

**Chapter 1**

Use with Section 2

**ENRICHMENT****• Scientific Problem Solving****Inductive Reasoning**

When you draw a conclusion based on a number of observations, you are using inductive reasoning. By this process, you make a general statement based on specific examples. The following are examples of inductive reasoning.

Problem to solve: What percent of the seeds in a package will sprout?  
Observations: In three tests of 100 seeds each, 95, 89, and 92 seeds sprouted.  
Conclusion: About 92% of the seeds in a package will sprout.

Problem to solve: Which of the two cars in a race is faster—the blue car or the red car?  
Observations: In 5 tests of 10 laps each, with the same driver, the blue car's time was always faster.  
Conclusion: The blue car is the faster car.

The conclusions that result from inductive reasoning only reflect the observations that were used to make them. If other factors would affect the conclusion but were not observed, the process may produce misleading results.

1. Suppose all of the seed tests were done at the same time in the same type of soil and weather conditions. What limitations would that put on the conclusion that 92% of the seeds in a seed package will sprout?

---

---

---

2. What if, unknown to the experimenter, a wheel on the red car was loose? What effect could that fact have on the validity of the conclusion that the blue car is the faster car?

---

---

---