

## Activities

### Understand Ideas

1. Create a chart showing the research methods used by social scientists. The five research methods will be your column headings across the top of your chart. Below each heading, write in point form two important characteristics that describe each method.
2.
  - a) What steps are involved in conducting an experiment?
  - b) Why is it important to have a control group?
  - c) What type of problem or question is best suited to this research method?
3. How would you prepare to conduct an interview?

### Think and Evaluate

4. Which research method would you use to test each of the following hypotheses? Give reasons for your choices.
  - Teenagers have more leisure time than their parents.
  - Teachers ask more questions of the students in the front of the class than at the back.
  - Over 75 percent of students you meet in the school corridors will return a smile.
  - All school facilities are wheelchair accessible.
  - Students in the cafeteria tend to sit with people of the same culture.
  - Students who sit in the front row of the class get better grades than those in the back.
  - Girls in secondary school get better grades than boys.

### Focus Questions

What are the three steps in analyzing data?

Why is analyzing data so important?

### Apply Your Learning

5. Develop a hypothesis for each of the following questions. Suggest a research method that would be most appropriate for testing your hypothesis in each case. Why did you choose those particular methods?
  - Will students work harder for marks or for free time?
  - Are women better drivers than men?
  - Does more education bring higher income?
  - Are older or younger students more willing to follow school rules?
  - Do Canadian television shows reflect the cultural diversity of Canadian society?
  - Do most seniors in your community live independently, with their families or in retirement homes?
  - Do parents allow daughters less freedom than they give their sons?
  - Is there a relationship between school grades and having a part-time job?

### Research and Communicate

6.
  - a) Select one of the topics listed in Activity 5 above and conduct your research based on the method you have chosen.
  - b) Present your findings to the class. Be sure to describe the method you have used as well as your findings.

## Analyzing Data

The research methods we have discussed will all yield data that takes a variety of forms depending on the method chosen, for example, numbers and statistics from a survey questionnaire, a description of a structured observation or notes from an interview. The data, in itself, will not be useful unless it is organized and analyzed. It must be changed into a format that helps test the hypothesis and answer the question being asked—it must be turned into evidence.

## Analyzing Data: How Much Do Students Spend?

Follow the procedure below to put your social science skills into action.

**Question:** How much money does a high-school student spend per day, on average?

**Hypothesis:** Most students spend more than \$4.00 per day.

**Research method:** Use a sample survey questionnaire. Conduct a random sample survey of students in the school. Make sure your sample includes at least 15 people. Ask the following question: "On average, how much money do you spend in a day? Consider daily expenditures (such as bus fares) and exception expenditures (such as going shopping for clothes or going to a movie on the weekend)."

**Data analysis:** Start by listing your findings. Your findings might look like this:

Fatima	\$0.00
Robin	\$4.00
Vasily	\$70.00
Abiba	\$4.50
Tara	\$5.00
Jeanne	\$3.00
Rasheed	\$14.00
Kirsten	\$20.00
Bill	\$5.50
Lana	\$20.00
Liam	\$3.00
Mara	\$14.00
Dee	\$4.50
Tommy	\$3.00
Zachary	\$80.00

Now organize your data to make sense of your findings. One way is to determine the median, which is derived from ordering the statistics from lowest to highest. The median is the mid-point, or the point at which half the numbers are above and half are below. In the example above, \$5.00 appears to be the median:

\$0.00  
 \$3.00  
 \$3.00  
 \$3.00  
 \$4.00  
 \$4.50  
 \$4.50  
**\$5.00**  
 \$5.50  
 \$14.00  
 \$14.00  
 \$20.00  
 \$20.00  
 \$70.00  
 \$80.00

Another way to organize your data is to determine the mean average. To do so, you take the total amount spent and divide it by the number of people surveyed. In the example above, the total is \$250.50. When the total is divided by 15, the result is \$16.70 per person.

Which of these methods of organization do you think would be best for your purposes? Choose one and draw a conclusion based on your survey. Compare your findings with others in the class.

## Steps to Analyze the Data

Analyzing data is a process that involves three steps:

- 1. Data should be separated into two categories: relevant and irrelevant.** Some of the data that has been collected may not have a bearing on the question or the hypothesis. This data can be discarded as irrelevant. The only data that is retained and used is whatever will address the question and support or negate the hypothesis.
- 2. Data should be organized in a way that makes it clear.** Unorganized information can become a random collection of facts and figures. Data can be organized in several ways: divide the data into information that either supports or negates the hypothesis; convert numbers into percentages; or put the data into a chart or a graph to determine whether it reveals any trends over time.
- 3. Data should be analyzed in terms of how it supports, or fails to support, the hypothesis.** This is a crucial step in research. Once the information has been organized, the researcher has to determine the extent to which it supports the hypothesis. This process involves dividing the data into three categories: information that supports the hypothesis, information that provides evidence against the hypothesis and information that neither supports nor negates the hypothesis.

**random**—having no specific pattern, purpose or objective

### Focus Questions

What are the four categories of conclusions?

How can you verify that a social science study has value?

## Drawing Conclusions

In the social sciences, a conclusion is an answer to the question being asked. It is also a statement of the degree to which the hypothesis is supported. Based on the hypothesis, conclusions can be divided into four categories:

1. The evidence supports the hypothesis.
2. There is some evidence in support of the hypothesis.
3. The evidence does not support the hypothesis.
4. The evidence supports an alternative hypothesis.

Which of these conclusions best fits the findings of your survey on student spending?

Social scientists should not be overly cautious when considering warranted or reasonable conclusions. On the other hand, they must never go beyond what is supported by the evidence. There are three general tests to check that a social science study has value: objectivity, relevance and validity. To be objective, the findings should not be coloured by the personal opinions of the researcher. To be relevant, the findings must relate directly to the problem. To be valid, all results must be accurate and reliable.

**Figure 1-6**  
Data can help you draw conclusions only if it is organized and analyzed.



## Previewing a Textbook

Before you go any further, take a few minutes to preview the text so that you will have a better sense of what and how you will learn in this course. A preview will allow you to become familiar with the format of the book and it will whet your appetite to learn more about society in general as well as specific topics.

### Here's How

- Turn to the Preface and read the author's orientation to the book.
- Turn to the table of contents and see how the author has organized the information into units, chapters or other subsections.
- Leaf through the book, rapidly scanning the contents. You might wish to read the occasional paragraph or heading that interests you. Try to get the feel of the book.
- For each section that interests you, skim the text and notice the visual material. In a phrase or short sentence, answer the question, "What is this material about?"

- Put the book down and write three questions concerning matters you have become curious about as a result of this preliminary examination.

### Practise It

1. Follow the steps above for this text.
2. Share your questions with a partner. Identify the topics or features that you think will interest you most in the text.



Figure 1-7

Previewing a textbook will give you a sense of what you will learn in the course.

## Activities

### Understand Ideas

1. a) List and describe the three steps of data analysis.  
b) Why is analyzing data such an important step in the inquiry model?
2. a) What are the four categories of conclusions? Provide an example of each.  
b) Refer to your own survey in Social Science Live (page 15). In which category does your conclusion belong?

- c) Why is it useful to divide conclusions into categories?

3. What tests can you use to confirm the value of your study?

### Think and Evaluate

4. How do you decide whether data is relevant?
5. In your opinion, which step in data analysis is most important? Why?