

Knowledge organiser



Offspring

Animals and plants produce **offspring** that are similar but not identical to them. **Offspring** often look like their parents because features are passed on.

Variation

In the same way that there is **variation** between parents and their **offspring**, you can see **variation** within any species, even **plants**.



Adaptive Traits

Characteristics that are influenced by the **environment** the living things live in. These **adaptations** can develop as a result of many things, such as food and climate.



Inherited Traits

Eye colour is an example of an **inherited trait**, but so are things like hair colour, the shape of your earlobes and whether or not you can smell certain flowers.



Habitats

A good **habitat** should provide shelter, water, enough space and plenty of food.

Environments

There are many types of **environment** around the world. Polar regions, deserts, rainforests, oceans, rivers, and grasslands are all **environments**.



What is evolution and how do we know about it?

Scientists believe that life on Earth started with much more simplistic creatures than those which exist now. They believe that those creatures developed gradually, over time, and went through a long series of changes. This process is known as evolution. By studying organisms which exist now and comparing them to prehistoric remains, scientists try to explain those changes as well as how and why living things have changed over time.

Scientists believe that bacteria were the first organisms on Earth, and that they began to develop over 3,500 million years ago. They suggest that, over the course of those millions of years, these tiny bacteria developed into the first animals and eventually into the animals we see today. We know about the changes in plants and animals over time because of the information preserved in fossils. When a plant or animal dies, its body rots away but sometimes (under very rare circumstances), the hard parts such as the skeleton may be preserved in sand or mud. Over millions of years, the sand and mud build up in multiple layers, and eventually turn into rock. The preserved remains of the plant or animal (the fossil) are inside.





Vocabulary

Word	Definition
Offspring	The young produced by living things.
Inherited	To receive through a parent's genes.
Trait	A characteristic or quality that makes a person or animal different from others.
Characteristic	Something that makes a person or thing different from others.
Acquired	Learnt or developed (not genetic)
Learnt	Gain or acquire knowledge or skill by study, experience or being taught.
DNA (genetic)	DNA, (or deoxyribonucleic acid), is the hereditary material in humans and almost all other organisms.
Adapt	Become adjusted to new conditions.
Genes	The scientific word for the building blocks that make us who we are. They hold our traits
Environment	A place where things live. It may contain different habitats
Survival	The state or fact of continuing to live or exist, typically <u>in spite of</u> an accident, ordeal, or difficult circumstances.
Predator	An animal that lives by killing and eating other animals
Prey	an animal that is hunted and killed by another for food.
Evolution	The changes to the traits/characteristics of a species overtime. This is a result of adaptations
Natural selection	A term used to describe the process where only living things in a species that are adapted well enough to their environment will survive and pass on their traits/characteristics
Artificial selection	Where humans choose which <u>traits</u> they want to pass on to the offspring of a living thing
Evolve	To change or develop slowly

Genetics

Genetics is the study of what offspring inherit from their parents.

Genes are the building blocks that are passed on to living things from their parents. They contain the recipe, or code, that decides which traits a living thing will have.

In humans, genes are found in all of our cells. Inside each of the tiny cells that make up every part of our bodies are even smaller structures called chromosomes. Our genes are found inside these **chromosomes** as a special genetic code, our recipe, in something called **DNA**.

