READING MATERIAL

Read About Natural Selection

WHAT IS NATURAL SELECTION?

Natural selection is a process in which organisms better suited to their environment are able to survive and reproduce more offspring. This process is also referred to as survival of the fittest.

To better understand natural selection...

LET'S BREAK IT DOWN!

Variations of Traits

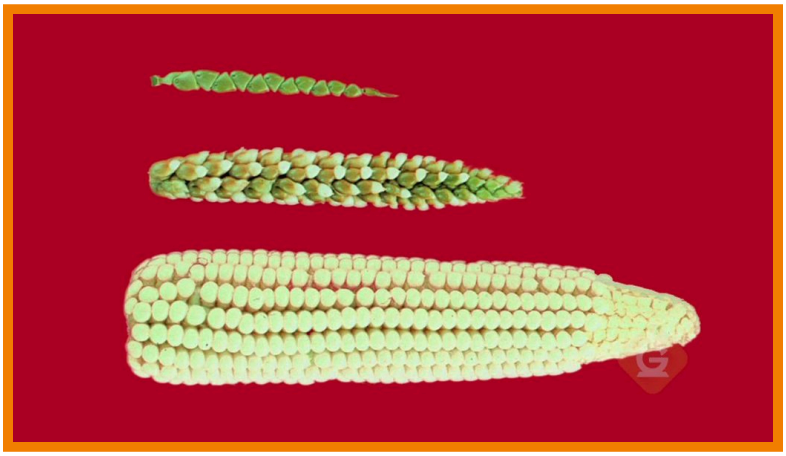
Traits can vary between individual organisms within a single population. Differences in traits can occur from both genetic and environmental factors.

Mutation

Mutations are changes that occur in our genetic material. Changes can occur at any time during an organism's life span. Mutations can be inherited or happen randomly during cell division or be caused by environmental factors. For example, too much sunlight exposure.

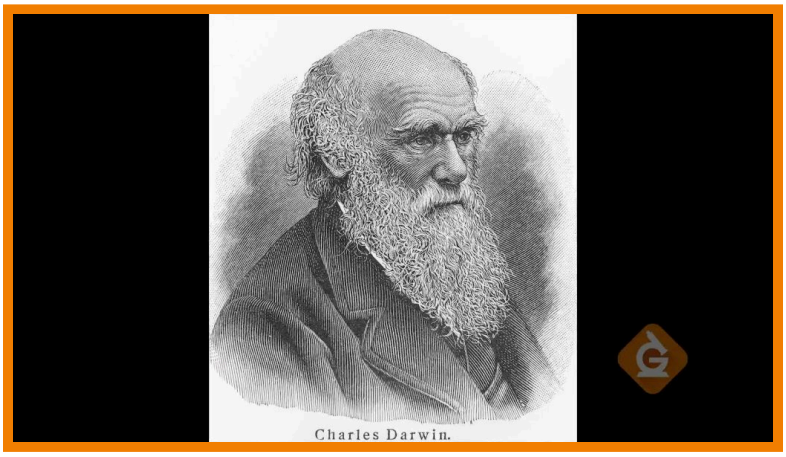
Artificial Selection

Artificial selection is the process in which humans decide what traits they want an organism to have. Human artificially select for traits in both plants and animals for many different reasons. Some reasons include designing a specific dog breed or making plants resistant to specific diseases.



Charles Darwin

Charles Darwin is a famous scientist known for his work on the idea of evolution resulting from natural selection. His most famous work was about the organisms he studied during his time on the Galápagos Islands.



Careers in Science: Biologist

A biologist is a scientist who studies life science. There are many specialized areas of biology, and biologists can choose to study in those specific areas. For example, botanists are scientists who specialize in plant biology.

NATURAL SELECTION VOCABULARY

Natural selection	The process of organisms changing over time. Organisms with traits better suited to their environment tend to survive and reproduce.
Variation	The different occurrences of the same trait among individuals of the same species (hair color, eye color, height, etc.).
Trait	A characteristic belonging to a population or organism.
Gene	Part of a chromosome that is inherited from the parent(s) and determines some of an organism's characteristics.
Artificial selection	A process in which humans choose specific traits they want and breed organisms together for those specific traits.
Bacteria	Microscopic, single-celled organism that can be found in diverse environments.

NATURAL SELECTION DISCUSSION QUESTIONS

What is trait variation? Give an example.

Trait variation is when organisms in a population have differences in the traits they have. For example, the giraffes have long necks, but not all their necks are the same length.

How can the environment affect an organism's traits? Give an example.

A change in the environment can affect an animal's ability to hide from a predator. For example, we saw that when the environment changed, the hawk ate the light-colored pocket mouse instead of the dark one because light one was easier to see.

What is natural selection?

Natural selection is a process in which some living things survive better in their environment and are able to reproduce and pass on their genes.

What is artificial selection?

Artificial selection is a process in which humans choose what traits they want other organisms to have.

Explain how natural selection could lead to a change (evolution) of a whole population.

Natural selection can lead to evolution of a population because if an organism doesn't survive, it cannot reproduce and pass on its traits. If traits are not passed on, then they eventually go away—like what happened to giraffes with short necks.

How could natural selection affect humans?

One way natural selection could affect humans is when bacteria that can make us sick changes. For example, the bacteria we saw in the video has changed to become resistant to the medicine that used to kill it.