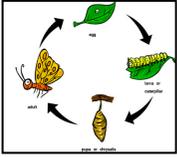


# Knowledge Organiser - Year 5 - Science: Living things

## and their habitats – Lifecycles and reproduction



**A Life cycle is the series of changes in the life of an organism including reproduction.**

### Key Vocabulary

<b>Amphibians</b>	A cold-blooded vertebrate animal including groups such as frogs, toads, newts, salamanders and caecilians. They have an aquatic gill-breathing larval stage followed
<b>Asexual reproduction</b>	Offspring get genetic information from one parent so they are clones of their parents.
<b>Bird</b>	A warm-blooded, egg-laying, vertebrate animal which possesses feathers, wings, a beak and typically able to fly (although not always).
<b>Fertilisation</b>	This is the fusion of the nucleus of a male reproductive cell with the nucleus of a female reproductive cell, producing a new cell called a zygote.
<b>Gamete</b>	This is the male or female reproductive cell that contains half the genetic material of the organism.
<b>Germination</b>	Germination is the process by which an organism grows from a seed or similar structure.
<b>Gestation</b>	The process or period of time for developing inside the womb, between conception and birth.
<b>Insects</b>	A small animal that has six legs and generally one or two pairs of wings. Its body is divided into three parts.
<b>Invertebrates</b>	An animal that does not possess a backbone.
<b>Mammals</b>	A warm-blooded vertebrate animal, that has hair or fur, females secrete milk for young and typically giving birth to live young.
<b>Metamorphosis</b>	The process of transformation from an immature form to an adult form in two or more distinct stages.
<b>Offspring</b>	The young of an animal or person.
<b>Pollination</b>	The transfer of pollen to a stigma, ovule, flower, or plant to allow fertilization.
<b>Seed dispersal</b>	Seed dispersal is the movement, spread or transport of seeds away from the parent plant.
<b>Sexual reproduction</b>	When an Offspring inherits genes from both mother and father, inheriting a mix of features from both.
<b>Vertebrates</b>	An animal with possession of a backbone or spinal column.

### Working Scientifically

Explore ideas and raise different kinds of questions; They should use information records to identify, classify and describe living things, and identify patterns that might be found in the natural environment. They should decide how to record data from a choice of familiar approaches; recognise which secondary sources will be most useful to research their ideas and begin to separate opinion from fact. They should use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas and should talk about how scientific ideas have developed over time.

## Key Question: How are plant and animal lifecycles similar or different to each other?



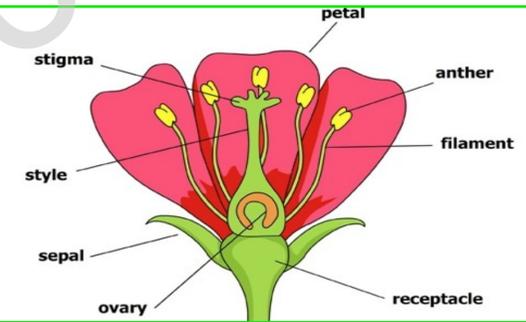
David Attenborough (born 1926) is one of the most famous natural historians in the UK. He writes books and produces television programmes about wildlife and plants, from habitats around the globe. He has also made us all aware of how humans are affecting the planet's ecology.



Jane Goodall (born in 1934) is best known for her study of chimpanzee's social and family life. She began studying in the jungles of Tanzania in 1960. Instead of giving the chimpanzees numbers, she gave them names such as Fifi and David Greybeard and observed them to have unique and individual personalities, an unconventional idea at the time. Jane encouraged more women to become scientists, as in 1960, it was a very male dominated profession.

Most plants reproduce using genetic information from two different plants (sexual reproduction). The pollen from the stamen of one plant has to be transferred to the stigma of another, so that a new seed can be made inside the ovary—this process is called pollination, followed by fertilization. The plant then may make a fruit around the seed.

In order for the seed to grow it must move away from the parent plant. This is called seed dispersal and can be helped by animals, the wind, water or by the seed pods exploding and throwing the seeds! Germination is the next process and the seeds will need the right conditions in order to start to grow. We will try this for ourselves.



Asexual reproduction in plants means that the new plant is a clone of the parent. Only one parent plant is needed to produce identical new plants. Examples of this are plants grown from bulbs, tubers or those that produce 'runners' new little plants on stalks!



Mammals and birds have very different lifecycles. A rabbit embryo grows inside the female rabbit, who then gives birth to live young that require milk from mum. A bird lays eggs in which the embryo develops. The egg then hatches and the young are fed with the same food as the adult (partially digested by the adult and regurgitated!).



Amphibians (vertebrates) and insects (invertebrates) both reproduce by laying eggs which hatch into a larval stage before they go through metamorphosis and become the adult form of the animal. Insects also have a pupae stage, where the larva enters a chrysalis or cocoon. The adult versions of the animals are very different; they eat different foods, live in different habitats. Amphibians become air breathers. A truly remarkable process.

