

Goal • Learn how to organize a correlational study.

Introduction

A correlational study investigates natural relationships between variables. For example, the length of a shadow compared to the time of day.

In a controlled experiment, the independent variable is intentionally manipulated to observe changes to other variables. For example, measuring the temperature on a windowsill in each of the following situations:

- full sunlight,
- with a blind over the window,
- with a muslin curtain over the window
- with a heavy velvet drape over the window, and
- with a piece of cardboard taped to the window.

A correlational study observes natural changes in an independent variable that may lead to changes in other variables. For example, the height of the Sun may cause a difference in the length of a shadow.

What to Do

- Answer the questions below to help you understand and plan a correlational study.

Questions

1.

Temperature (°C)	31	34	11	14	26	39	1	6	18	17	33	2	9
Rate of decay (%)	65	1	10	29	99	0	0	2	75	74	67	1	9

- a. What is being studied in this investigation?

- b. What data have been collected?

2. Do either part a. or part b.

- a. Use the outline below to develop a hypothesis for the above inquiry.

If _____

then _____

because _____



Correlational Study Worksheet

- b. Use the outline below to develop a prediction for the inquiry.

If _____ ,

then _____

3. Identify the independent variable and how it is being measured.

4. Identify the dependent variable and how it is being measured.

5. Use questions 1 to 4 to help you design your own correlational study. Record your design in your Science Log.

a. What will you study?

b. Develop and state a hypothesis.

c. Identify the dependent and independent variables.

d. Describe what observations you will make, why you need these observations, and how you will make and record them.

e. Describe any treatments you plan to develop, and the steps for each treatment.

6. Do the investigation. When you have finished, list your key findings. Provide supporting data for each one.

Finding #1 _____

Finding #2 _____

Finding #3 _____

Finding #4 _____

7. After considering your findings, do you think that this experiment needs to be repeated? _____

If so, suggest how often it should be repeated. _____

Outline a recommended procedure.

