

# Problem Solving Strategies

## **Act Out or Use Objects**

It may be helpful for students to act out a problem or move objects around when trying to solve a problem. This strategy enables them to develop visual images of both the problem data and the solution process. They are more likely to remember the process when they take an active role. Chips, beans or counters usually work well when the student needs to visualize relationships.

## **Draw a Picture**

It may be helpful for students to make an illustration when solving certain problems. It can be a necessity for some problems, especially problems involving mapping.

## **Make a Table**

A table helps students to arrange data, keep track of data, and spot missing data, especially numbers. When data is organized in a table, patterns often become obvious.

## **Guess and Check**

Guessing and checking is helpful when a problem consists of large numbers or many pieces of data. The student guesses the answer, tests to see if it is correct, and makes another one if the previous guess was incorrect.

## **Look for a Pattern**

This very important strategy is used to solve many different kinds of problems. When students can identify the pattern, they can predict what can come next helping them to extend the pattern to find the solution. Organizing data in a table often reveals patterns.

## **Work Backwards**

Students begin solving the problem with data presented at the end of the problem and ending with data presented at the beginning of the problem.

## **Work a Simpler Problem**

Students make a simpler representation of the problem. This can be done by reducing large numbers to small numbers or reducing the number of items given in a problem.

Understand-Find the facts.

- Read the problem.
- Identify and list the important facts.
- Restate the question in your own words.

Plan-Decide on a strategy.

- Choose a problem solving strategy:

Act it out	Guess and Check	Make a Table
Draw a Picture	Make a List	Look for a Pattern
Work Backwards	Work a Simpler Problem	Other Strategy

- Explain how you plan to use the strategy.

Do-Find the answer.

- Solve the problem using your plan.

Check-Show that your answer is reasonable.

- Check your answer.
- Rewrite the question (as a sentence) using the answer.
- Explain your process. (Explain why your answer makes sense.)