

## CHOOSING AN OPERATION

(This strategy was developed by Madeline Hunter and contributed by Jan Fisher)

Hunter says that in math students "set to compute" is so strong that they cannot focus on process. If they hear numbers they must give an answer. In word problems, you want them to look for the critical attribute of the problem –NOT solve the problem. To do that, you give them word problems with no numbers. They HAVE to think about the process because they can't solve it (they also think about missing information). At first they will say—"There are no numbers – we can't get the answer!" You say, "You don't need an answer, you just have to tell me whether to add or subtract."

### Critical Attributes of the operations:

Addition – combine quantities (putting things together)

Subtraction – separate quantities (taking things apart)

Multiplication – fast form of addition where you combine (put together) equal quantities

Division – repeated subtraction until the original quantity is gone (take apart)

It's important for the problems to have the SAME content. Give problems for short periods throughout the day – 10 min. max, as many times as you can work it in.

For transfer: have kids write problems. Give them two numbers, like 4 and 6. Tell them to write an addition and a subtraction problem using those numbers. Tell them to write it about themselves or something they do. This aids transfer as well as an understanding of the operation. Do the same thing with multiplication and division. Also, differentiate those, AND subtraction and division.

Another transfer strategy: Write an addition problem. Have them turn it into a multiplication problem---and visa versa. Do this with all 4 operations.

Sample problems:

(1) We have some chairs in my room. Mrs. Bowles class is coming over. We don't have enough chairs. We borrow some chairs from Mrs. Clason. How many do I have now? (+ or -)

(2) We have a bunch of chairs in our room. The class next door needs to borrow some. We took them over. How many do we have now? (+ or -)

(Notice that problems 1 and 2 are both about the same topic. This is important. They need to focus on process, not the content of the problem.)

(3) John brought some candy to school. Mary put hers together with his. How many pieces do they have?

(4) John had a bag of candy. He gave some pieces to Mary. How many does he have?

(5) Mom had cookies for our lunch. She bought some more. How many cookies do we have?

(6) Mom had cookies in a bag. She gave some to John. How many cookies were left in the bag?

Multiplication / Addition Sample Problems:

(1) Bob had some apples. Mary had more apples than Bob. They put all the apples together in a box to sell. How many apples did they have? (add)

(2) Bob and Mary each had the same number of apples. They put them together in a box to sell. How many apples did they have? (multiply)