



Year 5 - Living Things Reading Booklet

Lesson Series:

1. Life cycles of plants and animals in our local area.
2. Life cycles of mammals and amphibians.
3. Life cycles of mammals and birds.
4. Reproduction in plants.
5. The work of David Attenborough and Jane Goodall.

Name: _____

Class: _____

Lesson 1 - Life cycles of animals and plants in our local area

In nature there are many different life cycles, often connected to the seasonal cycles. Oak trees are commonly found in England. Oak trees can live many hundreds of years, their life cycle can be very long.

Read this

When oak trees reproduce, they produce seeds that are in a protective case, the acorn. The acorn is the fruit of the oak tree and it performs an important role. Acorns fall to the ground and are sometimes carried to new places and buried by wildlife such as squirrels. They then germinate and grow into a sapling during springtime. If the conditions allow, they continue to grow and form a new oak tree and the life cycle continues.

A squirrel is a mammal whose life cycle is intertwined with trees. Squirrels often make their homes in trees, including the oak tree. Acorns are important food sources for squirrels and in Autumn they can often be seen burying them to eat over the winter. When squirrels reproduce, they have live young called kittens, who live in their nests until they have fur and can fend for themselves. Once they grow into adult squirrels, they too reproduce and the cycle continues. See how plants and animals are interconnected within an ecosystem? (Remember back to Y4 Science on Ecosystems)



Acorn



Oak Tree



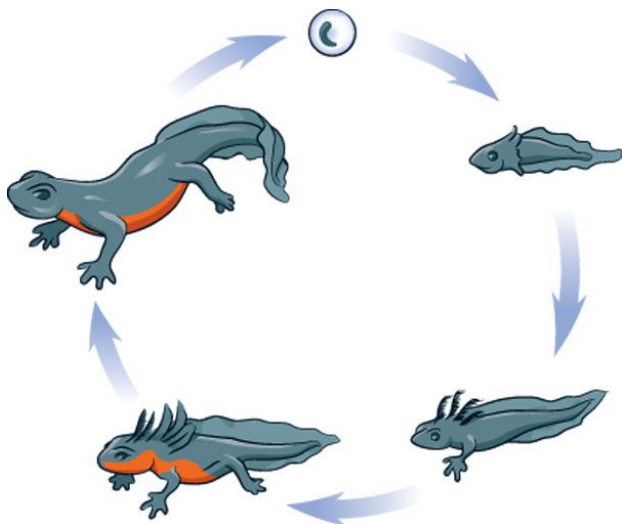
Lesson 2 - Life cycles: Mammals and Amphibians

Amphibians are cold blooded vertebrates. They spend part of their lives on land, and part in water. The word 'amphibian' comes from Greek and means 'leading a double life'. In the UK, common amphibians include newts, toads and frogs.



Female newts lay eggs and wrap them in leaves or pond weed for protection. Newt tadpoles grow front legs before back legs, contrasting with frog tadpoles who grow their back legs first. They have gills behind their heads to enable them to breathe underwater. Newts go through a complete change, called metamorphosis which enables them to live on land as an adult. This is called Metamorphosis. Metamorphosis comes from Greek and means 'transform or change shape'. The word metamorphosis describes the process when an animal changes in a significant way as it matures. Newt tadpoles have frilly gills and a fin on their tails, which are reabsorbed into their bodies during metamorphosis. The shape of the body and head of the newt changes as it reaches adulthood.

In contrast to amphibians, Mammals grow as embryos inside their mothers until they are born and they resemble their parents. Mammals continue to grow until they reach adulthood. Jane Goodall is a scientist who has spent her life studying chimpanzees. She spent 60 years studying how wild chimpanzees in Tanzania behave and interact with each other. Chimpanzee embryos gestate for eight months before birth. Female chimps carry their young for a few days before they develop the ability to hold on by themselves. Infant chimps hold onto their mothers for several months before they can confidently stand and walk independently. They feed from their mother's milk for up to three years and sometimes stay close to their mothers for ten years.



Lesson 3 - Life cycle: Insects and birds

The life cycle of a bumblebee; Queen bumblebees spend all winter underground hibernating, they then emerge in springtime when they feed on flowers to replenish their energy stores. They then create nests, gather pollen and store it in the nests. The Queen bee then creates a wax mound on which she lays her eggs. She keeps the eggs warm by sitting on the nest and shivering her muscles to keep warm.

