

Adaptations

Charles Darwin

Charles Darwin 1859- publishes *On the Origin of Species by Means of Natural Selection*.

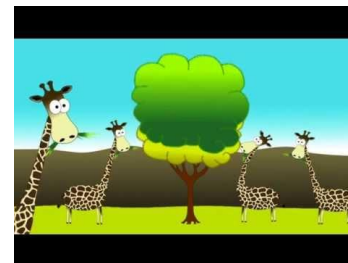
He travelled to the Galapagos (1831-1836) and was fascinated by the diversity of living things on Earth.

He observed a variety of: iguanas (land vs. marine), giant tortoises and finches.

He discovered: Natural selection = “survival of the fittest”

Means: an individual in a species that has genetics that are best suited to survive changes in an environment are the ones that live and reproduce.

Darwin Video/ Finches



THE THEORY OF EVOLUTION (BY NATURAL SELECTION)



Natural Selection & Adaptation

The theory of evolution by natural selection means that the inherited traits of a population change over time through natural selection.

Natural selection occurs when:

1. There is some variation in the inherited traits of organisms within a species.
2. Some of these traits will give individuals an advantage over others in surviving and reproducing.
3. These individuals will be likely to have more offspring.

What is an adaptation?

- An **adjustment or change** in the **structure or behavior** of an organism that makes it more suited to its environment.

Two Types of Adaptations:

1. Structural Adaptations:
physical features of an organism that helps them to survive

Types of Structural Adaptations

1. Camouflage



Camouflage



Camouflage



Mimicry-when an animal copies another animal's appearance, actions, or sounds



Can you guess which one is a sea slug and which is the flatworm mimic? The sea slug gives off poisonous, smelly chemicals to discourage its predators. Why would the flatworm want to look like the sea slug?

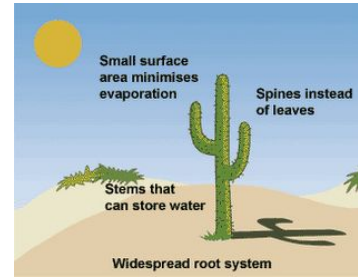
Chemical Defense



Other Examples of Structural Adaptations



Other examples of structural adaptations



Beaks



Teeth



2. Behavioral Adaptations: Things or actions that organisms do to survive



Spiders do not learn to build a web it is an instinct.

Living in a herd is a behavioral adaptation.



Migration is another behavioral adaptation

Migration



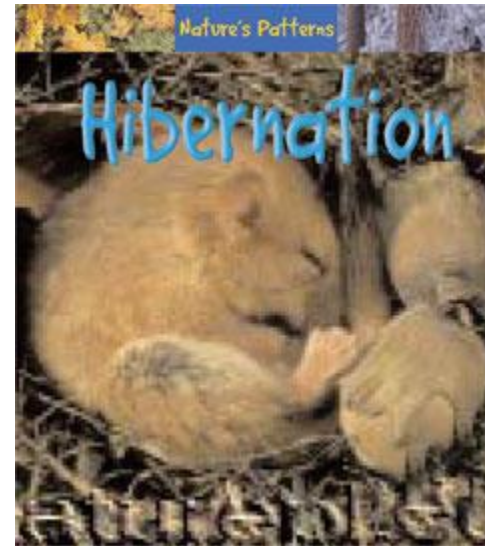
EXAMPLE-BEHAVIORAL

Adaptations of The Hedgehog

when startled, a strong muscle in its back will pull it into a ball, protecting its soft underbelly and pointing its sharp spines up straight



(HOW THE HEDGEHOG STAYS ALIVE)



What are some adaptations of the arctic fox?



What are some adaptations of the desert fox?



What is artificial selection?

Two organisms with desirable traits are crossed to produce offspring with those same traits. By continually crossing for the same good traits, scientists are able to improve the genetic makeup of a species.

Most benefited area: farming and ranching (corn, cows)

Other examples: purebred dogs, cats, horses, fruits and vegetables.

This is also called selective breeding.