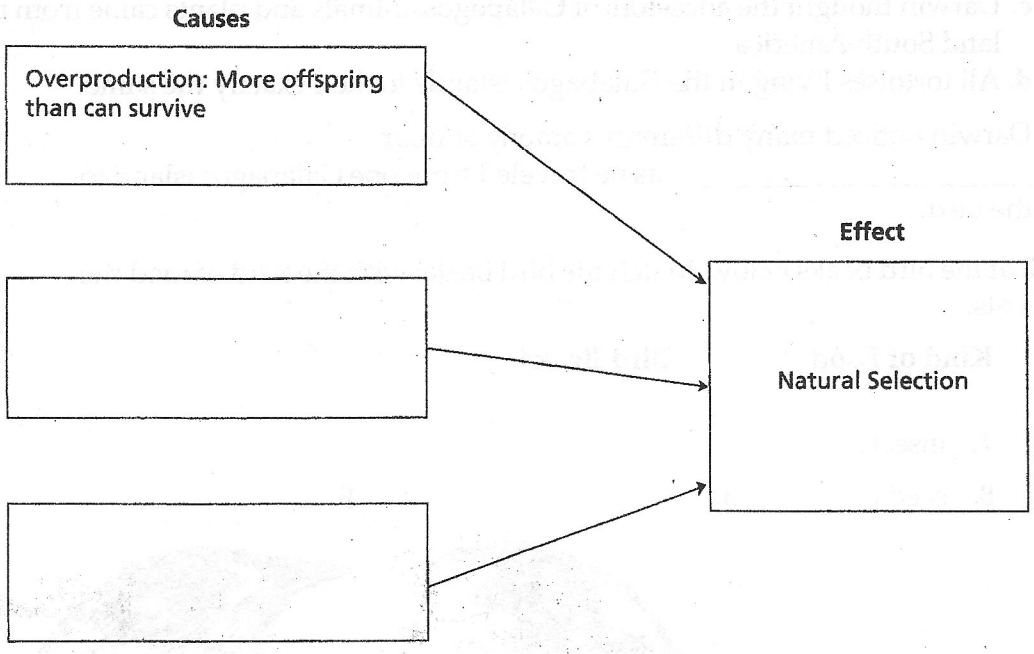
Name _____ Date _____ Class _____

Darwin's Theory (pp. 172–179)

This section discusses Charles Darwin and his theories of evolution, which are based on what he saw during his trip around the world.

Use Target Reading Skills

In the graphic organizer, identify factors that cause natural selection.



Darwin's Observations (p. 173)

1. Is the following sentence true or false? Charles Darwin was not surprised by the variety of living things he saw on his voyage around the world. _____
2. A group of similar organisms that can mate with each other and produce fertile offspring is called a(n) _____.
3. A(n) _____ is the preserved remains or traces of an organism that lived in the past.
4. Is the following sentence true or false? Darwin observed the greatest diversity of organisms on the Galápagos Islands.
   _____

Darwin's Theory *(continued)*

Galápagos Organisms (pp. 174–175)

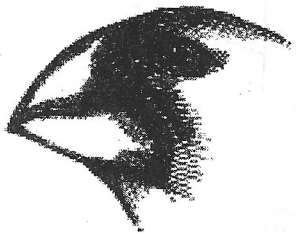
5. Circle the letter of each sentence that is true about Darwin's observations.
   a. Many Galápagos organisms were similar to organisms on mainland South America.
   b. Iguanas on the Galápagos Islands had small claws for climbing trees.
   c. Darwin thought the ancestors of Galápagos animals and plants came from mainland South America.
   d. All tortoises living in the Galápagos Islands looked exactly the same.

6. Darwin noticed many differences among similar _____ as he traveled from one Galápagos island to the next.

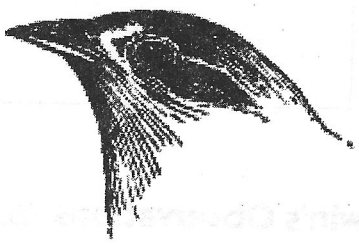
Look at the bird beaks below. Match the bird beaks with the kind of food the bird eats.

