

# 1.2 Using a Scientific Approach



## Reading Focus

### Key Concepts

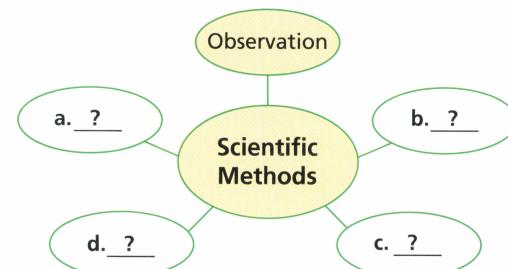
- 👉 What is the goal of a scientific method?
- 👉 How does a scientific law differ from a scientific theory?
- 👉 Why are scientific models useful?

### Vocabulary

- ◆ scientific method
- ◆ observation
- ◆ hypothesis
- ◆ manipulated variable
- ◆ responding variable
- ◆ controlled experiment
- ◆ scientific theory
- ◆ scientific law
- ◆ model

### Reading Strategy

**Using Prior Knowledge** Before you read, copy the web diagram below. Add to the web diagram what you already know about scientific methods. After you read, revise the diagram based on what you have learned.



If you've ever been caught in the rain without an umbrella, your first instinct was probably to start running. After all, the less time you spend in the rain, the less water there is falling down on you. So you might think that running in the rain keeps you drier than walking in the rain over a given distance. However, by running in the rain you run into more raindrops than by walking, thereby wetting more of your face, chest, and legs. Have your instincts been getting you wetter instead of keeping you drier?

You now have a question that you can try to answer with a scientific approach. Which keeps you drier in the rain—walking or running?

## Scientific Methods

In order to answer questions about the world around them, scientists need to gather information. An organized plan for gathering, organizing, and communicating information is called a **scientific method**. Despite the name, a scientific method can be used by anyone, including yourself. All you need is a reason to use it. 🔑 **The goal of any scientific method is to solve a problem or to better understand an observed event.**

**Figure 6** To run, or not to run: that is the question.

**Designing Experiments** *How can you test if running in the rain keeps you drier than walking in the rain over the same distance?*

