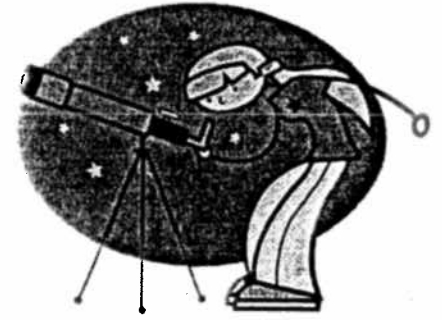


# What is Science?

Textbook pages 13 – 22.



Name: \_\_\_\_\_

Homeroom: \_\_\_\_\_ Date: \_\_\_\_\_

## Introduction (p. 13)

1. What does scientific inquiry refer to?

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## Posing Questions (p. 14)

2. Is the following sentence true or false? Scientific inquiry often begins with developing a hypothesis. \_\_\_\_\_
3. Circle the letter of each sentence that is a scientific question.
  - a. At what temperature does water boil?
  - b. When does the sun rise on April 3?
  - c. How can my team work better together?
  - d. Why does she like science more than he does?

## Developing a Hypothesis (p. 15)

4. A(n) \_\_\_\_\_ is a possible explanation for a set of observations or answer to a scientific question.
5. Is the following sentence true or false? Scientists consider a hypothesis to be a fact. \_\_\_\_\_
6. What is a testable hypothesis?

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### Designing an Experiment (pp. 16–17)

7. To test a hypothesis, a scientist designs a(n) \_\_\_\_\_.

Match the term with its definition.

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|-------------------------------|--|
| ___ 8. responding variable    | a. a statement that describes how to measure a particular variable or define a particular term |
| ___ 9. operational definition | b. the one variable that is purposely changed to test a hypothesis                             |
| ___ 10. manipulated variable  | c. a factor that can change in an experiment   |
| ___ 11. controlled experiment | d. the factor that may change in response to the manipulated variable                          |
| ___ 12. variable              | e. an experiment in which only one variable is manipulated at a time                           |

13. Is the following sentence true or false? If you did not control variables in an experiment, there would be no way to know which variable explained your results. \_\_\_\_\_

### Collecting and Interpreting Data (p. 18)

14. The facts, figures, and other evidence gathered through observations are called \_\_\_\_\_.

15. In carrying out a controlled experiment, what does a data table help you do?

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16. Circle the letter of each sentence that is true about graphs.

- a. A graph can reveal a trend in data.
- b. Graphs help scientists interpret data.
- c. Graphs are the only way to organize data.
- d. A graph can reveal a pattern in data.

### Drawing Conclusions (pp. 19–20)

17. A(n) \_\_\_\_\_ is a summary of what you have learned from an experiment.

18. What might you ask yourself in drawing a conclusion about an experiment?

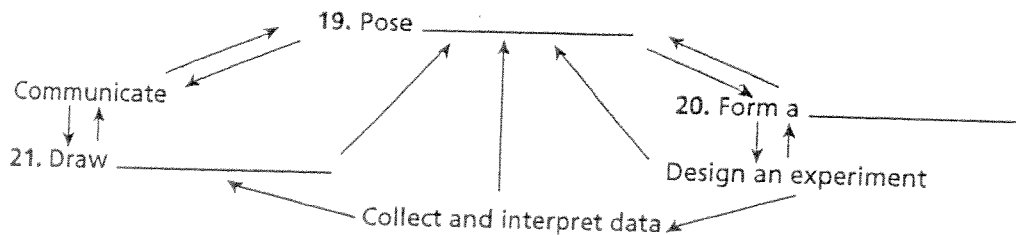
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### Scientific Inquiry (continued)

Complete the diagram below by filling in the blanks.

#### The Nature of Inquiry



22. Why is scientific inquiry a process with many paths, not a rigid sequence of steps?

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#### Communicating (p. 21)

23. In scientific inquiry, what is communicating?

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24. Circle the letter of the sentence that explains why scientists describe their research in full when they communicate with other scientists.

- a. A scientific law requires scientists to pose questions.
- b. Other scientists need to be able to repeat a scientist's experiments.
- c. Scientists share their ideas in scientific journals.
- d. A large set of related observations can never be a scientific theory.

#### Scientific Theories and Laws (pp. 21–22)

25. What is a scientific theory?

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26. Is the following sentence true or false? Future testing can prove a scientific theory to be incorrect. \_\_\_\_\_

27. You can think of a(n) \_\_\_\_\_ as a rule of nature.

28. How is a scientific law unlike a scientific theory?

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