Kind of Food	Bird Beaks
____ 7. insects	
____ 8. seeds	

a.



b.



9. A trait that helps an organism survive and reproduce is a(n) _____.

Evolution (p. 176)

10. Circle the letter of each sentence that is true about Darwin's conclusions.
    a. Darwin understood immediately why Galápagos organisms had many different adaptations.
    b. Darwin thought that Galápagos organisms gradually changed over many generations.
    c. Darwin believed that evolution had occurred on the Galápagos Islands.
    d. Selective breeding helped Darwin understand how evolution might occur.

11. Circle the letter of the term that means a well-tested concept that explains many observations.
    a. idea
    b. evolution
    c. scientific theory
    d. hypothesis

Natural Selection (pp. 177–179)

12. In his book *The Origin of Species,* Darwin explained that evolution occurs by means of _____.

13. Is the following sentence true or false? Individuals with variations that make them better adapted to their environment will not survive.
    _____

Match the factors that affect the process of natural selection with their definitions.

	Definitions	Factors
____	14. Effect caused by limited food and other resources.	a. overproduction
____	15. Differences between individuals of the same species	b. competition
____	16. Effect caused by species producing more offspring than can survive.	c. variations

17. Is the following sentence true or false? Only traits that are controlled by genes can be acted upon by natural selection.
    _____

18. Is the following sentence true or false? Darwin knew all about genes and mutations. _____

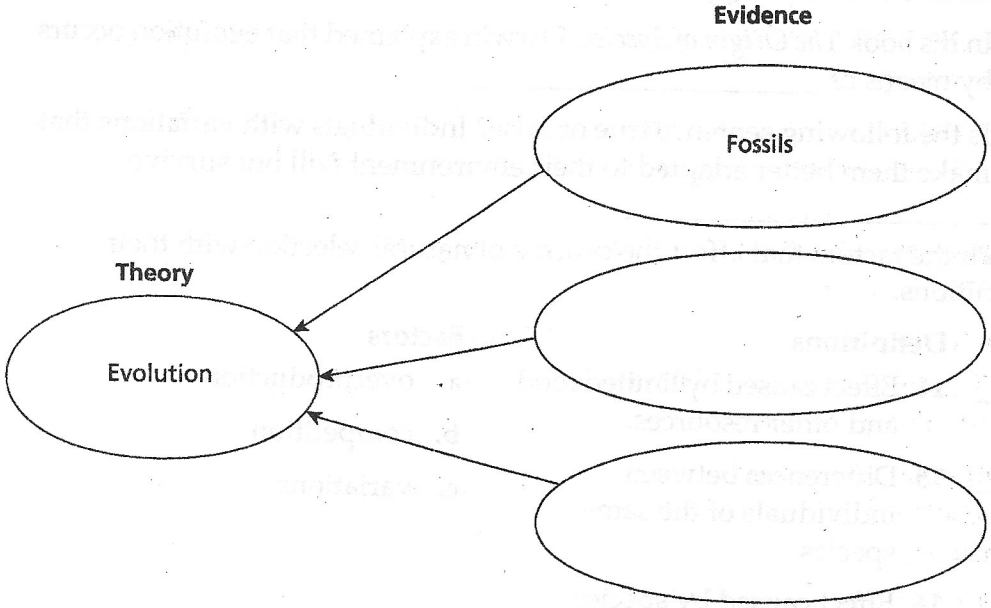
Name _____ Date _____ Class _____

Evidence of Evolution (pp. 182–187)

This section tells how scientists decide which living things are related.

Use Target Reading Skills

As you read, identify the evidence that supports the theory of evolution. Write the evidence in the graphic organizer.



