

Vocabulary: Evolution: Mutation and Selection

Vocabulary

- Adaptation – a trait that is beneficial to an organism.
- Allele – one of two or more forms that a gene could take.
- Chromosome – a rod-shaped structure within a cell's nucleus that is composed of DNA and proteins.
 - Chromosomes are passed from one generation to the next.
- Evolution – change in the inherited traits of a population of organisms that occurs over many generations.
 - *Misconception alert:* Evolution refers to changes in populations of organisms over time, but does not imply *how* these changes have taken place. Natural selection is considered by most biologists to be the primary mechanism of evolution.
- Fitness – a measure of how well an organism can survive and reproduce in a given environment.
- Gene – a segment of DNA that determines or helps to determine a trait.
 - Genes are located on chromosomes.
- Genotype – the genetic makeup of an organism.
- Mutation – a change in a gene.
 - Mutations may be beneficial, harmful, or neutral to the organism.
 - Mutations tend to occur at a steady rate in nature.
- Natural selection – the process by which favorable inherited traits become more common over time.
 - Natural selection is the primary mechanism of biological evolution.
 - Natural selection assumes the following: (1) More organisms are born than can survive and reproduce. (2) Organisms compete for limited resources and survival. (3) There are variations between organisms, and these variations can be inherited. (4) Some variations make an organism more likely to survive and reproduce. Over time, favorable variations will spread throughout a population, while unfavorable variations become less frequent.
- Phenotype – the physical appearance of an organism.
- Trait – a characteristic of an organism.
 - Examples of traits include skin color, eye color, hair, allergies, and many others.