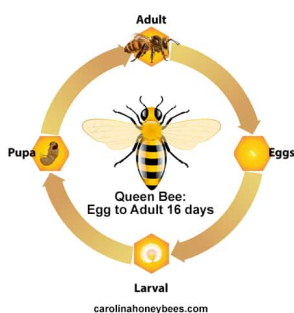


When the eggs hatch, little white larvae emerge and feed from the pollen the queen collected. The Queen bee will leave the nest to gather pollen to feed her young. After two weeks, the larvae spin a cocoon and emerge as adult bees. The first bees to hatch guard and clean the nest, while other bees leave the nest to collect nectar and pollen which they bring back to the nest. The Queen bumblebee lays more eggs and does not leave the nest now.

Cuckoos migrate to England from sub-Saharan Africa in April and May. They look for nests created by other birds rather than building their own. When a female Cuckoo is ready to lay her egg, she will remove an egg from a chosen nest and put her own in its place. Female Cuckoos can lay around twenty eggs in a season in many different nests belonging to other birds.

The bird who made the nest will look after the egg as though it was one of its own and after twelve days the young Cuckoo hatches. Cuckoo chicks can push other eggs or chicks out of the nest to ensure they receive enough food. Three weeks later the young cuckoo has increased in size and is ready to leave the nest. Young Cuckoos will migrate to Africa in September having never met their parents.

Useful links: <https://www.bto.org/our-science/projects/cuckoo-tracking-project>



Lesson 4 - Reproduction in plants

Most large plants reproduce by combining a male and female gamete to make a fertilised egg that grows into an embryo. This embryo or baby plant is protected inside a seed. Most plants clothe the seeds they make with a covering such as fruits. These are called angiosperms 'covered seeds'. All these plants have flowers and the seed covers all come from a flower.

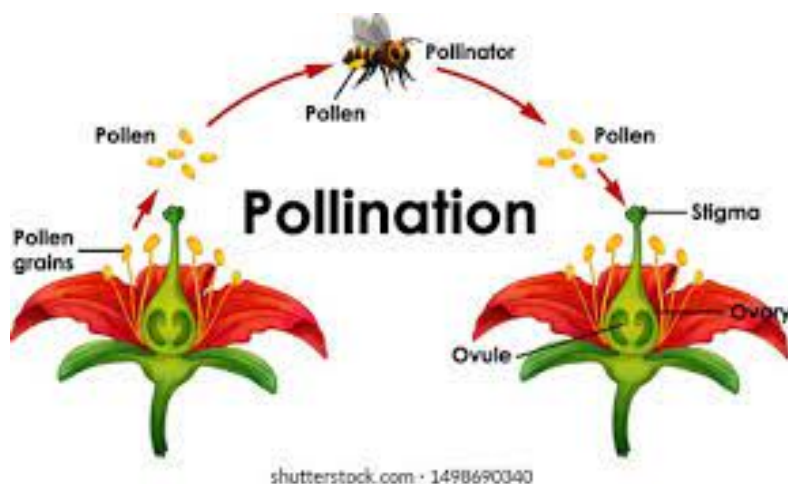


Typically a flower is formed as a series of rings, one inside the other. The outer ring is made up of sepals, which are usually green and look like leaves attached to the stem at the base of a flower. Inside the sepals, the petals make the next ring. The colourful petals attract insects, which often bring the pollen carrying the male gamete to the egg.

Inside the petals, in the centre of the flower, lie the reproductive parts. The stamens are the male reproductive organs. Each stamen has an anther on its tip, where millions of tiny pollen grains, each with a male gamete are made. At the very centre is the pistil, the female reproductive organs. The pistils are tubes that lead down to the ovary with its egg/s. The ovary (meaning place for eggs in Latin) is completely protected. When there is just one seed inside a fruit, it comes from a single ovule whereas when there are several eggs, there will be several ovules inside a larger ovary. When that ovary develops into a fruit.

