

The Big Questions

- Why do we need to classify living things?
- Are all changes to habitats negative?
- Why are people cutting down rain forests and what effect does this have?

Core Knowledge

- Living things include both the plant kingdom and the animal kingdom.
- Living things can be **classified** by their **properties** e.g. in Year 3 you were able to **classify** plants into flowering and non-flowering categories.
- The animal kingdom can be divided into two broad categories: **vertebrates** (animals **with** a backbone) and **invertebrates** (animals **without** a backbone).
- Vertebrate animals include: **fish, amphibians, reptiles, birds** and **mammals**.
- Invertebrate animals include: **snails, slugs, worms, spiders** and **insects**.
- When a scientist discovers a new species of animal they name it and record all the information they can including: **habitat, species, diet, appearance**.
- **Classification keys** are a way of identifying living things through a series of questions based on their similarities and differences.
- The differences between living things is sometimes called **variation**.
- Scientists think that there are 7.77 million species of animals in the world, living on the land, in the sky and in the sea. We have discovered and named about 1.4 million of the species.
- Humans can have both **positive** and **negative** impacts on animal and plant environments.
- **Positive impact** includes: nature reserves, protected ecological zones like the South Downs, looked after garden ponds.
- **Negative impact** includes: pollution, deforestation, overpopulation and development.

Living Things and their Habitats

Core Knowledge

Vertebrates

- **Mammals** have warm blood and have hair or fur on their bodies. Mammal babies are born alive and are fed milk by their mothers.
- **Amphibians** live on land and in water. They are cold-blooded and they have gills when they are young. Amphibians have smooth skin and they lay their eggs in water.
- **Birds** have a beak, wings, feathers, 2 legs and are warm blooded. They lay eggs on land.
- **Fish** live in water and have fins instead of legs and gills instead of lungs. They lay their eggs in water and they have cold blood and scaly skin.
- Some **reptiles** live on land, and some in water. They have lungs that breathe air, scales and are cold-blooded. Reptiles lay their eggs on land.

Invertebrates

- There are over 800 000 different types of **insects**. They have an exoskeleton covering their body, which they must shed in order to grow. Their bodies consist of 3 parts: the head, thorax and abdomen, and they have a pair of antennae on their head.
- **Annelids** have existed for over 120 million years. There are over 9,000 species, including worms and leeches. They have bodies divided into segments and they don't have any limbs.
- The most common **crustaceans** are crabs, lobsters and barnacles. Woodlice are also crustaceans. Crustaceans have a hard, external shell which protects their body, with a head and abdomen. They live mostly in the ocean or other waters. Many have claws that help with crawling and eating.
- **Molluscs** were among the first inhabitants of the Earth. They live on land or in water. Most have a soft, skin-like organ covered with a hard outside shell. Land molluscs move slowly on a flat sole called a foot. Ocean molluscs attach themselves to rocks or other surfaces, and can't move.
- Most **arachnids** have 4 pairs of legs. The first pair of legs may be used for holding their prey and feeding. Common arachnids are spiders, scorpions, ticks and mites. They have a hard exoskeleton and jointed legs for walking. Arachnids do not have antennae.

Key vocabulary

classification—the act or process of grouping things according to their type

classification key—a set of questions about the characteristics of living things. You can use a key to identify a living thing or decide which group it belongs to

properties—the characteristics of something e.g. meat-eater, furry, lives in a tropical climate, gives birth to live young, etc.

variation—the differences between living things within a species

habitat—the natural home or environment of an animal, plant, or other living organism

species— a kind or sort of living thing sharing common attributes and a common name e.g. human beings

diet—the food that an animal eats regularly

Organism—this is another word that can be used to mean ‘living thing’

Environment—an environment contains many habitats

Life processes—The things that all living things do, to stay alive

Endangered species—A plant or animal where there are not many of a species left and scientists are concerned that the species may become extinct

Extinct—When a species has no more members alive on the planet, it is extinct

As scientists we will

- Recognise that living things can be grouped in a variety of ways
- Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment
- Recognise that environments can change and that this can sometimes pose dangers to living things.
- Ask relevant questions and use different types of scientific enquiries to answer them.

