

Chapter 15

The Theory of Evolution

Reinforcement and Study Guide

Section 15.1 Natural Selection and the Evidence for Evolution

In your textbook, read about Charles Darwin and natural selection.

For each statement, write true or false.

- _____ 1. H.M.S. *Beagle*, upon which Charles Darwin served as naturalist, set sail on a collecting and mapping expedition in 1831.
- _____ 2. The environments that Darwin studied exhibited little biological diversity.
- _____ 3. By careful anatomical study, Darwin found that the many species of plants and animals on the Galapagos Islands were unique and bore no relation to species seen in other parts of the world.
- _____ 4. The tortoises of the Galapagos Islands are among the largest on Earth.
- _____ 5. After returning to England, Darwin studied his collections for 10 years.
- _____ 6. Darwin named the process by which evolution proceeds *artificial selection*.

You are a naturalist who traveled to the Galapagos Islands. Below are excerpts from field notes. Next to each set of notes, write a heading. Use these choices: Overproduction of Offspring, Natural Selection, Struggle for Existence, Variation.

7. **Field Notes**

Female finches found on the Galapagos Islands lay enormous numbers of eggs.

8. **Field Notes**

These finches compete for a particular species of insect that inhabits the small holes found in tree bark.

9. **Field Notes**

Some finches' beaks are long, some are short. The finches with long beaks are better adapted to remove the insects from the bark.

10. **Field Notes**

The finches with the long beaks survive and produce greater numbers of offspring with long beaks.

Chapter
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The Theory of Evolution, *continued*
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Section 15.1 Natural Selection and the Evidence for Evolution, *continued*

In your textbook, read about natural selection and adaptations.

Identify the type of structural adaptation that the statement describes. If the statement applies to both, write **both**. Use these choices: **mimicry, camouflage, both**.

- _____ **11.** Enable(s) an organism to blend in with its surroundings
- _____ **12.** Provide(s) protection for an organism by copying the appearance of another species
- _____ **13.** The coloration of a flounder that allows the fish to avoid predators
- _____ **14.** Involve(s) changes to the external appearance of an organism
- _____ **15.** A flower that looks like a female bee

In your textbook, read about evidence for evolution.

Complete the chart by checking the kind of evidence described.

Evidence	Type of Evidence				
	Homologous Structure	Analogous Structure	Vestigial Structure	Embryological Development	Genetic Comparisons
16. A modified structure seen among different groups of descendants					
17. In the earliest stages of development, a tail and gill slits can be seen in fish, birds, rabbits, and mammals.					
18. Exemplified by forelimbs of bats, penguins, lizards, and monkeys					
19. The forelimbs of flightless birds					
20. DNA and RNA comparisons may lead to evolutionary trees.					
21. Bird and butterfly wings have same function but different structures					
22. A body structure reduced in function but may have been used in an ancestor					