

# Problem Solving: Classroom Lesson Plan

## Lesson Topic:

Problem Solving Strategies

## Lesson Objective:

Students will be able to describe multiple strategies for solving a problem and apply one or more strategies to assist them in solving a riddle.

## Materials:

- Writing utensils
- Projector or other method to watch the video

## Advanced Preparation:

- Preview the video before sharing it with your students [2:15].
- Write **one** of these riddles for the Warm-up Activity on the whiteboard, overhead, or document camera. Note that one or more of the remaining riddles will be used for the Video Follow-up section.
  - What are the next three letters in this combination: OTTFSS?
    - E, N, T (One, Two, Three, Four, Five, Six, Seven, Eight, Nine, Ten)
  - A woman looks at a painting and says, "Brothers and sisters, I have none. But that woman's mother is my mother's daughter." Who is in the painting?

- Her daughter
- It belongs to you, but your friends use it more. What is it?
  - Your name
- If you drop me, I'm sure to crack. But smile at me, and I'll smile back. What am I?
  - A mirror

### Warm-up Activity:

1. Read the riddle aloud and direct students to consider possible answers.
2. Then, have students work briefly with a partner to continue brainstorming.
3. Finally, bring the class together to discuss possible answers.
4. Reveal the correct answer. If students have discovered additional answers that are plausible, mention that for many riddles (and many problems in life!), there are multiple possible solutions.
5. Use some or all of the following questions to discuss the process of solving the riddle:
  - How did you think about solving the riddle? What steps did you take?
  - Did you prefer thinking about the riddle by yourself or with your partner? Why?
  - How did you feel when you heard other groups' ideas?
  - Did you ever change your mind about the answer? Why?
  - How did you feel when you heard the correct answer?
6. End the discussion by asking, "What are some ways or strategies you can use to solve a riddle or problem?"

7. Using the class discussion, create a list of problem-solving strategies on the whiteboard, overhead, or document camera. Save this list for use during the Video Follow-up.

### **View the Video: "Problem Solving"**

1. Tell students they will be watching the video titled, "[Problem Solving](#)".
2. Explain that the video presents role models sharing their favorite problem-solving strategies and discussing the importance of being a strong problem solver.
3. View the video together and have students listen for the role models to describe problem-solving strategies. Direct students to listen for any strategies not currently listed on the class list from the Warm-up Activity.
4. View the video again; this time, invite students to formulate questions or comments about the ideas discussed in the video and to be prepared to discuss these after viewing the video.

### **Video Follow-up:**

1. Ask students to offer their questions, comments, reactions, and responses to the video.
2. Ask, "What pieces of advice or strategies did the role models offer to help solve problems?"
3. Direct students to turn and talk to a partner. Then bring the class together to share their ideas.
4. Add any new strategies or ideas to the list created during the Warm-up Activity.

5. Ask, "Which strategies, if any, did you use to solve our riddle at the beginning of the lesson? Were there any strategies that you didn't try?"
6. Direct students to turn and talk to a partner.
7. Explain that students will have a chance to solve another riddle. This time, they should try to use as many of the problem-solving strategies from the class list as they can.
8. Display another riddle on the whiteboard, overhead, or document camera. Then allow students to work individually or in pairs to find the answer.
9. Bring the class back together to share their ideas. Then, provide the correct answer.
10. Use some or all of the following questions to close the lesson:
  - Which strategies did you try out to solve the riddle?
  - Did some strategies work better than others? Why or why not?
  - Was it easier to think about or solve this riddle than the riddle at the beginning of the lesson? Why or why not?
  - How could you use these strategies in your own life? Do certain strategies seem like they would be better for certain kinds of problems than others?
11. End by telling students that although everyone encounters problems in their lives, at school, and in their careers, having strategies and a problem-solving plan can help you more quickly and easily overcome challenges and solve problems.



### Extension Activities:

1. Have students continue to explore problem solving using one or more of the popular “toothpick” problems. Many of these problems can be found easily using an internet search engine.
2. Use the “Related Questions to Explore” as discussion springboards or writing prompts to help students further explore problem-solving strategies and skills.

### Related Questions to Explore:

- Why is it important to have strong problem-solving skills?
- How might problem-solving skills help you in school? At home? In your future career?
- Do you think you can be a good <teacher, scientist, principal, CEO, etc.> without having strong problem-solving skills? Why or why not?
- If you are stuck when trying to solve a problem, what might you try?
- How have you used problem-solving skills recently? What strategies did you try? What happened?



## Ideas for Future Lessons/Activities Related to Problem Solving:

1. Problem Solving at Work: Problem-Solving Skills Necessary for Different Careers
2. Classroom Experiment: Is There a "Best" Strategy for Solving Problems?
3. Famous Problems: The Lightbulb, Apollo 13, and John Snow's Cholera Discovery
4. Literature-Based Learning: Focus on Famous Historical Problem Solvers
5. Problem Solving Today: What's Happening in Our World
6. Conducting and Recording Interviews about Problem-Solving in the Workplace with Real Life Inspiring Women
7. Personal Problem Solving: Challenging Scenarios for Students to Discuss and Roleplay
8. How Can Problem Solving Make Our Lives Safer? Airbags, Seatbelts, and More