

Vocabulary: Evolution: Natural and Artificial Selection

Vocabulary

- Artificial selection – the selection by humans of animals, plants, or other organisms to breed together.
 - Artificial selection is also known as *selective breeding*.
 - Breeders use artificial selection to ensure the continuation of desirable traits and to develop new varieties.
- Breed – a variety of organism created by artificial selection.
 - Breeds are not considered separate species because organisms of different breeds can mate and produce fertile offspring.
- Chromosome – a rod-shaped or circular structure within a cell 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 – describes how well an organism can survive and reproduce in an environment.
- 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.