

## Section 17-4 Patterns of Evolution (pages 435-440)



### Key Concept

- What are six important patterns of macroevolution?

### Introduction (page 435)

1. The large-scale evolutionary changes that take place over long periods of time are referred to as \_\_\_\_\_ .
2. What are six patterns of macroevolution?
  - a. \_\_\_\_\_
  - b. \_\_\_\_\_
  - c. \_\_\_\_\_
  - d. \_\_\_\_\_
  - e. \_\_\_\_\_
  - f. \_\_\_\_\_

### Extinction (page 435)

3. What are possible causes of mass extinctions?  
\_\_\_\_\_  
\_\_\_\_\_
4. What effects have mass extinctions had on the history of life? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

### Adaptive Radiation (page 436)

5. The process of a single species or a small group of species evolving into diverse forms that live in different ways is called \_\_\_\_\_ .
6. What led to the adaptive radiation of mammals? \_\_\_\_\_  
\_\_\_\_\_

### Convergent Evolution (pages 436-437)

7. The process by which unrelated organisms come to resemble one another is called \_\_\_\_\_ .
8. Circle the letter of each choice that is an example of convergent evolution.
  - a. Bird's wing and fish's fin
  - b. Shark's fin and dolphin's limb
  - c. Human's arm and bird's wing
  - d. Human's leg and dolphin's limb

### **Coevolution (pages 437-438)**

9. The process by which two species evolve in response to changes in each other over time is called \_\_\_\_\_ .
10. How have plants and plant-eating insects coevolved? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

### **Punctuated Equilibrium (page 439)**

11. The idea that evolution occurs at a slow, steady rate is called \_\_\_\_\_ .
12. What are some reasons rapid evolution may occur after long periods of equilibrium?  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
13. The pattern of long, stable periods interrupted by brief periods of more rapid change is called \_\_\_\_\_ .
14. Is the following sentence true or false? Evolution has often proceeded at different rates for different organisms. \_\_\_\_\_

### **Developmental Genes and Body Plans (page 440)**

15. How can hox genes help reveal how evolution occurred? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
16. Is the following sentence true or false? Changes in the timing of genetic control during embryonic development can contribute to the variation involved in natural selection.  
\_\_\_\_\_