

Science Knowledge Organiser - Year 6

Unit: How and why are living things classified?

Key Vocabulary:

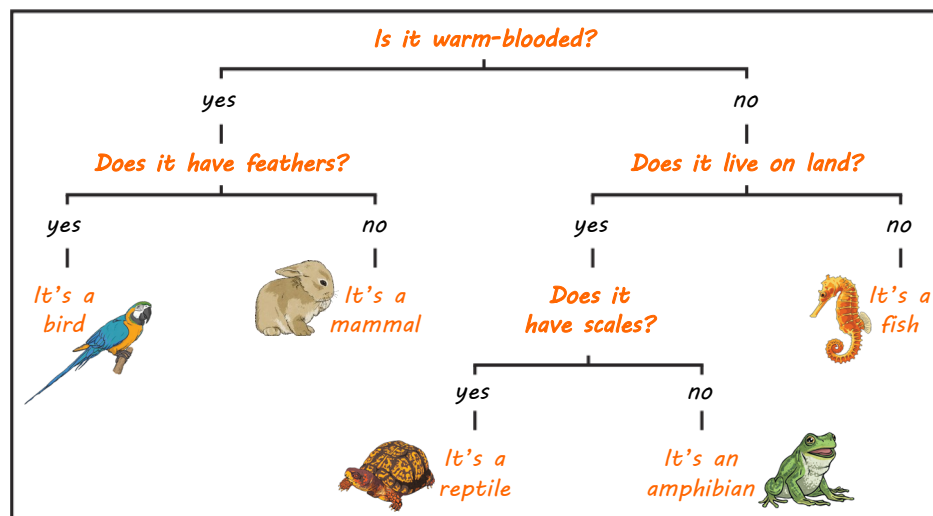
annelid	An annelid is a segmented worm, such as an earthworm or leech.
arachnid	Arachnids are a class of joint-legged invertebrates, such as spiders or scorpions.
bacteria	Bacteria are microscopic single-celled organisms.
characteristics	Characteristics are special qualities or appearances that make an individual or group of things.
classify	To classify things means to sort them into different groups.
crustacean	Crustaceans are a class of joint-legged invertebrates, such as crabs or lobsters.
key	A key is a series of questions about the characteristics of living things.
microorganism	A microorganism is an organism that can only be seen using a microscope.
microscope	A microscope is a piece of equipment that is used to view very tiny (microscopic) things by.
mollusc	Molluscs are a class of invertebrates, such as snails, slugs and octopuses.
organism	An organism is an individual animal, plant or single-celled life form.
species	A species is a group of animals that can reproduce to produce fertile offspring.
taxonomist	Taxonomists are scientists who classify different living things into categories.

Science Skills:

- Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals.
- Give reasons for classifying plants and animals based on specific characteristics.
- Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.
- Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.
- Report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as display and other presentations.

Key Facts:

- Scientists believe that there could be as many as 10 million different **species** on Earth!
- A **key** is used to identify a living thing or decide which group it belongs to by answering 'yes' or 'no' questions.
- All living things can be **classified** into groups based on very basic, shared **characteristics**.
- Characteristics** such as appearance, reproduction, mobility, and functionality are just a few ways in which living **organisms** are grouped together.
- Some **microorganisms** can be helpful in certain situations. Others can be harmful, and their spread needs to be controlled or contained.



Scientists, called **taxonomists**, sort and group living things according to their similarities and differences.

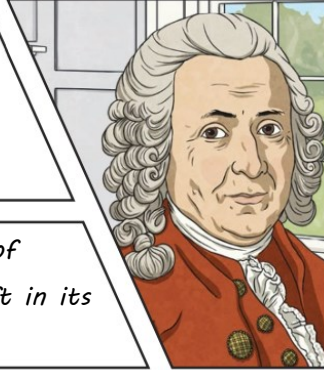
Here is an example of a **key** used to identify types of vertebrate.

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Classification

In 1735, Swedish scientist Carl Linnaeus first published a system for **classifying** all living things. An adapted version of this system is still used today: The Linnaeus System.



Living things can be **classified** by these eight levels. The number of living things in each level gets smaller, until the one animal is left in its species level. This is how a dog would be classified.

