

## SKILLS PRACTICE

### Posing Questions

Examine the statements below. For each of Questions 1–10, write yes if the topic can be investigated scientifically. Write no if it cannot be investigated scientifically. Then, for each item to which you answered yes, rewrite the topic in the form of a scientific question. Answer Question 11 on the back of this sheet.

1. Some people work better in the morning, and other people work better in the afternoon.  
\_\_\_\_\_
2. Taking something that belongs to another person is wrong.  
\_\_\_\_\_
3. Snakes travel in pairs.  
\_\_\_\_\_
4. Animals behave in strange ways before an earthquake.  
\_\_\_\_\_
5. People who don't recycle should have to pay fines.  
\_\_\_\_\_
6. Basketball is a better sport than soccer.  
\_\_\_\_\_
7. You will remember best whatever you read just before you fall asleep.  
\_\_\_\_\_
8. Maria's kind of bike is faster than Rob's kind of bike.  
\_\_\_\_\_
9. Each year when the weather gets cold, birds fly to warmer regions.  
\_\_\_\_\_
10. Trucks use more gasoline than cars.  
\_\_\_\_\_
11. **Think About It** Choose one of the scientific questions you developed and tell what kind of evidence you would need to answer the question. How do you think a researcher could collect that evidence?

## WHAT'S YOUR PROBLEM?

In order for the scientific method to help you solve a problem, the problem must be a specific one. For example, if you want to learn more about water conservation, you need to focus on a particular problem, such as "Does washing dishes by hand use less water than a dishwasher?"

Once your problem has been defined, you can then gather information in order to state your hypothesis. A hypothesis for the above problem might be: "Washing dishes by hand uses less water than a dishwasher."

Write a specific problem you would like to find an answer to for each topic listed below. Then formulate a hypothesis for each. An example has been provided to help you. For more fun, choose one of your problems to find an answer to using the scientific method.

TOPIC	PROBLEM	HYPOTHESIS
1. Plants	Do plants need water to grow?	If a plant gets water, then it will grow.
2. Heart		
3. Soap		
4. Water Conservation		
5. Paper Towels		
6. Batteries		
7. Flowers		
8. Food		

## Dr. Herman and the Variables

Name \_\_\_\_\_ Date \_\_\_\_\_ Hour \_\_\_\_\_

Dr. Herman, a scientist, observed that white mice that were fed seeds appeared to grow more than mice given leafy green and yellow vegetables. Dr. Herman wondered if the protein in the seed was responsible for the growth. He designed an experiment to test his hypothesis. He divided 200 mice of the same age, size, health, and gender into two groups of 100 mice each. The mice were kept under identical conditions for fourteen days. One group was given a diet low in protein (leafy vegetables). The other group was given a normal protein diet (seeds). The weight of each mouse was recorded daily for fourteen days.

Answer the following questions using complete sentences.

1. What problem was Dr. Herman trying to solve? \_\_\_\_\_  
\_\_\_\_\_
2. What information did he have before the experiment? \_\_\_\_\_  
\_\_\_\_\_
3. What was Dr. Herman's hypothesis? (If.....then.....) \_\_\_\_\_  
\_\_\_\_\_
4. Which group of mice served as the control group for his experiment? \_\_\_\_\_  
\_\_\_\_\_
5. What was the Independent variable? \_\_\_\_\_
6. What was the Dependent variable? \_\_\_\_\_
7. Why were large groups of mice used in this experiment? \_\_\_\_\_  
\_\_\_\_\_