



Living Things and Their Habitats (Biology)

Year 5

End Points:

- Recognise how plants and animals in our local area change throughout the year
- Plants and animals are interconnected within an ecosystem
- A mammal is born and grows into a mature adult
- Most amphibians hatch eggs underwater, before beginning a process of metamorphosis
- Metamorphosis is a significant change in an animal as it grows into an adult
- All animals are born, grow and mature, but in very different ways
- Know that flowering plants need pollen to reproduce
- Most large plants reproduce by combining a male and female gamete to make a fertilised egg that grows into an embryo
- The embryo is protected inside a seed
- Know there are many different jobs in the world of science
- Know that David Attenborough and Jane Goodall have dedicated their lives to studying the natural world and communicating their findings

This unit builds on understanding from Year 3 – Cycles in Nature. Pupils will look at the life cycles of plants and animals in their local area, working scientifically to observe the life cycle of a local tree and the animals that interact with it. Examples of oak trees and squirrels are given in the plan, but teachers are encouraged to use a locally relevant example of how animals and trees change throughout the year. Developing on this knowledge, pupils will then look at the life cycles of mammals, amphibians, insects and birds in more detail. Pupils will study the details of these life cycles and will consider the various stages, including metamorphosis in insects and amphibians and reproduction. Specifically, children will study chimpanzees, newts, bumblebees and cuckoos. When studying cuckoos, children will learn how the behaviour of the cuckoo differs from other animals, as it places its own egg inside a nest belonging to another bird rather than incubate and then care for the chick itself.

This unit also covers reproduction of flowering plants. Children will learn how a flower contains male and female reproductive organs. They will work scientifically to observe and dissect a flower. They will recognise the importance of pollination, which transfers pollen from the anther to a stigma within a flower, allowing fertilisation to take place. They will also recognise the importance of insects such as bees in the pollination process of flowering plants.

In this unit children will find out about the life and work of Sir David Attenborough and Dame Jane Goodall. They will have the opportunity to

undertake research into their work and how they studied and communicated their findings about the natural world. They will write short biographies outlining the interesting lives led by Attenborough and Goodall.

Finally, to assess their understanding of the content of this unit, children will be asked to compare and contrast the life cycles of two or more living things. This piece of work can include written explanations and annotated diagrams. Knowledge and understanding of this unit will be built upon in Year 6 in the units Classification of Living Things and Reproduction.

Lesson Sequencing:

In lesson one, children will learn that plants and animals in their local area change throughout the year. They will look at this through the life cycle examples of squirrels and oak trees. Lessons two and three will expand on this understanding of life cycles by exploring mammals and amphibians, and insects and birds respectively. Lesson four will explore how flowering plants reproduce through pollination. Lesson five will look at two famous scientists, looking at their work including on life cycles: David Attenborough and Jane Goodall. In the assessment lesson, children will demonstrate their understanding of life cycles by comparing two different animals.

Misconceptions:

- all plants start out as seeds
- all plants have flowers
- plants that grow from bulbs do not have seeds
- only birds lay eggs
- all mammals give birth to young (e.g. platypus doesn't).

Working Scientifically criteria met in this unit:

- planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
- recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
- reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations
- identifying scientific evidence that has been used to support or refute ideas or arguments