Domain: Eukarya

jackal, clownfish, cat, dog, ladybird, daisy, rabbit, fox

Kingdom: Animals

jackal, clownfish, cat, dog, ladybird, rabbit, fox

Phylum: Chordata

jackal, clownfish, cat, dog, rabbit, fox

Class: Mammals

jackal, cat, dog, rabbit, fox

Order: Carnivore

jackal, cat, dog, fox

Family: Canidae

jackal, dog, fox

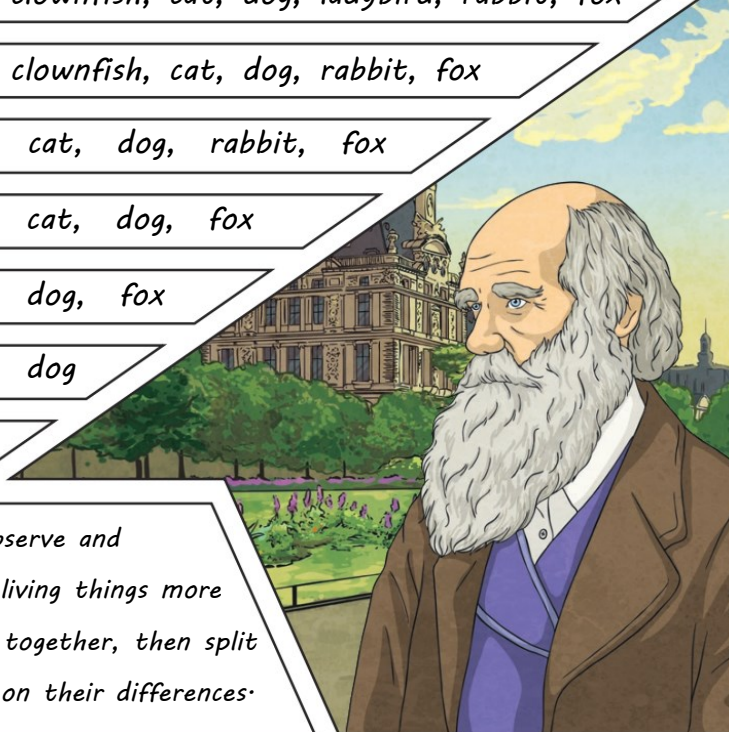
Genus: Canis

jackal, dog

Species: Lupus

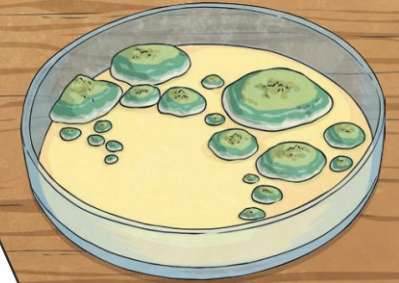
dog

Each group allows scientists to observe and understand the **characteristics** of living things more clearly. They group similar things together, then split the groups again and again based on their differences.

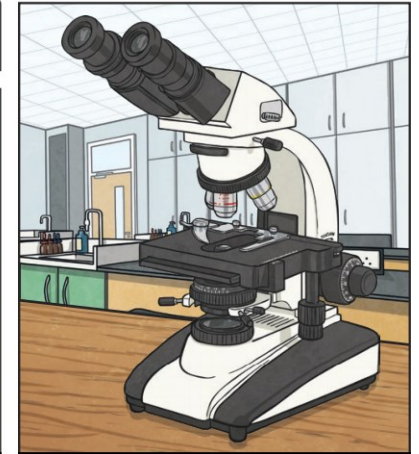
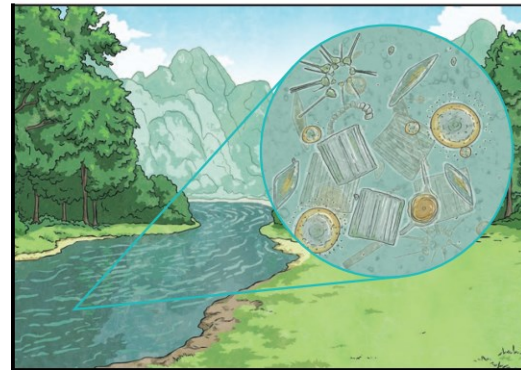


Microorganisms

Microorganisms are viruses, **bacteria**, moulds and yeast. Some animals (dust mites) and plants (phytoplankton) are also microorganisms.



Microorganisms are very tiny living things that can only be seen using a **microscope**. They can be found in and on our bodies, in the air, in water and on objects around us.



Microscopic Images

