

Section Quiz

Section: Science as a Process

MATCHING

In the space provided, write the letter of the definition that best matches the term or phrase.

1. hypothesis _____ a. an explanation of a phenomenon that reaches general acceptance
2. theory _____ b. a factor that changes as a result of manipulating other factors
3. independent variable _____ c. an explanation based on observation
4. observation _____ d. the process of using the senses to obtain information
5. dependent variable _____ e. a factor that is manipulated

MULTIPLE CHOICE

In the space provided, write the letter of the answer choice that best completes each statement or best answers each question.

6. Scientific theories are often based on _____
 - a. dependent variables
 - b. SI units
 - c. scientific laws
 - d. independent variables
7. Space exploration technology has been used to improve _____
 - a. computers, cars, and medical equipment
 - b. air quality standards
 - c. corporate profitability
 - d. the Alaskan pipeline
8. Which of the following is NOT part of scientific methods? _____
 - a. form a hypothesis
 - b. draw conclusions
 - c. ask a question
 - d. become a scientist
9. What distinguishes science from art, architecture, and philosophy? _____
 - a. Nothing distinguishes science from these other human endeavors.
 - b. Science exists to explain natural phenomena
 - c. They all explain natural phenomena
 - d. Science is more important than these other human endeavors
10. The process of evaluating research before publication is called _____
 - a. prosecution
 - b. persecution
 - c. peer pressure
 - d. peer review

Section Quiz

Section: What Is Earth Science?

MATCHING

In the space provided, write the letter of the definition that best matches the term or phrase.

1. astronomy _____ a. the scientific study of Earth's oceans
2. Earth science _____ b. the scientific study of the origin, history, and structure of Earth
3. geology _____ c. the scientific study of Earth's atmosphere
4. meteorology _____ d. the scientific study of the universe beyond Earth
5. oceanography _____ e. the scientific study of Earth and its universe

MULTIPLE CHOICE

In the space provided, write the letter of the answer choice that best completes each statement or best answers each question.

6. By understanding how natural forces affect the environment, Earth scientists can _____
 - a. better predict natural disasters
 - b. prevent natural disasters
 - c. change human nature
 - d. change the course of history
7. Around 260 BC, ancient Greeks _____
 - a. kept records of earthquakes
 - b. compiled a catalog of rocks and minerals
 - c. created accurate solar clocks
 - d. established modern science
8. Earth science assumes that the causes of natural phenomena _____
 - a. can never be fully understood
 - b. can be understood by studying supernatural phenomena
 - c. can be understood by studying ancient Greek culture
 - d. can be understood through careful observation
9. As early as 780 BC, Chinese scientists _____
 - a. recorded earthquakes
 - b. compiled a catalog of rocks and minerals
 - c. created accurate solar clocks
 - d. established modern science
10. The study of meteorology involves the study of _____
 - a. meteors
 - b. climate
 - c. outer space
 - d. animals

Critical Thinking continued

Critical Thinking continued

AGREE OR DISAGREE

REFINING CONCEPTS

Agree or disagree with the following statements, and support your answers.

13. It is easier to control dependent variables than independent variables in a scientific experiment.

14. The scientific methods used in geology and astronomy are the same.

15. The study of Earth science is an interesting intellectual exercise, but of little practical value.

16. If experimentation fails to support a hypothesis, the hypothesis should be altered or discarded.

17. The peer review process leads to mostly unnecessary criticism.

The statements below challenge you to refine your understanding of concepts covered in the chapter. Think carefully, and answer the questions that follow.

18. Why is interdisciplinary science important? Explain your answer.

19. Why was the invention of the microscope and the telescope important to science? Explain your answer.

20. Scientists have so far been unable to accurately predict the path of a hurricane or when and where an earthquake will occur. Why don't they reject the idea that all natural phenomena are predictable? Explain your answer.
