

## Extension

Use after Lesson 11.4

# Design Surveys and Experiments

 **TEKS a.1, 2A.1.B**

**GOAL** Write unbiased survey questions and unflawed experimental procedures.

### Key Vocabulary

- **biased question**
- **experimental group**
- **control group**

When designing a survey, it is important that the survey questions be carefully written. If a question is poorly written, then the responses of the people surveyed may not accurately reflect their opinions or actions. These types of flawed questions are called **biased questions**.

There are several reasons why a question may be biased:

- The question may encourage the respondent to answer in a particular way.
- The question may be perceived as too sensitive to answer truthfully.
- The question may not provide the respondent with enough information to give an accurate opinion.

Bias may also be introduced through the order in which the questions are asked or may result when the person conducting the interview intentionally or unintentionally influences the responses of those interviewed.



### EXAMPLE 1 Identify and correct bias in survey questions

**Tell why the question may be biased. Describe how to correct the flaw.**

- a. “Many national parks are being heavily damaged by acid rain. Do you favor government funding to help prevent acid rain?”

This is an example of a *leading question*. Respondents may think a “no” response means they are not in favor of supporting national parks. In this way, the question encourages the respondent to answer “yes.”

A better way to ask this question is to eliminate the first sentence and just ask, “Do you favor government funding to help prevent acid rain?”

- b. “Do you agree with the amendments to the Clean Air Act?”

The question assumes that the respondent is familiar with the amendments to the Clean Air Act. Responses by people unfamiliar with the amendments could lead to misleading conclusions.

A better way to ask this question is to first state each amendment and then ask, “Do you agree with this amendment?”

- c. Police officers ask mall visitors, “Do you wear your seat belt regularly?”

Many motorists may answer untruthfully because a police officer is asking the question, especially if the law requires seat belt use. The data collected might not accurately represent the percent of people who wear seat belts regularly.

In this case, the correction is to have the question be asked by someone not involved in law enforcement.