

Fens Primary School Knowledge Organiser



Science Focus:

Evolution and Inheritance

Year 6

Term:

Evolution

What is evolution?	<ul style="list-style-type: none"> 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. Difference within a species (for example between parents and offspring) can be caused by inheritance and mutations.
What is inheritance?	<ul style="list-style-type: none"> Inheritance is when characteristics are passed on from generation to the next.
What are mutations?	<ul style="list-style-type: none"> Mutations in characteristics are not inherited from the parents and appear as new characteristics in the offspring of a species.
What is natural selection?	<ul style="list-style-type: none"> It occurs when there is competition to survive. This is called natural selection.
How do we know about evolution?	<ul style="list-style-type: none"> Evidence of evolution comes from fossils - when these are compared to living creatures from today, paleontologists can compare similarities and differences. Other evidence comes from living things - comparisons of some species may reveal common ancestors.
What is adaptation?	<ul style="list-style-type: none"> 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. 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.

Genetic information is passed down from one generation of organisms to another

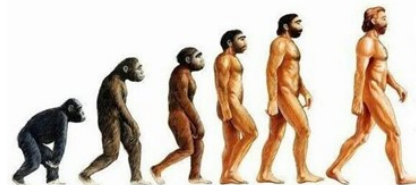
Living things produce offspring of the same kind, but offspring are not identical with each other or with their parents. Plants and animals, including humans, resemble their parents in many features because information is passed from one generation to the next. Other features, such as skills and behaviour, are not passed on in the same way and have to be learned.

The diversity of organisms, living and extinct, is the result of evolution

All the basic functions of life are the result of what happens inside cells. These are respiration, reproduction, feeding, excretion, growth and developments as well as death.

Diagrams and Symbols

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.



Working as a Scientist

- Research the work of Charles Darwin and Alfred Russel Wallace.
- Create a fact file of an animal or plant identifying how it has **adapted** to its **environment** and how it has **evolved** to **survive**.
- Create a new planet and describe the **environmental** features. What animals and plants can live there? How have they **adapted** to survive?

Vocabulary

adaptation	a change in structure or function that improves the chance of survival for an animal or plant within a given environment
ancestor	an early type of animal or plant from which a later, usually dissimilar, type has evolved
breeding	the process of producing plants or animals by reproduction
characteristics	the qualities or features that belong to them and make them recognisable
environment	all the circumstances, people, things, and events around them that influence their life
evolution	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
extinct	no longer has any living members, either in the world or in a particular place
fossil	the hard remains of a prehistoric animal or plant that are found inside a rock
inherit	If you inherit a characteristic you are born with it, because your parents or ancestors also had it.
mutation	characteristics that are not inherited from the parents or ancestors and appear as new characteristics .
natural selection	a process by which species of animals and plants that are best adapted to their environment survive and reproduce , while those that are less well adapted die out
offspring	a person's children or an animal's young
palaeontology	the study of fossils as a guide to the history of life on Earth
reproduction	when an animal or plant produces one or more individuals similar to itself
species	a class of plants or animals whose members have the same main characteristics and are able to breed with each other
theory	a formal idea or set of ideas that is intended to explain something
variation	a change or slight difference