



ACTIVITY 10

Making Decisions with Causal Reasoning

DISCUSSION



Making decisions
based on cause-and-
effect evidence can
increase confidence
in the outcome.



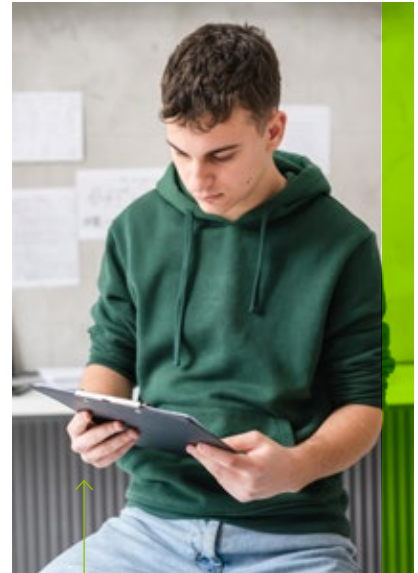
10: MAKING DECISIONS WITH CAUSAL REASONING

GUIDING QUESTION

How can scientific evidence for causation be used to inform decisions?

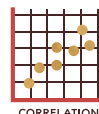
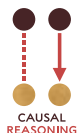
INTRODUCTION

In this unit, you have learned how to use different types of evidence to understand cause and effect. Causal reasoning can help individuals and communities identify the cause of a problem, develop solutions, and predict outcomes—for example, evaluating the evidence to determine where a new community park should be located or which after-school programs are the most effective. In this activity, you will apply what you have learned throughout the unit to make a decision about the Salas High School Well-Being Task Force scenario. You will review evidence for the four proposed strategies—Gratitude Writing, Pet Therapy, Green Spaces, and Quality Sleep—and compare plans for making the strategies happen. You will then choose the most promising strategy to recommend to the school.



You will be choosing a well-being strategy based on how effective it is and how practical it will be to implement.

CONCEPTUAL
TOOLS



MATERIALS LIST

FOR EACH GROUP
OF FOUR STUDENTS

4 RCT SUMMARY CARDS

STUDENT SHEET 10.2
"Proposing a Plan"

FOR EACH STUDENT

STUDENT SHEET 5.1
(a,b,c, or d)
"Evaluating Indicators
of Causation"
(COMPLETED)

STUDENT SHEET 9.1
"Comparing RCTs Related
to the Well-Being
Strategies"
(COMPLETED)

STUDENT SHEET 10.1
"Weighing Evidence
for the Well-Being
Strategies"

STUDENT SHEET 10.3
"Comparing Well-Being
Strategies and
Proposed Plans"

PROCEDURE

PART A: REVIEWING EVIDENCE FOR THE FOUR WELL-BEING STRATEGIES

- 1 Read the following scenario.

The Salas High School Well-Being Task Force is meeting one final time to decide on a strategy and a plan for implementation to improve student well-being. A plan will be designed from one of the following four well-being strategies: Gratitude Writing, Pet Therapy, Green Spaces, and Quality Sleep. The recommendation depends on:

- 1 *strong evidence that the well-being strategy increases teenage well-being.*
- 2 *a practical way to implement the strategy at Salas High School.*

The Task Force will consider both of these criteria before making a recommendation.



Gratitude Writing



Pet Therapy



Green Spaces



Quality Sleep

- 2 Gather your student sheets from Activities 5 and 9. Your teacher will also give you 4 RCT Summary cards that describe published studies for each well-being strategy, including the one you compared to your class experiment in Activity 8.
- 3 Work as a group to complete Student Sheet 10.1, “Weighing Evidence for the Well-Being Strategies” for each well-being strategy. *Each group member will record the information for a different well-being strategy on their copy of the student sheet.* Use the evidence from Activities 5 and 9, along with the RCT Summary cards, to complete the table on the student sheet. Consider what you’ve learned in this unit—indicators of causation and study design elements—as you evaluate the evidence. Be sure to record the name of the well-being strategy you are responsible for at the top of the student sheet.
- 4 As a group, compare the research findings for each of the four strategies. Discuss how strong the evidence is for each strategy in improving well-being. Record your ideas in your science notebook.
- 5 Have a class discussion about the strength of the evidence for each well-being strategy. Then, decide for yourself how strong the scientific evidence is for each one. Record your ratings from 0 (no relevant evidence) to 5 (very strong evidence) in the first row of the table on Student Sheet 10.3, “Comparing Well-Being Strategies and Proposed Plans.” (You will complete this student sheet in Steps 8 and 9.)

PART B: DESIGNING AND EVALUATING PROPOSED PLANS FOR IMPLEMENTING THE STRATEGIES

- 6 Your group will be assigned one well-being strategy. Brainstorm ways to implement that strategy at an actual school and choose the best idea. Decide on a name for your proposed plan and discuss how it could be carried out, keeping in mind how practical it would be to do at a school. On your copy of Student Sheet 10.2, “Proposing a Plan,” record the name of your proposed plan. Also record all the details of your plan in the “Specific Plan Description” table.
- 7 Work with your group to identify all the supplies that would be needed to carry out your proposed plan, including supplies that could be donated. Also identify any possible implementation challenges that might arise, along with suggested solutions. Record your ideas in the “Practical Considerations” table on Student Sheet 10.2.
- 8 Share your proposed plan and practical considerations with the class. As other groups present their proposed plans, record notes on Student Sheet 10.3, “Comparing Well-Being Strategies and Proposed Plans.”

- 9 Have a class discussion about how practical each plan is, considering both its strengths and weaknesses. As a class, choose the best proposed plan for each well-being strategy and record each name in the second row of the table on Student Sheet 10.3. Then, on your own, rate each selected plan, using a scale from 0 (extremely impractical) to 5 (very practical) and record your ratings in the last row of the table.



Evaluating research studies can help you make informed decisions for yourself and your community.

PART C: DECIDING ON A PLAN FOR SALAS HIGH SCHOOL

- 10 Participate in a Walking Debate to discuss which plan your class should recommend to the Well-Being Task Force at Salas High School. Use evidence about the well-being strategies and information about the proposed plans from Student Sheets 10.1, 10.2, and 10.3 to support your position.
- 11 As a class, decide which of the four proposed plans the Task Force should recommend to their school based on:
- the strength of the evidence for each well-being strategy, and
 - the practical considerations for each proposed plan.

BUILD UNDERSTANDING

- ① From all the plans your class discussed, which do you think is the best choice for Salas High School? Write a letter to the school leadership with your recommendation. You may choose any of the four plans, as long as you explain your evidence and reasoning. Be sure to include the following:
- a a description of the proposed plan,
 - b evidence that supports the effectiveness of the well-being strategy,
 - c practical considerations for implementing the proposed plan, and
 - d any additional information you think they should consider.


New Message

To: Salas High Principal <principal@salashigh.edu>

From: Salas High School Task Force <taskforce@salashigh.edu>

Dear School Leaders,

Thank you for the opportunity to consider different well-being strategies at Salas High. We, the task force, recommend...



Send

CONNECTIONS TO EVERYDAY LIFE

- ② Would the recommendation you made for Salas High School also work in your own school? Explain why or why not. If you don't think it would work, describe what you think would be a better option.
- ③ If you were going to try one of the four well-being strategies in your life, which one would you choose and why? Explain by discussing how effective the strategy is at improving well-being and by describing why it might work best for you.

EXTENSION

In collaboration with your class and teacher, create a letter or presentation for your school administration proposing a plan to improve well-being at your own school. Use what you have learned in this unit to make an argument and address likely concerns.