

Skills Worksheet

Active Reading

Section: Scientific Methods

Read the passage below. Then answer the questions that follow.

Scientists make progress the same way a sculptor makes a marble statue—by chipping away at unwanted bits. If a **hypothesis** does not provide a reasonable explanation for what has been observed, the hypothesis is rejected. Scientists come up with new hypotheses, which they test with new **experiments**. If a new hypothesis is supported with one study or experiment, scientists may rerun their study and experiment several times. This helps them verify the conditions under which their hypothesis is supported. They also confer with other scientists. They read many scientific publications. They want to see if the results of their experiments are supported by the work of other scientists.

If a group of related hypotheses are very well supported and explain a great amount of data, scientists may put the hypotheses together in their formulation of a theory. A **theory** is a general explanation for a broad range of data. A theory differs from a hypothesis in scope. A hypothesis is a specific testable prediction for a limited set of conditions. A theory is a generally accepted principle that has been highly tested and that helps explain many observations.

SKILL: READING EFFECTIVELY

Read each question, and write your answer in the space provided.

1. What causes a hypothesis to be rejected?

2. What do scientists do after they reject a hypothesis?

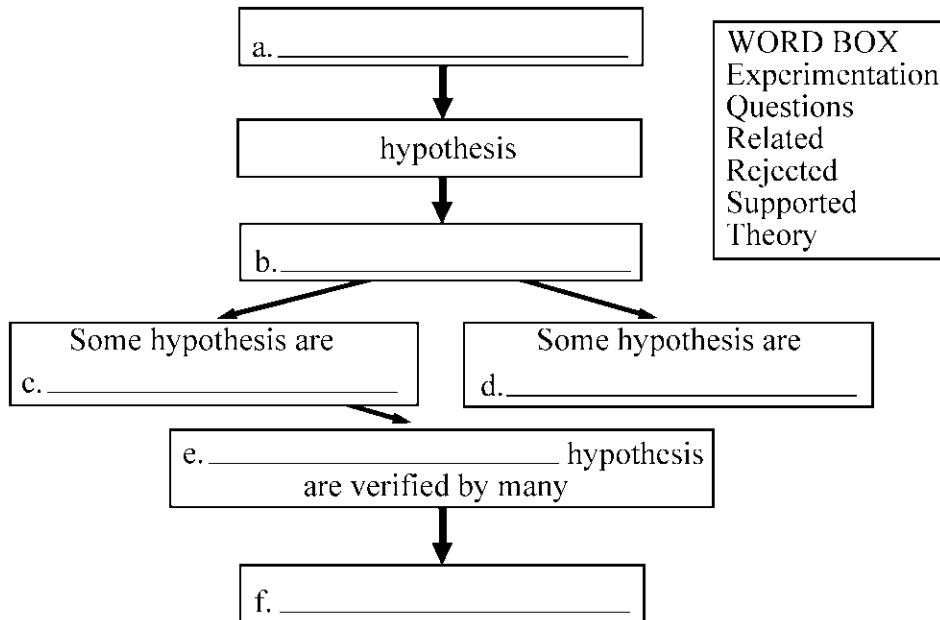
3. What is the main difference between a hypothesis and a theory?

Active Reading *continued*

SKILL: ORGANIZING INFORMATION

In the spaces provided, write the term or phrase from the Word Box that best completes each statement.

4. The graphic organizer below illustrates the making of a theory.



In the space provided, write the letter of the term or phrase that best answers the question.

- _____ 5. Why might a scientist rerun an experiment if the experiment is shown to support a hypothesis?
- a. to support a related hypothesis
 - b. to check to see if the experiment continues to support the hypothesis
 - c. to see if the results of his/her experiments are supported by the work of other scientists
 - d. to prove a theory to other scientists