

Changes Over Time ▪ Chapter Test**Changes Over Time****Multiple Choice**

Write the letter of the correct answer on the line at the left.

- _____ 1. Which of the following is considered a scientific theory?
 - a. radioactive dating
 - b. fossil record
 - c. evolution
 - d. overproduction
- _____ 2. A fossil made of hardened minerals in the shape of the original organism or one of its parts is called a(n)
 - a. mold.
 - b. variation.
 - c. amber.
 - d. cast.
- _____ 3. On the *Beagle*, Charles Darwin's job was to
 - a. study the formation of the Galápagos Islands.
 - b. learn about the living things he saw on the voyage.
 - c. make a map of the world.
 - d. find evidence of extinct species.
- _____ 4. Which of the following is a type of evidence used by scientists to determine evolutionary relationships?
 - a. the locations of islands in an ocean
 - b. the order of amino acids in a protein
 - c. the way in which a fossil formed
 - d. the food an organisms eats
- _____ 5. The technique that allows scientists to determine the actual age of a fossil is called
 - a. radioactive dating.
 - b. gradualism.
 - c. natural selection.
 - d. relative dating.
- _____ 6. An adaptation is any trait that helps an organism
 - a. survive and reproduce.
 - b. fight better.
 - c. overproduce variations.
 - d. become larger and stronger.
- _____ 7. Most fossils form when they become buried in
 - a. molds.
 - b. leaves, stems, and roots.
 - c. sediment.
 - d. radioactive elements.

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- _____ 8. One of the main ways by which new species form is through
- geographic isolation.
 - gradualism.
 - genetic similarities.
 - movement between islands.
- _____ 9. A species is a group of similar organisms that can
- successfully compete against other species.
 - overproduce helpful traits.
 - adapt to new environmental conditions.
 - mate and produce fertile offspring.
- _____ 10. Radioactive dating of fossils depends on the decay of
- radioactive elements.
 - dead organisms.
 - buried DNA.
 - extinct species.

Completion

Fill in the line to complete each statement.

11. A diagram that shows how different groups of organisms are related is called a(n) _____.
12. The _____ of a radioactive element is the time it takes for half of the atoms in a sample to decay.
13. Evolution occurs by means of a process called _____.
14. The author of *The Origin of Species* was _____.
15. A species is _____ if no members of that species are still alive.

True or False

If the statement is true, write true. If it is false, change the underlined word or words to make the statement true.

- _____ 16. Any difference between individuals of the same species is called a(n) variation.
- _____ 17. The millions of fossils that scientists have collected make up the fossil record.
- _____ 18. Only traits that are learned can be acted upon by natural selection.
- _____ 19. Related species have similar body structures because they inherited the same genes from a common offspring.
- _____ 20. When a hard part of an organism buried in sediment dissolves and leaves an empty space, the result is called a cast.

Changes Over Time ▪ *Chapter Test***Using Science Skills: Interpreting Diagrams**

Use the figure below to answer questions 21 and 22. Write your answers in the spaces provided.



21. What is this figure called?

22. How does the fossil record apply to this figure?

Essay

Answer each of the following in the spaces provided.

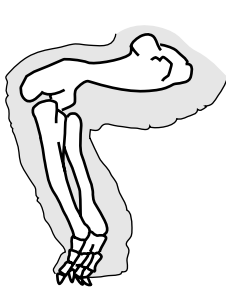
23. What factors affect natural selection?

24. Describe the process in which most fossils form.

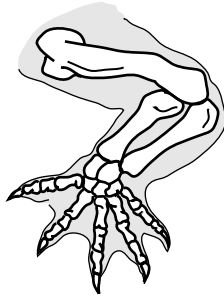
25. What do scientists use to determine evolutionary relationships among organisms?

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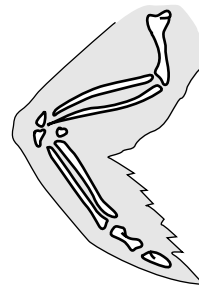
Use the diagrams below to answer questions 26 and 27. Write your answers on a separate sheet of paper.



Turtle



Alligator



Bird

- 26. Interpreting Diagrams** Identify one way in which the bones of these three animals are similar.
- 27. Inferring** What do these structures provide evidence of? What can you infer about turtles, alligators, and birds from these structures?

Essay

Answer each of the following on a separate sheet of paper.

- 28.** A continent pulls apart, and the parts become separated by an ocean. How could this event affect the species of organisms that populated the original continent?
- 29.** Scientists find a fossil of one type of fish in a rock layer near the bottom of a canyon. They find a fossil of another type of fish in a rock layer near the top of the canyon. Which fossil is probably older? Explain how you know, and identify the kind of dating you are using.
- 30.** Compare and contrast the theories of gradualism and punctuated equilibria.