| Critical Thinking *continued*

INTERPRETING OBSERVATIONS

Read the following passage, and answer the questions below.

Fossils provide important clues to help scientists tell the age of rock layers, and eventually to draw conclusions about the history of Earth. When most people think of fossils they think of dinosaurs, but dinosaurs are a relatively small part of the fossil record. Most fossils are of animals with shells, and microscopic remains of plants and animals. These fossils are found in sedimentary rock layers in many parts of the world.

Scientists developed an understanding of the meaning of fossils over a long period of time. In the late 18th and early 19th centuries, English and French scientists made observations of rocks and fossils. One major observation they made was that rocks of the same age on opposite sides of the English Channel contained the same types of fossils.

10. How do scientists use fossils to date rocks, and what are they able to learn from studying them? Explain your answer.

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11. Why do you think it took scientists a long time to arrive at their current understanding of fossils and the relationship fossils have to rock layers?

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12. Scientists discovered that the same fossils were in rock layers of the same age on opposite sides of the English Channel. Why was this finding significant? Explain your answer.

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AGREE OR DISAGREE

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.

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

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

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

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

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