

Section 15-2 Ideas That Shaped Darwin's Thinking (pages 373-377)



Key Concepts

- How did Hutton and Lyell describe geological change?
- According to Lamarck, how did species evolve?
- What was Malthus's theory of population growth?

An Ancient, Changing Earth (pages 374-375)

1. Two scientists who helped Darwin and others recognize how old Earth is were _____ and _____.
2. Circle the letter of each idea that was proposed by James Hutton.
 - a. Earth is a few thousand years old.
 - b. Layers of rock are moved by forces beneath Earth's surface.
 - c. Most geological processes operate extremely slowly.
 - d. The processes that changed Earth in the past are different from the processes that operate in the present.
3. Circle the letter of each sentence that is true about Lyell's work.
 - a. His book, *Principles of Geology*, was published after Darwin returned from his voyage.
 - b. His work explained how awesome geological features could be built up or torn down over long periods of time.
 - c. His publications helped Darwin appreciate the significance of the geological phenomena that he had observed.
 - d. He stressed that scientists must explain past events in terms of processes that they can actually observe.
4. In what two ways did an understanding of geology influence Darwin? _____

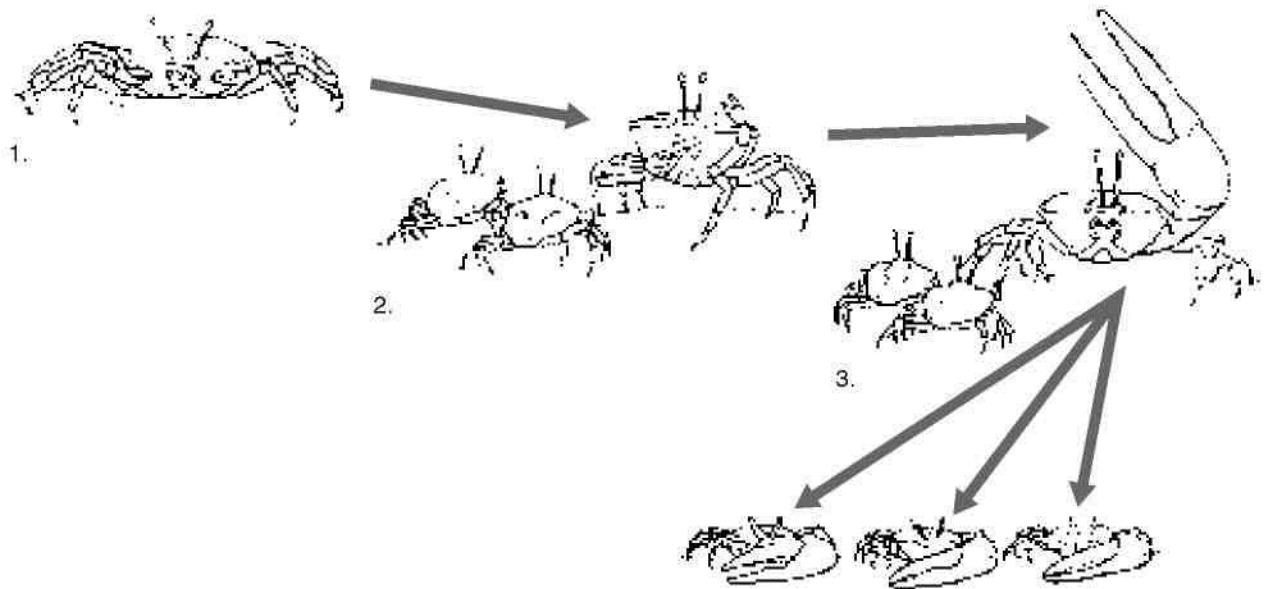
Lamarck's Evolution Hypotheses (page 376)

5. Is the following sentence true or false? Lamarck was among the first scientists to recognize that living things have changed over time. _____
6. Is the following sentence true or false? Lamarck proposed that all organisms have an innate tendency toward complexity and perfection. _____

7. How did Lamarck propose that species change over time? _____

8. How did Lamarck pave the way for the work of later biologists? _____

9. Which step in the diagram below shows the inheritance of acquired traits as proposed by Lamarck? _____



Population Growth (page 377)

10. Circle the letter of each sentence that is true about Thomas Malthus.

- a. He was an important influence on Darwin.
- b. He was an English naturalist.
- c. He believed that war, famine, and disease limit the growth of populations.
- d. His views were influenced by conditions in twentieth-century England.

11. Is the following sentence true or false? The overwhelming majority of a species' offspring survive. _____