Year 6 – Evolution and Inheritance

Language for Learning

Through the activities in this topic, pupils should **understand and use key scientific words precisely** - spelling these words correctly. This includes - words with precise scientific meanings (e.g. weight and mass), words with different meanings in scientific and everyday contexts (e.g. drag) and words relating to scientific enquiry (e.g. variable).

Key Scientific Words

Key Word	Definition (Meaning)
Organism	A living thing.
Offspring	Any plant or animal formed by reproduction. Offspring are produced by their parents.
Characteristics	The features of an organism.
Variation	The differences between living things.
Environment	The surroundings of an organism.
Environmental Factors	Things in an environment that can change something about an organism.
Environmental Variation	Differences between organisms caused by environmental factors.
Inherited Variation	Differences between organisms passed on by their parents in reproduction.
Inherited	Passed on to an organism from its parents.
Breeding	When different varieties or breeds are mated with one another.
Selective Breeding	When humans choose certain animals and plants that have useful characteristics and breed more of these organisms.
Adapted	When the features of an organism help it to survive in an environment.
Competition	Organisms compete with each other for resources – such as food or water.
Species	A group of organisms that can reproduce with each other to produce offspring that will also be able to reproduce.
Evolution	The gradual change in the characteristics of a type of living thing over time.
Fossil	The remains of a dead animal that have become trapped within rock.
Palaeontologist	A type of scientist who studies fossils.
DNA	A large chemical that contains genes.
Gene	A length of DNA that controls a characteristic of an organism.
Genetic Information	The instructions that control your characteristics. These instructions are found on genes.

Key Concepts

The differences between organisms are known as **variation**. There is variation between different species *and* between members of the same species. A **species** is a group of organisms that can reproduce with one another to produce offspring that will also be able to reproduce.

There is variation between different species. Lions and tigers are different species. Tigers have stripes, lions do not.

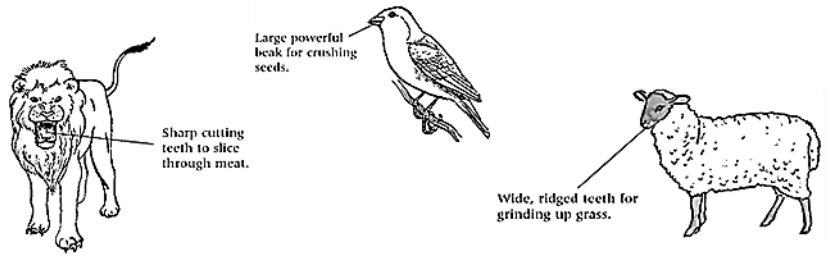
There is variation between members of the same species. All tigers have different patterns of stripes.

Living things produce **offspring** of the same kind, but normally offspring **vary** and are not identical to their parents.

Variation can have **environmental** or **inherited** causes. **Inherited variation** is passed on from parents (e.g. **Eye colour**). Environmental variation is caused by the surroundings of an organism (e.g. **Scars** and **sunburn**).

Animals and plants are **adapted** to where they live. This means that they have certain features that allow them to **survive** in a habitat. For example, fish are adapted to living under water. They have gills to take oxygen out of the water, fins to swim with and streamlined bodies to help them move easily through the water.

Often, animals have **adaptations** for eating, either in or on their mouths:



Organisms that are better adapted to survive in an area will have a better chance of **survival**.

As some organisms are better adapted to survive than others – this can lead to **evolution**. Evolution is how a type of living thing can gradually change over time.

Fossils provide information about living things that inhabited the Earth **millions** of years ago. **Palaeontologists** are a type of scientist that study fossils.

A group of animals may have special differences in their inherited characteristics from the rest of their species. A group like this is called a **breed** (e.g. different breeds of dog). There are also breeds of plants and these are called **varieties**.

Farmers and plant breeders may choose or **'select'** an animal or plant with certain features (e.g. good milk production in cows). This animal or plant is then used to breed from. The offspring that have the best of these characteristics are then bred from again. This is called **selective breeding** and is how many new breeds and varieties are created. Sometimes two different breeds or varieties are bred together to produce offspring with characteristics from both breeds or varieties. This is called **cross-breeding**.