The first step of flower fertilisation is pollination, the movement of pollen from the anther to the sticky top of the pistil. Insects or birds carry pollen as does the wind and rain. Next, a tube grows out of the pollen grain that is stuck to the pistil. A pollen tube can only grow if the pollen is from the same type of plant as the pistil it lands on. The tube grows down into the ovule. Finally, the male gamete joins the egg in the ovule and fertilisation occurs. The fertilised egg begins to divide and form an embryo. The ovule grows into a seed coat that protects the new seed. As the seed forms in the parent plant, the flower changes. The sepals and petals die and fall off, while the ovule grows into a covering or fruit. The covering protects the seeds and also helps to scatter the seed.

Useful links: <https://www.bbc.co.uk/bitesize/topics/zgssgk7/articles/zyv3jty>
<https://www.bbc.co.uk/teach/class-clips-video/science-ks2--ks3-how-plants-and-animals-reproduce/zm8fbdm>



Lesson 5 - The work of David Attenborough and Jane Goodall

As a child, David Attenborough spent his childhood collecting fossils, stones and other natural specimens. He lived in the grounds of University College Leicester where his father was the principal. When he was 11 he collected newts from a local pond for the zoology students to study. David Attenborough has studied natural history (looking at animals and plants in their natural environment) and has created many fascinating documentaries about the natural world.



Jane Goodall is the world's most foremost expert on chimpanzees and spent 60 years studying them in Tanzania. She challenged many widely held beliefs about the animals proving they are not vegetarian, as scientists previously thought, that they have individual personalities and that they are capable of making and using tools. She encouraged many women to study primates and become primatologists. Jane Goodall has spent her life tirelessly campaigning for the natural world and in 2020 pledged to plant 5 million trees as part of a campaign to plant 1 trillion trees by the World Economic Forum.



Sir David Attenborough



Dame Jane Goodall



Life cycle

A series of **changes in the life of a living thing**, including reproduction

Reproduction

The **production of offspring** by a living thing

Interconnection

A **connection between two or more things**

Mammal

A **warm-blooded vertebrate** that has live young and hair or fur

Amphibian

A **cold-blooded vertebrate** that begins life underwater and develops the ability to breathe and live on land

Metamorphosis

The **process of transformation to adult form** where a creature completely changes

Hibernate

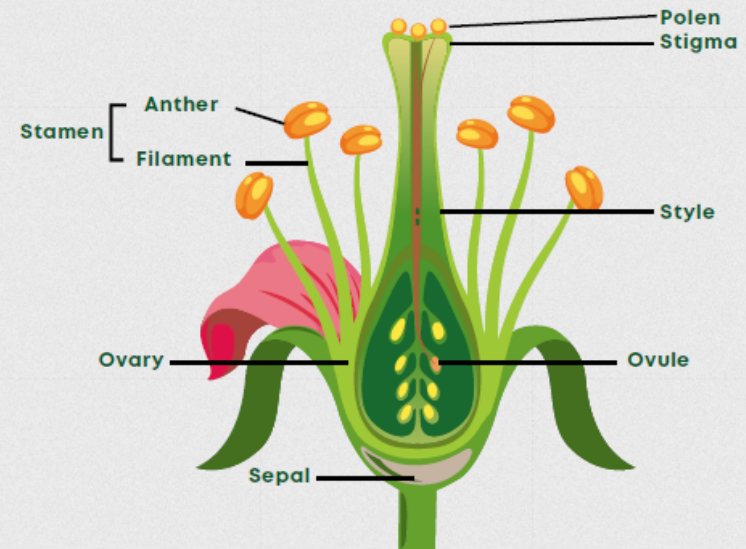
When a creature **spends winter in a very deep sleep** where they rest in a safe, often dark place, to survive the cold

Incubate

When a creature **sits on eggs to protect them** and keep them warm before they hatch

Larva (larvae)

Very young insects or amphibians, before they transform into adults e.g. caterpillar



Most large plants reproduce by combining a male and female gamete (pollen and ovule) to make a fertilised egg that grows into an embryo. The embryo or baby plant is protected inside a seed.

Newt - Larva



Newt - Adult



Acorn



Oak Tree



Sir David Attenborough

is a broadcaster and natural historian.



Dame Jane Goodall

is a primatologist and world expert on Chimpanzees