



## What should I already know?

- Which things are living and which are not.
- Identifying animals (e.g. amphibians, reptiles, birds, fish, mammals, invertebrates) and plants using classification keys
- Animals have offspring which grow into adults.
- The basic needs of animals for survival (water, food, air)
- Some animals have skeletons for support, protection and movement.
- Food chains, food webs and the role of predators and prey.
- Features of habitats and the animals and plants that exist there
- The life cycle of some animals and plants
- Sometimes environments can change and this has an effect on the plants and animals that exist there
- Living things breed to produce offspring which grow into adults. This is called reproduction.

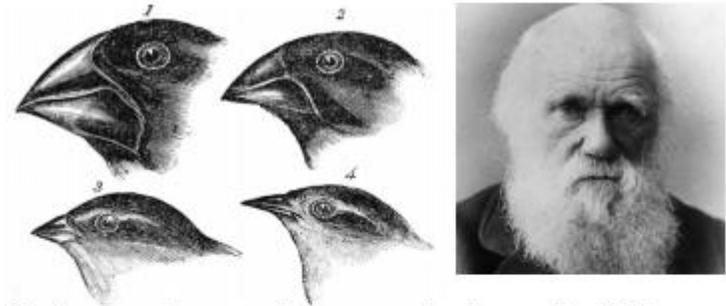
## What is Evolution?

- Evolution is a process of change that takes place over many generations, during which species of animals, plants, or insects slowly change some of their physical characteristics. This is because offspring are not identical to their parents.
- It occurs when there is competition to survive. This is called natural selection.
- Difference within a species (for example between parents and offspring) can be caused by inheritance and mutations.
- Inheritance is when characteristics are passed on from generation to the next.
- Mutations in characteristics are not inherited from the parents and appear as new characteristics.

## What is adaptation?

- Adaptation is when animals and plants have evolved so that they have adapted to survive in their environments. For example, polar bears have a thick layer of blubber under their fur to survive the cold, harsh environment of the Arctic while giraffes have long necks to reach the leaves on trees.
- Some environments provide challenges yet some animals and plants have adapted to survive there
- Sometimes adaptations can be disadvantageous. One example of this can be the dodo, which became extinct as it lost its ability to fly through evolution. Flying was unnecessary for the dodo as it had lived for so many years without predators, until its native island became inhabited.
- When adaptations are more harmful than helpful, these are called maladaptation's.

## Diagram



Charles Darwin, an evolutionary scientist, studied different animal and plant **species**, which allowed him to see how **adaptations** could come about. His work on the finches was some of his most famous.

