Classification of Plants and Animals (Biology)

Year 4

End Points:

- A vertebrate is an animal with a backbone.
- An invertebrate is an animal without a backbone.
- Scientists sort living things using a process called classification.
- Fish are cold-blooded vertebrates that live in water and have gills.
- Amphibians are cold-blooded vertebrates that live both in water and on land.
- Reptiles are cold-blooded vertebrates with scaly skin.
- Birds are warm-blooded vertebrates with feathers that can fly.
- Mammals are hairy, warm-blooded vertebrates that breathe air.
- Insects are invertebrates with six legs and three body parts.
- Molluscs are invertebrates with a soft body, and some have shells.
- Arachnids are invertebrates with eight legs and two body parts.
- Plants are classified into two main groups: flowering and non-flowering.
- Non-flowering plants grow from spores instead of seeds.

In Key Stage One children began to understand that scientists group living things according to their characteristics. In this unit they will look more closely at the concept of classification in relation to vertebrates, invertebrates and plants. Children will learn about Carl Linnaeus and his work to name and classify living things. Children will ask and answer questions about fish, amphibians, reptiles, birds, mammals, insects, arachnids and molluscs. Children will look closely and observe how these living things are structured, what their features are and how they compare and contrast with other animals. They will also study flowering and non-flowering plants and differences in the reproduction of these living things. Conceptually, children are building their understanding of how and why scientists classify and how taxonomies help us to understand the world around us.

This knowledge will be built upon further in Year 6 when children look again at the work of Linnaeus and the Latin names he assigned the living things he studied. This area of the curriculum will link to children's understanding of the work of Charles Darwin and Alfred Wallace who they will also study in Year 6.

Lesson Sequencing:

This unit will begin by introducing the idea of classification of animals and plants. Children will learn that animals can be split into two main groups of vertebrate and invertebrate. Lesson two will build on this knowledge by looking at two types of vertebrates: fish and amphibians. In lesson three, children will further develop their understanding of vertebrates classification by learning about reptiles, birds and mammals. Lesson four will build understanding of invertebrate classification by looking at insects, molluscs and arachnids. Lesson five will look at the classification of plants into flowering and non-flowering plants. In the assessment lesson, children can either classify a selection of animals and plants with a pre-prepared classification key or find incorrectly classified animals or plants by using a classification key.

Misconceptions:

- Animals are only creatures that live on land
- Humans are not animals
- Insects are not animals
- All bugs or creepy crawlies, including spiders, are insects
- A bee (or any other insect) is not an animal because it is an insect
- Insects have legs attached to each body segment
- Confusing amphibians for reptiles and vice versa – lizards and snakes are amphibians
- Whales and dolphins are fish, not mammals
- A crab is a vertebrate because it has a hard shell on its back
- A snake is like a worm, so it is an invertebrate

Working Scientifically criteria met in this unit:

- recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables
- identifying differences, similarities or changes related to simple scientific ideas and processes
- asking relevant questions and using different types of scientific enquiries to answer them
- using straightforward scientific evidence to answer questions or to support their findings
- reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions