

## Section 16-3 The Process of Speciation

(pages 404-410)



### Key Concepts

- What factors are involved in the formation of new species?
- Describe the process of speciation in the Galápagos finches.

### Introduction (page 404)

1. What is speciation? \_\_\_\_\_

### Isolating Mechanisms (pages 404-405)

2. Is the following sentence true or false? Individuals in different species can have the same gene pool. \_\_\_\_\_
3. What does it mean for two species to be reproductively isolated from each other?  
\_\_\_\_\_  
\_\_\_\_\_

4. What must happen in order for new species to evolve? \_\_\_\_\_  
\_\_\_\_\_

5. List three ways that reproductive isolation occurs.

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_

6. When does behavioral isolation occur? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

7. Is the following sentence true or false? Eastern and Western meadowlarks are an example of behavioral isolation. \_\_\_\_\_

8. When does geographic isolation occur? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

9. Abert and Kaibab squirrels in the Southwest are an example of \_\_\_\_\_ isolation.

10. Is the following sentence true or false? Geographic barriers guarantee the formation of new species. \_\_\_\_\_

11. What is an example of temporal isolation? \_\_\_\_\_  
\_\_\_\_\_

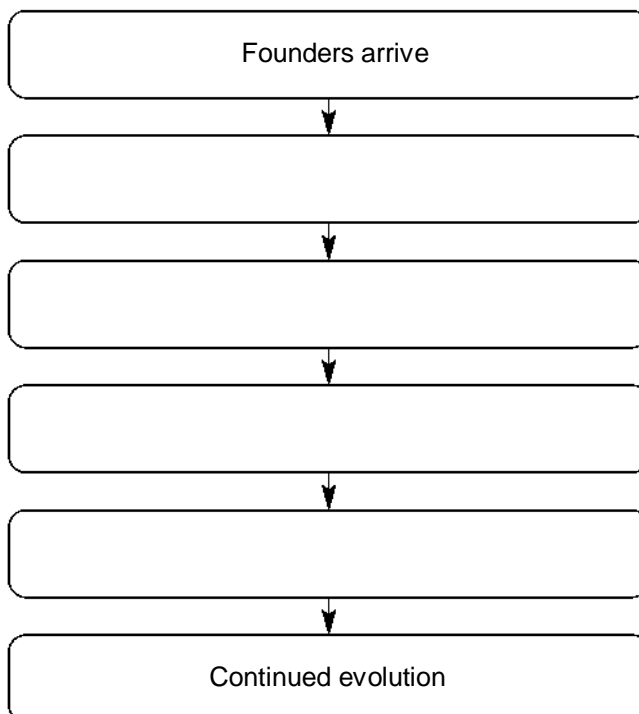
### Testing Natural Selection in Nature (pages 406-407)

12. Is the following sentence true or false? The basic mechanisms of evolutionary change cannot be observed in nature. \_\_\_\_\_

13. Circle the letter of each hypothesis about the evolution of Galápagos finches that was tested by the Grants.
- a. The finches' beak size and shape has enough inheritable variation to provide raw material for natural selection.
  - b. The different finch species are the descendants of a common mainland ancestor.
  - c. Differences in the finches' beak size and shape produce differences in fitness that cause natural selection to occur.
  - d. The evolution of the finches is proceeding slowly and gradually.

### Speciation in Darwin's Finches (pages 408-409)

14. Complete the flowchart to show how speciation probably occurred in the Galápagos finches.



15. How could differences in beak size lead to reproductive isolation? \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

### Studying Evolution Since Darwin (page 410)

16. Why is the study of evolution important? \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_