

**M O D E R N E A R T H S C I E N C E**

## Chapter 1

**Introduction to Earth Science****Review**

Choose the best response. Write the letter of that choice in the space provided.

- \_\_\_\_\_ 1. The study of the solid earth is called  
a. geology.      b. oceanography.      c. meteorology.      d. astronomy.
- \_\_\_\_\_ 2. The earth scientist most likely to study storms is  
a. a geologist.      b. an oceanographer.  
c. a meteorologist.      d. an astronomer.
- \_\_\_\_\_ 3. The study of the complex relationships between living things and their environment is called  
a. geology.      b. meteorology.      c. ecology.      d. astronomy.
- \_\_\_\_\_ 4. An example of a nonbiodegradable waste product is  
a. an apple core.      b. a plastic milk jug.  
c. a pile of rotting leaves.      d. an eggshell.
- \_\_\_\_\_ 5. Usually the first step in scientific problem solving is to  
a. form a hypothesis.      b. state the problem.  
c. gather information.      d. state a conclusion.
- \_\_\_\_\_ 6. A possible explanation for a scientific problem is called  
a. an experiment.      b. an observation.      c. a theory.      d. a hypothesis.
- \_\_\_\_\_ 7. The development of the meteorite-impact hypothesis began with the observation of  
a. blue shift in the spectra of stars.      b. red shift in the spectra of stars.  
c. background radiation.      d. iridium in earth rocks.
- \_\_\_\_\_ 8. A statement that consistently and correctly describes some natural phenomenon is a scientific  
a. hypothesis.      b. observation.      c. law.      d. control.
- \_\_\_\_\_ 9. The apparent change in the wavelengths of a moving energy source is called  
a. the big bang.      b. the Doppler effect.  
c. the spectrum.      d. background radiation.

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**Choose the best response. Write the letter of that choice in the space provided.**

- \_\_\_\_\_ **10.** Scientists have found that as a light source moves toward a stationary observer, the wavelengths of the light source appear
- a.** longer.           **b.** shorter.           **c.** higher.           **d.** lower.
- \_\_\_\_\_ **11.** The big bang theory states that the galaxies in the universe are
- a.** moving away from one another.   **b.** moving toward one another.  
          **c.** remaining stationary.           **d.** being bombarded by meteoroids.
- \_\_\_\_\_ **12.** Evidence for the big bang theory includes
- a.** iridium in earth rocks.           **b.** deformed quartz particles in earth rocks.  
          **c.** blue shift in the spectra of galaxies.   **d.** red shift in the spectra of galaxies.

**Critical Thinking**

**Read each question or statement and answer it in the space provided.**

**1.** A meteorite lands in your backyard. Which earth scientist would you call to study the meteorite? Why?

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**2.** A stream that feeds a small pond gradually dries up. How might this change affect the ecosystem of the pond?

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**Read each question or statement and answer it in the space provided.**

- 3. Some scientists have hypothesized that meteorites have periodically bombarded the earth, causing mass extinctions every 26 million years. How might this hypothesis be tested?

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- 4. Imagine that you are on another planet in a galaxy far from the earth. If you used a spectroscope to examine the spectrum of the sun, would you expect to find red shift, blue shift, or no shift at all? Why?

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- 5. According to the big bang theory, the original big bang took place about 15 billion years ago. How might scientists have been able to determine this?

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**Application**

**Read each question or statement and answer it in the space provided.**

- 1. You find a yellow rock and wonder if it is gold. How could you apply scientific methods to this problem?

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- 2. A scientist observes that each eruption of a volcano is preceded by a series of small earthquakes. The scientist then makes the following statement: Earthquakes cause volcanic eruptions. Is the scientist’s statement a hypothesis or a theory? Why?

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- 3. Construct a **concept map** using 10 of the new terms listed on page 18 of your textbook by making connections that illustrate the relationship among the terms. See page iv of this workbook for instructions on making concept maps.

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