what operations to perform. This will all be recorded on the board. The operations to discuss would be addition, subtraction, multiplication, and division. For example: (addition: sum, perimeter, total)

##### b. Instructional Process:

1.) Separate all students in small groups (3-5 students per group). In between all the members of each group, they will need to write each of the following words on a different index card. (Ex: one card with the word sum per group)

Sum	Difference	Times	Split
Perimeter	Less	Area	Divide
Total	Fewer	Product	Average
All	Change	Percent	Share

Altogether	Minus	Of	part
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2.) The Rules for the Game:

1. Each group will need to deal each player three cards. Place the rest of the cards face down in the center of the table.
2. The players will need to take turns picking a single card from the top of the pile and discarding a single card. The object of the game is to collect three cards that all mean addition, subtraction, multiplication, or division.
3. The first player to collect three cards that mean the same mathematical operation wins the round. The first player to win three rounds wins the game.

*The following is a list of how the words are categorized by their operation.*

ADDITION	SUBTRACTION	MULTIPLICATION	DIVISION
Sum	Difference	Times	Split
Perimeter	Less	Area	Divide
Total	Fewer	Product	Average
All	Change	Percent	Share
Altogether	Minus	Of	Part

4. Have all the students write their age on an index card. Then have the students take half of their age. Now tell them to subtract 2 from the answer. Then ask them to write the answer and then to circle it.
5. Now ask each of the students to write the following on an index card. "If you take half my age and subtract 2 from the answer, you get (answer here). How old am I?"
6. Ask the students to write the answer on the other side of the index card.
7. Now have them write the number of month in which they were born on another index card. Then have them double the number of the month in which they were born and subtract 2. Ask them what their number turned out to be.
8. Now have them write the following on another index card "If you take the number that represents the month in which I was born and double it and then subtract 2, you get (answer here). What month was I born in?"
9. Ask the students to write the answer on the other side of the index card.
10. The students will create similar word problems and the answers about the following facts about themselves. The students will need to write the question on one of the index card while the other side must have the answer.
  - a. How tall am I in inches?

- b. What day of the month was I born?
- c. What size shoes do I wear?
- d. What is my zip code?
- e. How many students are in my class?

11. Students will exchange cards and the students will need to try to find the answers to the word problems.

c. Closure:

The closure to the lesson will be done with a review of the clue words in problem solving. The teacher will write a problem like one of the ones the students created on the board. Together the class will complete the answer.

**F. Modifications/Accommodations**

I will make sure that my slow learners are spread apart into different groups to allow for peer help.

The teacher will write the problems as the students create them. (Slow Learners)

My slow learners will get the index cards with the words written on before the lesson begins.

**G. Reflection:**

The lesson worked out better than expected. It took a little longer than expected. My low-level students were very successful during the lesson, which had been a worry in my mind when I was designing the lesson. I decided to make a chart with the basic operations in which the students filled it in as we did our playing cards. This worked great. The chart turned out to be a visual reference for my low-level students while playing the game. When the students began to play the game, I assisted them many times in using the chart as a guide, but as soon as they got the hang of it, they played independently with no problem at all. This turned out to be a great lesson, but it could definitely be a two to three day lesson.