

# Ch 15. Darwin's Theory of Evolution. Biology. Landis

Who are you? \_\_\_\_\_

## Section 15–1 The Puzzle of Life's Diversity (pages 369–372)

This section outlines Charles Darwin's contribution to science. It also describes the pattern of diversity he observed among organisms of the Galápagos Islands.

### Introduction (page 369)

1. The process by which modern organisms have descended from ancient organisms is called
2. A well-supported explanation of phenomena that have occurred in the natural world is a(an)

### Voyage of the *Beagle* (pages 369–370)

3. Circle the letter of each sentence that is true about Charles Darwin.
  - a. He was born in 1809.
  - b. He was an English naturalist.
  - c. He was 42 when he began the voyage on the *Beagle*.
  - d. The voyage lasted 5 years and took him around the world.
4. Label the Galápagos Islands on the map below.



### Darwin's Observations (pages 370–372)

5. Circle the letter of each observation that Darwin made.
  - a. An enormous number of species inhabit Earth.
  - b. Many organisms seem to be poorly suited to their environment.
  - c. The same sorts of animals are always found in the same ecosystems in different parts of the world.
  - d. Some species that lived in the past no longer live on Earth.
6. The preserved remains of ancient organisms are called

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7. As Darwin studied fossils, what new questions arose?

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8. Of all the *Beagle's* ports of call, the one that influenced Darwin the most was

9. Circle the letter of each choice that is true the port of call in question #8

- a. The islands are far apart.
- b. The smallest, lowest islands are hot and wet.
- c. The higher islands have more rainfall.
- d. All the islands have the same amount of vegetation.

10. How did Darwin explain differences in shell shape of tortoises from Hood Island and Isabela Island?

12. Darwin observed that small brown birds on the Galápagos Islands differed in the shape of their

### The Journey Home (page 372)

13. After he returned to England, what hypothesis did Darwin develop to explain his findings?

## Section 15–2 Ideas That Shaped Darwin's Thinking (pages 373–377)

*This section describes the theories of other scientists who influenced Darwin, including Hutton, Lyell, Lamarck, and Malthus.*

### An Ancient, Changing Earth (pages 374–375)

14. In what two ways did an understanding of geology influence Darwin?

### Lamarck's Theory of Evolution (page 376)

15. How did Lamarck propose that species change over time?

### Population Growth (page 377)

16. Circle the letter of each sentence that is true about Thomas Malthus.

- a. He was an important influence on Darwin.
- b. He was an English naturalist.
- c. He believed that war, famine, and disease limit the growth of

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populations.

d. His views were influenced by conditions in twentieth-century England.

17. Is the following sentence true or false? The overwhelming majority of a species' offspring survive.

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## Section 15–3 Darwin Presents His Case (pages 378–386)

*This section explains the concepts of artificial selection, natural selection, and fitness. It also describes evidence for evolution.*

### Publication of *On the Origin of Species* (pages 378–379)

18. When Darwin returned to England, how long did he wait to publish his theory?

19. The naturalist whose essay gave Darwin an incentive to publish his own work was

### Natural Variation and Artificial Selection (page 379)

20. Differences among individuals of a species are referred to as

21. Circle the letter of each sentence that is true about artificial selection.

- a. It is also called selective breeding.
- b. It occurs when humans select natural variations they find useful.
- c. It produces organisms that look very different from their ancestors.
- d. It is no longer used today.

### Evolution by Natural Selection (pages 380–382)

22. What was Darwin's greatest contribution?

23. What does the phrase *struggle for existence* mean?

*Match each term with its definition.*

#### Term

24. fitness

25. adaptation

26. natural selection

#### Definition

- a. Any inherited characteristic that increases an organism's chance of survival
- b. Survival of the fittest
- c. The ability of an individual to survive and reproduce in its specific environment

27. Is the following sentence true or false? Adaptations can be physical characteristics but not more complex features such as behavior.

28. Explain what Darwin meant by the phrase *survival of the fittest*.

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29. Circle the letter of each sentence that is true about natural selection.

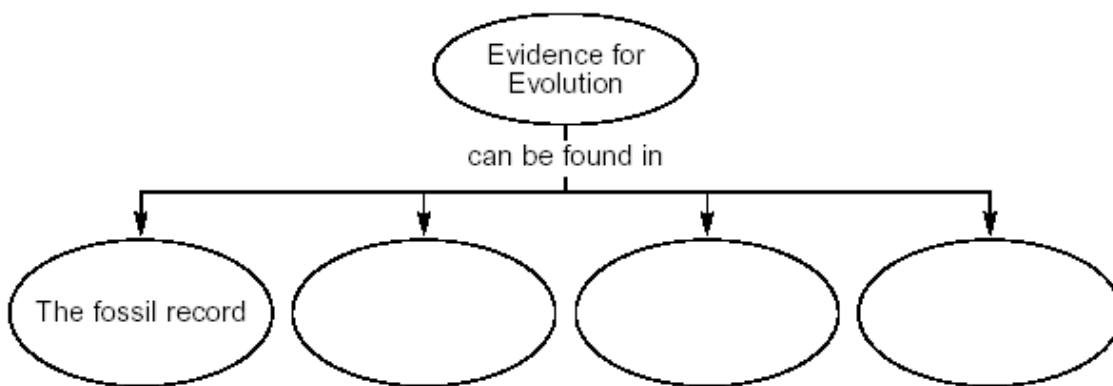
- a. It selects traits that increase fitness
- b. It takes place without human control
- c. It can be observed directly in nature
- d. It leads to an increase in a species' fitness

30. The principle that living species descend, with changes, from other species over time is referred to as

31. Is the following sentence true or false? Descent with modification implies that all living organisms are related to one another.

32. The principle that all species were derived from common ancestors is known as

33. Complete the concept map.



34. How do fossils that formed in different rock layers provide evidence of evolution?

35. How did Darwin explain the existence of similar but unrelated species?

36. Structures that have different mature forms but develop from the same embryonic tissues are called

37. Organs that are so reduced in size that they are just vestiges, or traces, of homologous organs in other species are called

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## **Summary of Darwin's Theory (page 386)**

38. What is the status of Darwin's theory today?

39. According to Darwin's theory, what happens to individuals whose characteristics are not well suited to their environment?

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