

### Key Facts

Children should know that living things belong to different groups (such as animals: vertebrates, invertebrates; plants: flowering plants, ferns, mosses) but they will not be aware of all of the groups nor of how they relate to each other.

Classification is not the same as identification. During classification the emphasis is on the similarities of objects which demonstrate that they belong to the same group.

Plants are classified into five main groups (Divisions) and then at different levels in a similar way to animals.

Animals are classified into two main groups (vertebrates and invertebrates).

Micro-organisms, or microbes, are living things.

The five kingdoms of living things are: Animalia - animal kingdom; Plantae - plant kingdom; Fungi - fungi kingdom; Protista - single-celled organisms with a nucleus (microorganisms such as slime mould and algae are part of this kingdom); Monera - single-celled organisms without a nucleus (microorganisms such as bacteria are part of this kingdom).



## Science

### Year 6

### Autumn 1

## The Nature Library

### Vocabulary

Word	Definition
Amphibian	An animal able to live on land and in water
Arthropods	An animal of the group that includes insects, spiders, crabs and centipedes
Characteristics	A quality that forms part of a person's or thing's character
Classify	Arrange into different groups
Identify	To recognise as being a certain person or thing
Invertebrate	An animal without a backbone
Mammal	An animal of which the female gives birth to live babies which are fed with milk from her own body
Micro-organisms	Bacteria or virus
Vertebrate	An animal with a backbone

### Common misconceptions:

Children often think that:

- The groups of living things are completely independent e.g. 'a fish is a fish, not animal' because they are not aware of how the groups relate to each other
- Fungi are plants but they are not because fungi cannot make their own food by photosynthesis.

### Knowledge and Understanding:

#### Children will learn:

- Children explore the process of classification in some detail and how it differs from, but relates to, the identification of living things.
- The structure, function and purpose of classification systems will be explored with specific reference to living things.
- Children will become aware of the types and characteristics of organisms that belong in each of the five kingdoms of living things (animals, plants, fungi, bacteria and Protista) and the major sub-groups the kingdoms include.
- Although they will devise their own systems of classification, children will learn about how Linnaeus developed the system for classifying all living things using their observable characteristics.

### Key skills and concepts:

#### Children will be able to:

- When working scientifically, children will use observations and secondary source material to help classify living things, record plants and animals in the school environment and use evidence to support or refute ideas.
- They will use a range of approaches to present and communicate their findings to others including questioning themselves and their peers, evaluating the strength of evidence used to support arguments.

### Key Questions

What groups do we put living things into?

Why do you think we need to sort living things into groups?

Do you think it is easy?

What characteristics do plants have in common that could put them in the same groups?

How might you use the characteristics to sort a large number of plants?

In what ways are invertebrates different from vertebrates?

Are all invertebrates the same?

What do you think is the smallest living thing you can see?

Do you think there are things that are even smaller?

In what type of conditions do you think moulds grow best?

Why might investigating microorganisms be particularly difficult?

Do you think scientists always agree? What makes you say that?

How would you go about classifying an unknown plant or animal? What would you do?

What sort of information would you need?

Why do living things become extinct?