

# Math SuperStars: Problem Solving Strategies

Below are some of the problem-solving strategies that students will learn as they go through Math Superstars. As you look at the problems you are going to teach, there may be benefits in understanding the strategy/strategies that the problem is trying to teach.

**CHOOSE AN OPERATION:** Students determine which operation (addition, subtraction, multiplication or division) to use based upon the information presented.

**ESTIMATION:** Students learn both when and how to estimate answers, based on rounding numbers and performing the appropriate operation. Estimation is encouraged as a strategy in all problem solving to verify reasonableness of answers.

**FIND A PATTERN:** This strategy emphasizes pattern recognition of given sequences of numbers, geometric shapes, pictorial information, and other data for problem solving.

**GUESS AND CHECK:** Students use a variety of trial and error efforts to reach an answer.

**IDENTIFY EXTRA OR MISSING INFORMATION:** By identifying pertinent information students learn to recognize information which is extra or missing.

**MAKE A DRAWING:** Creating visual images of information makes analysis of the facts easier.

**MAKE A LIST:** Students learn to organize information into meaningful lists for later matching or computation.

**MAKE A TABLE:** Pattern recognition, identification of extra or missing information, and arrangement of data into a visual form demonstrate the effectiveness of making a table.

**USE A GRAPH:** Graphing organizes information so that comparisons can be made visually.

**MULTI-STEP PROBLEMS:** Some complex problems require the completion of more than one step to calculate the solution. This strategy emphasizes the importance of identifying both the given information and the order of operations to reach the solution.

**USE LOGIC:** In this strategy students learn to recognize relationships and to answer the question, "Does it make sense?" This includes a process of elimination of answers and sometimes visual representation of information to organize the elements of a problem.

**WORK BACKWARDS:** If the end result is known, students can work backwards by recognizing clue words and using them to solve the problem. This skill develops background for later success in algebra.

**WRITE A NUMBER SENTENCE:** Converting written statements into numerical equations (sentences) to solve for an unknown is the basis of an algebraic approach. This strategy demonstrates identification of known and unknown information to develop sentences for solutions.