Interpreting the Evidence (pp. 183–184)

1. Similar body structures that related species have inherited from a common ancestor are called _____.
2. What similarities in development lead scientists to infer that opossums, chickens, salamanders, and fish share a common ancestor?

_____

_____

_____

3. Why do scientists classify fish, amphibians, reptiles, birds, and mammals together in one group?

_____

_____

_____

Inferring Species Relationships (pp. 185–186)

4. Is the following sentence true or false? The more closely related species are, the more similar their DNA sequences. _____

5. What have scientists learned about the elephant shrew based on DNA evidence?

_____

_____

_____

6. Circle the letter of each sentence that is true about evolutionary relationships of organisms.
   a. DNA comparisons show that dogs are more similar to coyotes than to wolves.
   b. Scientists can compare protein structure to determine how closely two species are related.
   c. A branching tree shows how scientists think different groups of organisms are related.
   d. DNA evidence shows that giant pandas are more closely related to raccoons than to bears.

How Do New Species Form? (pp. 186–187)

7. Is the following sentence true or false? When a group of individuals remains isolated from the rest of its species long enough to evolve different traits, a new species can form. _____

8. What are three ways that isolation can occur?

_____

_____

_____

Name _____ Date _____ Class _____

The Fossil Record (pp. 189–197)

This section explains what fossils are and how fossils give clues about evolution. It also describes the Geologic Time Scale, a calendar of Earth's history.

Use Target Reading Skills

After you read the section, reread the paragraphs that contain definitions of key terms. Use all the information you have learned to write a definition of each key term in your own words. Write your definitions on a separate sheet of paper.

How Do Fossils Form? (p. 190)

1. Circle the letter of each item that can form a fossil.
   a. bone
   b. shell
   c. stone
2. Is the following sentence true or false? Most fossils form when organisms that die become buried in sediments.
   _____
3. Particles of soil and rock are called _____.
4. Remains of organisms that are actually changed to rock are called _____ fossils.
5. Circle the letter of each sentence that is true about molds and casts.
   a. A mold forms when hard parts of an organism buried by sediments are gradually dissolved.
   b. A cast is a hollow space in sediment in the shape of an organism.
   c. A mold that becomes filled in with hardened materials forms a cast.
   d. A cast is a copy of the shape of an organism.
6. Is the following sentence true or false? The formation of any fossil is a common event. _____

Determining a Fossil's Age (pp. 191–192)

7. Is the following sentence true or false? By determining the age of fossils, scientists can reconstruct the history of life on Earth.

   _____

8. In what two ways can scientists determine the ages of fossils?

   a._____ b._____

9. In layers of sedimentary rock, the _____ layer is usually at the bottom. Each higher layer is _____ than the layers below it.

10. Is the following sentence true or false? Relative dating can only help scientists determine whether one fossil is older than another.

    _____

11. Scientists use unstable elements that decay, called _____ elements, to determine the actual age of a fossil.

12. What is the half-life of a radioactive element?

    _____

    _____

13. Potassium-40 breaks down into _____ over time.

14. How do scientists use radioactive dating to determine the age of a fossil?

    _____

    _____

    _____

    _____

What Do Fossils Reveal? (pp. 192–195)

15. The millions of fossils that scientists have collected are called the _____.

16. Is the following sentence true or false? The remains of all organisms have become fossils. _____

17. How have scientists learned about extinct species?

    _____

    _____

The Fossil Record *(continued)*

18. Circle the letter of the largest span of time in the Geologic Time Scale.
    a. Precambrian Time
    b. eras
    c. periods
    d. years

19. Look at the illustration of the Geologic Time Scale in your text. What are the names of the three eras?

_____

_____

Unanswered Questions (pp. 196–197)

20. What are mass extinctions?

_____

_____

21. Complete the table below about the two theories of evolution.

How Fast Does Evolution Occur?		
Theory of Evolution	**What the Theory Says**	**Intermediate Forms of Species?**
Gradualism		
Punctuated Equilibria		