

## Section 16–3 The Process of Speciation (pages 404–410)



**TEKS FOCUS:** 3A Analyze hypotheses and theories; 3C Impact of research on scientific thought; 3F Contributions of scientists; 7B Results of natural selection in speciation, diversity, behavior

*This section explains how species evolve and describes the process of speciation in the Galápagos Islands.*

### 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? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

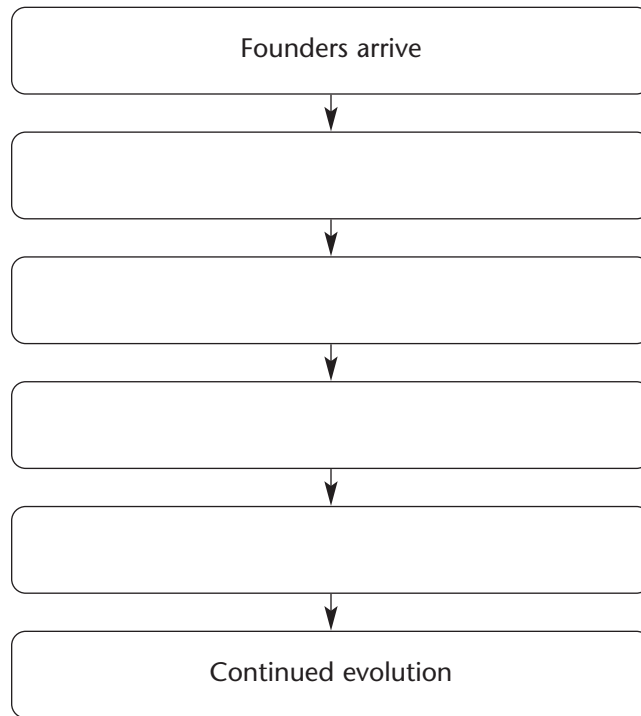
### Testing Natural Selection in Nature (pages 406–407)

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 408–410)

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? \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_