



## **Solving a Problem**

Students can get bogged down with seemingly overwhelming problems, particularly when challenged to devise a solution to a "messy" problem. These Tip Sheets should help students sort out the problems and possible solutions as they visualize their thinking and learning in the problem-solving process. The steps for solving a problem are outlined in basic steps and questions. The Tip Sheets then map students' thinking patterns to help them "see" their thinking and work through the steps of identifying problems and considering solutions. The graphic organizer helps students record and organize thoughts as they use basic trouble-shooting and problem-solving techniques such as alternative courses of action, prediction of likely consequences, selection of the most appropriate strategy, examination of complex real-world situations, and evaluation and recommendation of the feasibility of various solutions.

**This thinking skill includes these resources:**

*Solving a Problem, Text Outline*  
*Solving a Problem, Student Tip Sheet*  
*Solving a Problem, Graphic Organizer*

# Solving a Problem

## Tip Sheet

### **Step 1: Identify the Problem**

- What is the problem? Whom does it involve? Where is the problem? What is happening? How is it affecting people, places, processes?
- What is my goal? What am I trying to accomplish? What do I want to happen?
- What are the obstacles, barriers, or limits that keep me from successfully accomplishing my goal? What stands in my way? (e.g., individuals, groups, laws, conditions, situations, resources)
- How are these obstacles, barriers, and limits keeping me from success?

### **Step 2: Test the Solutions**

- What are some ways to overcome these obstacles, barriers, or limits? As I think through each possible solution, I ask myself, "is it... realistic? reasonable? workable or feasible?"
- Which solution do I want to test first?  
As I review the possible solutions, which seems to be the most appropriate strategy or alternative for solving the problem?  
(See "Making a Decision Tip Sheet" for additional assistance.)
- How would this way accomplish my goal?
  - As I test my choices of solutions, what are the specific details?
  - Is each step logical?
  - Does each step lead to solving the problem?
- Trouble-shoot the solutions by asking "What if..." questions.
  - What are the likely consequences of putting this solution into place?
  - How would this way accomplish my goal?
  - How effective is this choice?
  - How would I summarize the solution and how it addresses the problem?
- What is the next solution to test? Test another alternative and evaluate effectiveness in comparison to your first choice.

### **Step 3: Evaluate the Results**

- What solution would I recommend?
- Why would I recommend it?
- How would I defend my solution with reasoning and facts?
- I'm ready to present my argument!
- (See "Presenting an Argument Tip Sheet" for additional assistance.)
- What if none of my solutions work? How can I rework my problem solving?
- Have I exhausted my possible solutions, and am I still unsatisfied?
- How can I rephrase, revise, reshape or reframe my problem?
- I want to repeat this process with my newly reframed problem.

# Solving a Problem



## Identifying Problems, Testing Solutions, Evaluating Results

**Step #1**  
Identify the Problem

What is the problem?  
Whom does it involve?  
Where is the problem?  
What is happening?  
How is it affecting people, places, processes?

What is my goal?  
What am I trying to accomplish?  
What do I want to happen?

What are the obstacles, barriers, or limits that keep me from successfully accomplishing my goal? What stands in my way? (e.g., individuals, groups, laws, conditions, situations, resources) How are these obstacles, barriers, and limits keeping me from success?

**Stage #2**  
Test the Solutions

What are some ways to overcome these obstacles, barriers, or limits?

**How would each way accomplish my goal?**

- As I test my choices of solutions, what are the specific details?
- Is each step logical?
- Does each step lead to solving the problem?

**Trouble-shoot each solution by asking "What if..." questions.**

- What are the likely consequences of putting this solution into place?
- How effective is this choice?
- How would I summarize the solution and how it addresses the problem?

**Stage #3**  
Evaluate the Results

What solution would I recommend?  
How would I defend my solution with reasoning and facts?

**What if none of my solutions work?  
How can I rework my problem solving?**

Have I exhausted my possible solutions and am I still unsatisfied?  
How can I rephrase, revise, reshape, or reframe my problem?  
I want to repeat this process with my newly reframed problem.



*I'm ready to present my argument!*



# Solving a Problem

 Graphic Organizer

NAME \_\_\_\_\_

DATE \_\_\_\_\_

**DIRECTIONS:** Use the space below to record information and thoughts about your problem-solving process. Keep in mind that the ideas you record may not make sense at first and may lead you down paths that you will later discard. You will probably have several solutions to this "messy" problem.

**My Problem:**

**My Goal(s):**

**Obstacles, barriers, limitations:**

**Reasons why these are obstacles, barriers:**

**These are three possible solutions to the problem:**

1.

2.

3.

**Testing the solutions:**

**Solution #1:**

How would it work? What will it do?

**Solution #2:**

How would it work? What will it do?

**Solution #3:**

How would it work? What will it do?

**My Results:**

This is the best solution, and this is why.