

SECTION 1-3 REVIEW

SCIENTIFIC METHODS

VOCABULARY REVIEW Define the following terms.

1. data _____

2. sampling _____

3. dependent variable _____

4. independent variable _____

5. theory _____

MULTIPLE CHOICE Write the correct letter in the blank.

- _____ 1. A field biologist who studies the behavior of birds in a rain forest most likely collects data through
a. experimenting. b. modeling. c. observing. d. inferring.
- _____ 2. Constructing a graph is an example of
a. measuring. b. organizing data. c. observing. d. predicting.
- _____ 3. Of the following steps in a scientific investigation, the last to be done is usually
a. experimenting. c. producing a model.
b. observing. d. hypothesizing.
- _____ 4. A statement that explains observations and can be tested is called
a. a hypothesis. b. an inference. c. a theory. d. a model.
- _____ 5. A visual, verbal, or mathematical explanation that is supported by data is called
a. a hypothesis. b. an inference. c. a theory. d. a model.

SHORT ANSWER Answer the questions in the space provided.

1. What are quantitative data? Give two examples of quantitative data. _____

2. What two features must a sample have if it is to accurately represent a population? _____

3. How are a hypothesis, a prediction, and an experiment related? _____

4. What are some of the things scientists might do to analyze data? _____

5. **Critical Thinking** A scientist wanted to study the effect of a drug on the blood pressure of rats. She set up an experiment in which the experimental group consisted of rats that were injected with a salt solution containing the drug. What should the control group have consisted of?

What were the dependent and independent variables in her experiment? _____

STRUCTURES AND FUNCTIONS Examine the drawing of the owl. In each space below, provide an observation that would support the inference given or provide an inference that could be derived from the observation given.



Observations

The owl has wings.

Both of the owl's eyes face forward.

It is night.

Inferences

Owls live in trees.

Owls feed on mice.

Owls kill prey with their talons.

