



Topic: Living things and their habitats

Year 6

Strand: Biology

What I should know by the end of this unit:

- How living things are classified into broad groups according to their characteristics and based on similarities and differences, including microorganisms, plants and animals
- Reasons why plants and animals are classified based on specific characteristics

Classification

Scientists believe that there could be as many as 10 million different species on Earth. It would be very hard to study the lives and behaviours of all these living things without grouping them together somehow.

Scientists sort and group living things according to their similarities and differences. This is called classification. Scientists who classify living things are called taxonomists.

Grouping living things

Animals can be put into one of two groups:

- Vertebrates
- Invertebrates

These two groups can be split into further, smaller groups.

Vertebrates can be split into:

Mammals, birds, fish, reptiles and amphibians

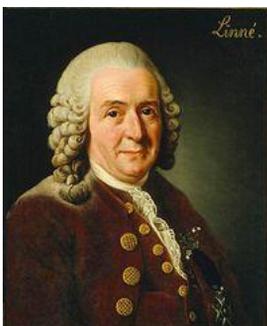
Invertebrates can be split into:

Insects, arachnids, annelids, molluscs, crustaceans and echinoderms

Carl Linnaeus

Carl Linnaeus was a Swedish scientist who believed it was very important to have a standard system of classification. At the time he was alive, in the 1700s, there was no agreed standard method.

In 1735 he published his first edition of 'Systema Naturae', which described his system for classifying living things. Linnaeus' original system of classification classified everything in nature into a hierarchy.



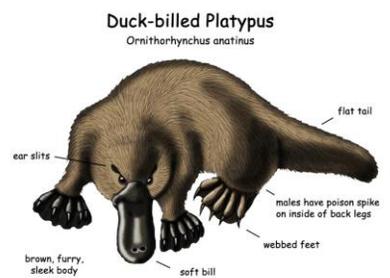
Key Vocabulary

| Spelling | definition |
|----------------|---|
| Chlorophyll | The green colouring matter found mainly in the chloroplasts of plants that absorbs energy from sunlight to produce carbohydrates from carbon dioxide and water during photosynthesis. |
| Classification | Grouping something using its features |
| Distinguish | Recognise a difference |
| Species | A group of animals, plants or other living things that all share common characteristics |
| Taxonomy | The part of science focused on classification |

Curious creatures

When a new species of animal is discovered, taxonomists observe its characteristics to decide how to classify it. However, some animals are so unusual that taxonomists struggle to classify them.

The platypus was discovered in 1797 and scientists around the world joined the attempt to classify this unusual animal. It seemed to have characteristics from several different types of animals





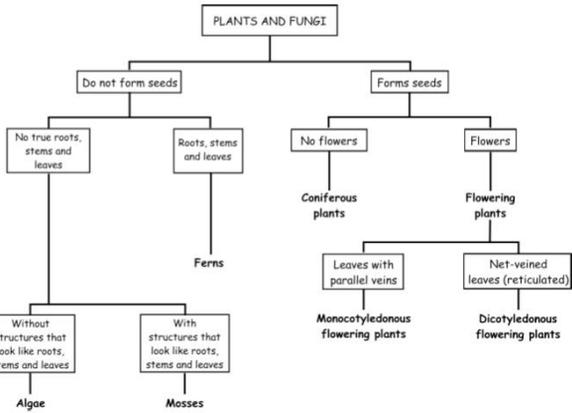
Topic: Living things & their habitats

Year 6

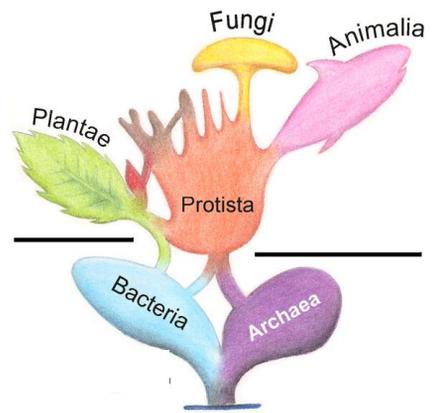
Strand: Biology

Classifying Plants

There are around 400,000 species of green plants. Every member of the plant kingdom contains the chemical **chlorophyll** which they use to make their own food and which makes them green.



The first big division of living things is to put them into one of the five kingdoms



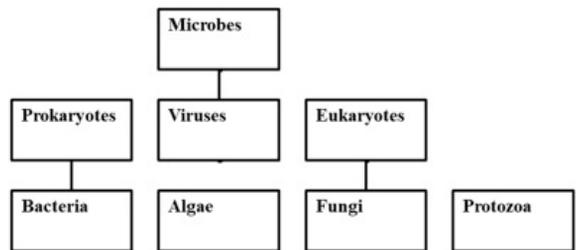
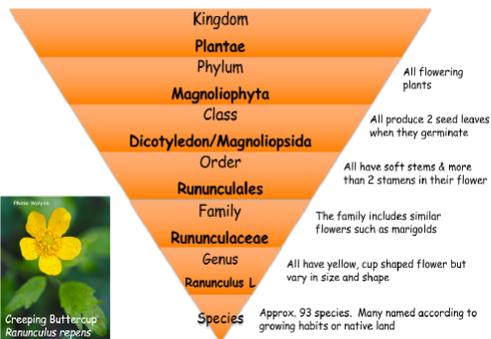
Classifying Microorganisms

Microorganisms are very tiny living things. They are so small that they are not visible to the naked eye, so a microscope is needed to see them.

All microorganisms share similarities and differences and can be classified using the Linnaean taxonomic system.

Classification of the buttercup

Classification of the Buttercup



Kingdom Fungi: Mushrooms
Look like plants, but do not produce their own food

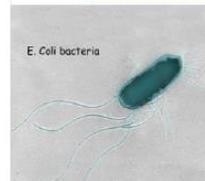
Kingdom Protista: algae
Most common in water and on surfaces of moist soil, wood & rocks



Kingdom Monera (bacteria)

- Single-celled organisms
- Can cause illness
- Can also be helpful - bacteria are used to make cheese and yoghurt!

There are 40 million bacterial cells in just 1 gram of soil





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Year 6

Strand: Biology

| Which of these is not a vertebrate? | Start of unit | End of unit |
|-------------------------------------|---------------|-------------|
| Bird | | |
| Mammal | | |
| Reptile | | |
| amphibian | | |

| Give an example of a microorganism | Start of unit | End of unit |
|------------------------------------|---------------|-------------|
| | | |
| | | |
| | | |

| Name one thing that makes these animals similar and one thing that makes them different. | Start of unit | End of unit |
|--|--|-------------|
| | <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  lion </div> <div style="text-align: center;">  tiger </div> </div> | |
| similar | different | |

| Give an example of when microorganisms can be helpful | Start of unit | End of unit |
|---|---------------|-------------|
| | | |

| Give an example of when microorganisms are harmful | Start of unit | End of unit |
|--|---------------|-------------|
| | | |

| Give an example of how food is preserved to stop it going mouldy | Start of unit | End of unit |
|--|---------------|-------------|
| | | |