

Biological Evolution Standard 1 & 2 Study Guide

Standard 1: Explain how our understanding of biological evolution has changed over time with new scientific research and discoveries

Science is based on three characteristics. They are:

1. _____
2. _____
3. _____

Describe the following scientists contributions to our understanding of biological evolution:

- Robert Malthus: _____

- Charles Lyell: _____

- Charles Darwin: _____

- Jean Baptise de Lamarck: _____

- Alfred Wallace: _____

- Hutton: _____

Both Lamarck and Darwin suggested ways that organisms inherit traits. **State** their theories **and explain** the difference between their theories.

Using absolute and relative dating techniques, data suggests the earth is _____
_____ years old (don't forget units). The _____

suggests that older rock layers and fossils are found on the bottom and younger on the top. The age of fossil samples can be calculated using _____ dating. The _____ describes the relationships and timing of events during the history of earth. Three examples of fossils include _____, _____, and _____.

Standard 2: Identify and explain different mechanisms (processes) that contribute to species changing over time.

Explain the following terms in relation to biological evolution:

- Fitness: _____

- Natural Selection: _____

- Genetic Variation: _____

- Competition: _____

- Adaptation: _____

- Competition: _____

Due to selection, populations are always changing. In polygenic traits, a _____ shows the distribution or range of phenotypes for the trait. If one extreme of the trait is best fit for the environment this represents _____ selection; if both extremes of the trait are best fit for the environment this represents _____ selection; if the middle or average form of the trait is best fit for the environment this represents _____ selection. _____ Selection occurs when an individual selects a mate based on specific trait characteristics. For example, male peacocks have brightly colored feathers to attract mates.

Over time, competition, genetic variation within population, over production of offspring, adaptation, and natural selection can cause a _____ to evolve.

_____ Evolve, _____ do not.

Types of Adaptations:

Explain adaptation: _____

Explain the three types of adaptations and give an example of each:

- **Behavioral:** _____

a. Example: _____

- **Structural:** _____

a. Example: _____

- **Physiological:** _____

a. Example: _____