Talton's
Thinking Approach to Problem-Solving (TAPS)
An Approach to Helping Students with
Arithmetic Word Problems

The following outline should be on a classroom poster, with "combine" etc. explained initially with manipulatives. This introduction must be repeated at least briefly for several consecutive days.

Thereafter, students read (or have read to them) two or three varied word problems each day. "Varied" means that not all of the problems are solved using the same operation or combination thereof. (When a textbook page is headed by "Using Addition in Problem-Solving", no problem-solving will transpire -- decisions will not be made by students, many of whom will not even read the problems, but will add whatever numbers appear therein.) A Saxon/Hake/Larson book is the ideal here.

When students can't decide, the teacher refers them to this chart, and reminds them with manipulatives if the chart alone doesn't help.

Does the problem suggest that we...
I. <u>Combine</u> groups?
    A. If groups are of equal size, multiply.*
    B. Otherwise, add.
II. <u>Separate</u> a group?
    A. If parts of the group are equal, divide.*
    B. Otherwise, subtract.
III. <u>Compare</u> two groups?
    A. If to find a difference, subtract.*
    B. If to find a ratio, divide.
    *Eliminate these for primary-grade students as needed.

Advanced Version Showing Properties

	Combining ⇩	Separating (comparing) ⇩	
(Inverses) →	Addition	Subtraction ⇦ (comparing to find differences)	GROUPS OF ANY SIZE
(Inverses) →	Multiplication	Division ⇦ (comparing to find ratios)	GROUPS OF <u>EQUAL</u> SIZE
	Properties: ⇧ associative commutative identity	No standard properties ⇧ one-sided identity statemental commutativity* * $8 \div 4 = 2 \Leftrightarrow 8 \div 2 = 4$	
	Distributive property of × or ÷ over + or −		