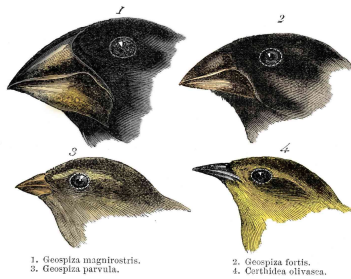


# VARIATION AND ADAPTATION

## Overview

As scientists, we will be learning about variations and adaptation and how this links to the process of evolution. We must understand that adaptations are characteristics which improve the chances of survival in a habitat.

E.g. On the Galapagos Islands, Charles Darwin found differences between finches from island to island. They had adapted for the different foods they needed to eat, in order to survive.



## Key vocabulary

**characteristics** – the features of an organism, used to identify individuals or a group.

**adaptations** – characteristics which improve the chances of survival in a habitat.

**habitat** – an area where organisms live.

**desert habitat** – an extremely dry environment.

**polar habitat** – an extremely cold environment found at both of the Earth's poles.

**evolution** – the process where descendants develop different characteristics from their ancestors, eventually creating new species.

**species** – a group of organisms that can reproduce with each other to create offspring.

**common ancestor** – an ancestor shared by two or more descendant species.

## Who is Charles Darwin?

Charles Darwin was an English naturalist and biologist who proposed a theory of how new species came to exist. He is known for his theory of evolution by **natural selection**.

According to this theory, all living things are struggling to survive. The living things that have the most helpful traits for their environment tend to survive. These living things then pass along their helpful traits to their young. In this way, animals change, or evolve, over hundreds of years.

## Key facts

- Animals in cold environments have characteristics which allow them to survive. For example, they may have thick fur or blubber.
- Animals in desert environments have characteristics which allow them to survive in extreme heat. Some of these include thin fur and long eyelashes.
- Plants in desert environments have longer roots and larger stems, so they can absorb and store more water.
- Darwin suggested that different species of animals had evolved from a shared ancestor.
- Organisms which are better adapted to their habitat are more likely to survive and reproduce.
- The characteristics that have enabled these individuals to survive are passed on to the next generation. This theory is called "natural selection".