

Chapter 4 Section 2 Notes

Evolution – occurs when the genetic characteristics of a population change over time

Adaptation – trait that increases an organism's chance of survival

Ex) Dark fur color helps mice hide on volcanic lava flows

Adaptations

- Give organisms an advantage in certain environments
- Increase an organism's chance of reproducing
- Increase an organism's chance of survival
- Organisms can adapt to their physical surroundings and to other organisms

Evolution by Natural Selection – process that causes the characteristics of a population to change without human control

Natural selection - unequal survival and reproduction that results from the presence or absence of particular traits

In order for evolution to occur in a population, individuals with a trait that is “naturally selected for” must reproduce

Ex) More mice with dark fur survive on the volcanic lava flows.

Nature Selects

Some organisms are more likely to survive because they

- Have certain physical traits
- Lack certain physical traits
- Have certain behaviors

Coevolution – the process of two species changing genetically in response to long term interactions with each other

Evolution by Artificial Selection – selection is controlled by humans

Ex) humans breed tomatoes with certain characteristics; different dog breeds exist because of artificial selection

Evolution of Resistance –

Resistance – the ability of one or more organisms to tolerate a particular chemical designed to kill it

- it's a trait that may be unintentionally selected by humans

An organism is resistant to a chemical if it has a gene that enables it to break down the chemical.

Humans have promoted this type of evolution by trying to control species with chemicals.

Ex) MRSA staph bacterial infections are not killed by antibiotics. They have evolved, developed unwanted adaptations, and have developed a resistance to the antibiotics.

Pesticide Resistance

Ex) insects eating crops are not killed by insecticide