Biological Evolution | Science

June 22, 2015 thetasctest

As you are preparing to take the TASC Test Assessing Secondary Completion™ Science subtest, you may be asking yourself “what is biological evolution?” Evolution helps us understand the history of life. By definition, *biological evolution is any genetic change in a population, whether large or small, that is inherited over several generations.* These changes have to occur on the genetic level of a population and be passed on from one generation to the next to be considered an instance of evolution, according to About.com.

In the high emphasis topic, it is important to discuss two entities: unity and diversity.

- **Unity** is explained as all living things share the same fundamental characteristics because they are descended from a common ancestor.
- **Diversity** is explained as all populations adapt to their varying habitats.

Biological evolution holds the idea that all of life is connected and can be traced back to one common ancestor. This is called macroevolution.

Berkeley.edu states that “biological evolution is not simply a matter of change over time. Lots of things change over time: trees lose their leaves, mountain ranges rise and erode, but they aren't examples of biological evolution because they don't involve descent through genetic inheritance.”

“In order to understand evolution, it is necessary to view populations as a collection of individuals, each harboring a different set of traits. A single organism is never typical of an entire population unless there is no variation within that population. Individual organisms do not evolve, they retain the same genes throughout their life,” according to Talkorigins.org.

When a population is evolving, the ratio of different genetic types is changing. However, each individual organism within a population does not change.

For example, this can be explained by looking at the frequency of black moths. When the population increased, the moths did not turn from light to gray to dark all together.

The process of evolution can be summarized in three ways: genes mutate, individuals are selected, and populations evolve.