Name _____ Date _____ Class _____

What Is Science? ▪ *Guided Reading and Study*

Thinking Like a Scientist

This section describes the skills scientists use to learn about the world. The section also explains the attitudes that are important in science.

Use Target Reading Skills

Before you read, preview the red headings in your text. For each heading, write a what, how, *or* why *question in the left-hand column below. As you read, write answers to your questions in the right-hand column.*

Scientific Skills

Question	Answer
What does observing involve?	Observing involves . . .

Thinking Like a Scientist *(continued)*

Introduction

1. What are five skills scientists use to learn more about the world?

   _____   _____

   _____   _____

   _____

Observing

2. What is observing?

   _____

   _____

   _____

3. The senses a scientist uses in observing include sight, hearing, touch, taste, and _____.

4. In the spaces below, explain the differences between quantitative and qualitative observations.

Observations	
Quanititative Observations	**Qualitative Observations**

Inferring

5. What is inferring?

   _____

   _____

   _____

Name _____ Date _____ Class _____

What Is Science? ▪ *Guided Reading and Study*

6. Circle the letter of each item that is true about inferences.

   a. Inferences are based on reasoning from what you already know.
   b. Making an inference involves guessing.
   c. An inference is an interpretation of observations.
   d. People make inferences all the time.

Predicting

7. Making a forecast of what will happen in the future based on past experience or evidence is called _____.

8. How are inferring and predicting related?

   _____

   _____

   _____

Classifying

9. What is classifying?

   _____

   _____

   _____

10. Is the following sentence true or false? A drawback of classifying things is that objects and information stay disorganized. _____

Making Models

11. What does making models involve?

    _____

    _____

    _____

    _____

    _____

    _____

12. Circle the letter of each item that could be a model.

    a. map
    b. movie set
    c. computer-generated illustration
    d. notebook notes

What Is Science? ▪ *Guided Reading and Study*

Thinking Like a Scientist *(continued)*

13. Is the following sentence true or false? Models help people study things that cannot be observed directly. _____

14. Is the following sentence true or false? Some information about an object or process may be missing from a model. _____

Scientific Attitudes

15. What is science?

_____

_____

_____

16. What are five important attitudes that successful scientists possess?

_____   _____

_____   _____

_____

17. Circle the letter of the definition of skepticism.

    a. having an attitude of doubt

    b. being open-minded

    c. coming up with inventive ways to solve problems

    d. an eagerness to learn more about a topic

18. Is the following sentence true or false? Honesty is important when a scientist's results go against previous ideas. _____