

Genetic Variation & Natural Selection

Brain Pop VIDEO: Natural Selection

<http://www.brainpop.com/science/ecologyandbehavior/naturalselection/>

Brain Pop VIDEO: Charles Darwin

<http://www.brainpop.com/science/famousscientists/charlesdarwin/>

Brain POP VIDEO: Genetic Mutation

<http://www.brainpop.com/health/geneticgrowthanddevelopment/geneticmutations/>

- Organisms thrive in the environments for which they are best suited.
- All bears belong to the same species, but you wouldn't find a polar bear in Georgia or a black bear in Alaska.

Genetic Variation

- A population is the number of a specific species of organisms in a specific place.
- The assortment of genes in a population is its genetic variation.

Genetic Variation

- Genetic variation in a population can increase in different ways.
- One way is through mutation.
- A mutation is a change in a gene or a chromosome.

Genetic Variation

- Since a mutation changes an organism's DNA, that mutation can be passed on to the next generation.
- A beneficial mutation helps an organism thrive and reproduce (leading to the passing of desirable traits).
- A harmful mutation keeps an organism from thriving and reproducing (causes undesirable traits to not be passed on).

Natural Selection

- Most organisms produce more offspring than are able to survive.
- This results in competition for resources, such as food and living space.

Natural Selection

- Although the offspring are similar, some will have variations that help them to survive in a particular environment. Those that are unsuccessful at competition die. Those with favorable variations produce favorable variations on to their offspring.
- Over time, favorable variations are found in more and more organisms.

Natural Selection

- Adaptations are inherited traits that increase an organisms chances of survival.
- They include structures, functions, and behaviors.
- Sometimes changes in the environment may cause adaptations (changes) in organisms over time.

Natural Selection

- Natural selection can result in small changes over time.
- It can also result in very large changes and in the formation of new species from existing species.

Extinction

- Extinction is the death of all members of a species.
- Species may become extinct when they cannot survive changing conditions or can't compete with new or different species.