

**GRADE 12 BIOLOGY
UNIT C - EVOLUTION
WORKSHEET**

Name: _____

Date: _____

Section 16.2 - Ideas That Shaped Darwin's Thinking

An Ancient, Changing Earth

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. **Explain.** In what two ways did an understanding of geology influence Darwin?

Lamarck's Evolution Hypotheses

5. Is the following sentence true or false? Lamarck was among the first scientists to recognize that living things have changed over time. (Circle one: T / F)
6. Is the following sentence true or false? Lamarck proposed that all organisms have an innate tendency toward complexity and perfection. (Circle one: T / F)
7. **Explain.** How did Lamarck propose that species change over time?
8. **Explain.** Even though hypothesis was wrong, how did Lamarck pave the way for the work of later biologists?
9. **Explain.** According to Lamarck's hypothesis an acquired trait in an organism's lifetime, like a crab losing a claw, is passed on to all the crab's offspring. Just like an individual giraffe might stretch its neck during its lifetime so that its descents will have longer necks. Explain why inheritance of acquired traits like this does not seem to make sense now.

Population Growth

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. (Circle one: T / F)