



Exploring Leadership

PROBLEM SOLVING: LOGICAL REASONING

Logical reasoning isn't just for math teachers or detectives—it's a skill we use every day. Jumping to conclusions or making unsupported claims rarely solves problems effectively. But when we explain the logic behind our conclusions, others are more likely to understand and agree with you. Educated guesses may not always be perfect, but they're far more convincing than random ones.

CONVERSATION STARTER:

For the activity, display the image in the Appendix and ask:
What do you think logically explains what happened here?

Note: There is no single right or wrong answer.

Logical reasoning means analyzing information to draw educated conclusions based on facts, observations, and patterns. By grounding your conclusions in careful observation and known rules, you can develop solutions that are logical and reliable.

KEY OBJECTIVES:

- Practice observation skills through careful reading and listening.
- Apply logical reasoning to solve a mystery.

WHAT YOU'LL NEED:

- Copies of "Slip or Trip" mystery (see Appendix).
- Projector to display the photo from the Appendix.

EXPLORATION ACTIVITY:

In this activity, participants will take on the role of detectives to investigate a mystery using logical reasoning. They will collaborate with their team to analyze clues and build a logical case.

- Form groups of 3–4 participants and space them out so they can't hear other groups' discussions.
- Provide each group with a copy of the 'Slip or Trip' Mystery (see Appendix) to each group.
- Project the image from the Appendix for everyone to review. Encourage them to look closely at the picture for hidden clues.
- Read the 'Slip or Trip' Mystery directions and story aloud as the participants follow along.
- Give each group 8–10 minutes to analyze the clues and create a logical explanation of what happened.
- Each group will share their theory with the others, explaining their logical reasoning and supporting it with evidence from the story and picture.

FACILITATOR TIPS:

- The item in Arthur's hand on the image is a drinking glass. If participants ask, you can confirm this detail.
- Avoid giving a 'correct' answer. Your role is to guide the discussion and encourage participants to support their conclusions with logical reasoning.



REFLECTION QUESTIONS:

- What clues did you notice in the story and picture? What did they make you wonder?
- How did what you already know help you come to a solution?
- How did your group decide on a solution?

APPLICATION DISCUSSION:

- Relate an experience when logical reasoning helped you (or someone else) solve a problem.
- What are the benefits of solving problems logically instead of emotionally?
- Do you think you are a “logical” person in daily life? Why or why not?



CONCLUSION:

Logical reasoning is not just a problem-solving tool—it’s also a way to persuade others that your solution makes sense. Logical reasoning builds confidence in your decisions, whether you’re solving a problem or explaining your ideas to others. And while Queenie might not agree, mastering logical reasoning will set you apart as someone who makes thoughtful, well-supported decisions.

Utah State University is an affirmative action/equal opportunity institution and is committed to a learning and working environment free from discrimination. For USU’s non-discrimination notice, see equity.usu.edu/non-discrimination.

REFERENCES

- Logical Reasoning: https://en.wikipedia.org/wiki/Logical_reasoning#
- Examples of Inductive Reasoning: <https://examples.yourdictionary.com/examples-of-inductive-reasoning.html>
- http://msjyates.weebly.com/uploads/8/7/2/7/87279318/crime_scene_investigation__finding_the_proof.pdf



APPENDIX:

“Slip or Trip” Mystery

Step into the role of detectives and use logical reasoning to solve the following mystery with your group. You'll have 8–10 minutes to discuss the story and photo. Look closely to see if the photo matches her version of events. Then, each group will present their theory. Your answer may not be right, but the stronger and more logical your reasoning, the more convincing your case will be.

At 5'6" and 110 pounds, Queenie Volupides was a sight to behold. When she tore out of the house after a tiff with her husband, Arthur, she went to the country club where there was a party going on. She left the club shortly before 1:00 A.M. and invited a few friends to follow her home and have one more drink.

They arrived at the house about ten minutes after Queenie, who met them at the door and said, “Something terrible happened! Arthur slipped and fell on the stairs. He was coming down for another drink – he still had the glass in his hand – and I think he’s dead. What shall I do?” The police concluded that Arthur died from head trauma, but they need your help figuring out what happened.

Can we believe what Queenie says?



(Materials adapted from: Treat, Lawrence. *Crime and Puzzlement 2*. Boston: David R. Godine, Publisher, 1982.)