

Skills Worksheet

Directed Reading

Section: Applying Darwin's Ideas

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

- _____ 1. The four steps or requirements of evolution by natural selection are
- few offspring, variation, selection, evolution.
 - overproduction, no variation, selection, adaptation.
 - overproduction, variation, inheritance, adaptation.
 - overproduction, variation, selection, adaptation.
- _____ 2. An adaptation is a(n)
- inherited trait that helps individuals reproduce and survive.
 - theory.
 - unit of evolution.
 - biological molecule.
- _____ 3. One hypothesized link between modern whales and hoofed mammals is
- fish.
 - Dronasaurus*.
 - Ambulocetus*.
 - rhea.
- _____ 4. Links between major classes of vertebrates have been established primarily by
- radiometric dating.
 - inherited traits.
 - the fossil record.
 - patterns of development.
- _____ 5. Patterns in biogeography show
- proof of the existence of every species that has ever lived.
 - that the environment can shape the evolution of organisms in the same way in different places.
 - intermediate forms between groups of species.
 - that species do not change over time on different continents.
- _____ 6. Which of the following do scientists use as evidence to explain Darwin's ideas?
- the fossil record
 - biochemical molecules
 - embryological data
 - All of the above

Directed Reading *continued*

In the space provided, write the letter of the description that best matches each term.

- | | |
|--------------------------------|---|
| _____ 7. hemoglobin proteins | a. all have a tail at some time in development |
| _____ 8. homologous structures | b. are made up of very similar sequences in humans and gorillas |
| _____ 9. vertebrate embryos | c. structures that share a common ancestry |

Complete each statement by writing the correct term in the space provided.

10. Species that diverged recently have _____ genetic differences than those species that are not closely related.
11. There is (are) _____ difference(s) between the amino acid sequences of the hemoglobin in humans and the hemoglobin in gorillas.
12. There is (are) _____ difference(s) between the amino acid sequences of the hemoglobin in humans and the hemoglobin in frogs.
13. There is (are) _____ difference(s) between the amino acid sequences of the hemoglobin in humans and the hemoglobin in rhesus monkeys.

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

14. How do scientists estimate the number of changes that have taken place in a gene or protein since two species diverged from a common ancestor?

15. What are three major strengths of Darwin's work?
