

STAR Problem-Solving for Math

Set Up, Tools, Act, & Reflect

Set Up: Understand the problem.

- ★ Do you understand all the words used in stating the problem?
- ★ What are you asked to find or show?
- ★ Can you restate the problem in your own words?
- ★ Is there enough information to enable you to find a solution?

Tools: Plan your approach by choosing an appropriate strategy.

- ★ **Act It Out**—use physical objects or models to represent the problem.
- ★ **Choose an Operation**—what sort of arithmetic is called for (addition, subtraction, multiplication, division) by the problem?
- ★ **Guess and Check**—when there is more than one variable involved, control one variable to test what combinations will result in a solution.
- ★ **Look for a Pattern**—Do you see a repeated relationship between numbers in the problem?
- ★ **Make a Chart or Table**—when many combinations of numbers or objects are possible, a chart or table helps illustrate the possibilities.
- ★ **Make a Drawing or Diagram**—can you draw a picture or a diagram that might help you understand the problem?
- ★ **Solve a Simpler or Similar Problem**—have you seen a problem like this before? How did you solve it?
- ★ **Use Logical Reasoning**—a set of statements often creates a problem with a limited number of solutions (or only one).
- ★ **Work Backwards**—If an answer is given, can you reverse the steps in the problem to create the beginning values?

Act: Solve the problem.

- ★ Persevere: Carry out your chosen strategy to completion.
- ★ Be Precise: Use care, patience, and skills.
- ★ Express your answer in units that make sense in terms of the problem.

Reflect: Look back and analyze the result.

- ★ Does your answer make sense?
- ★ Can you explain your reasoning?
- ★ Are there other possible solutions you overlooked?