

UKS2 Science Knowledge Organiser: Living things and their habitats

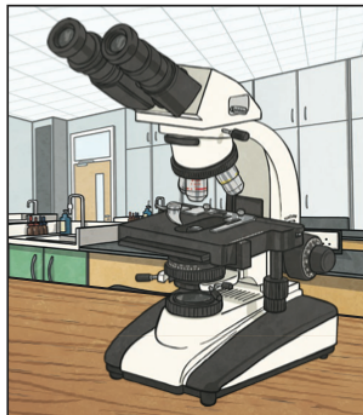
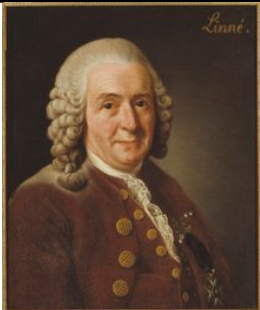
By the end of this unit, I will be able to:

- Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.
- Describe the life process of reproduction in some plants and animals.
- Describe how living things are classified into broad groups and give reasons based on certain characteristics.
- Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.
- Record results using scientific diagrams and labels
- 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 displays and other presentations.
- Identify scientific evidence that has been used to support or refute ideas or arguments.

What I have already learnt in Science:

- Identify and describe the functions of different parts of flowering plants.
- Identify requirements for plant life and growth.
- Recognise living things can be grouped in a variety of ways and give reasons for classifying plants and animals.

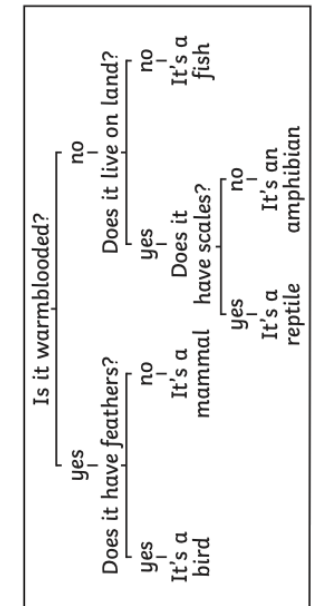
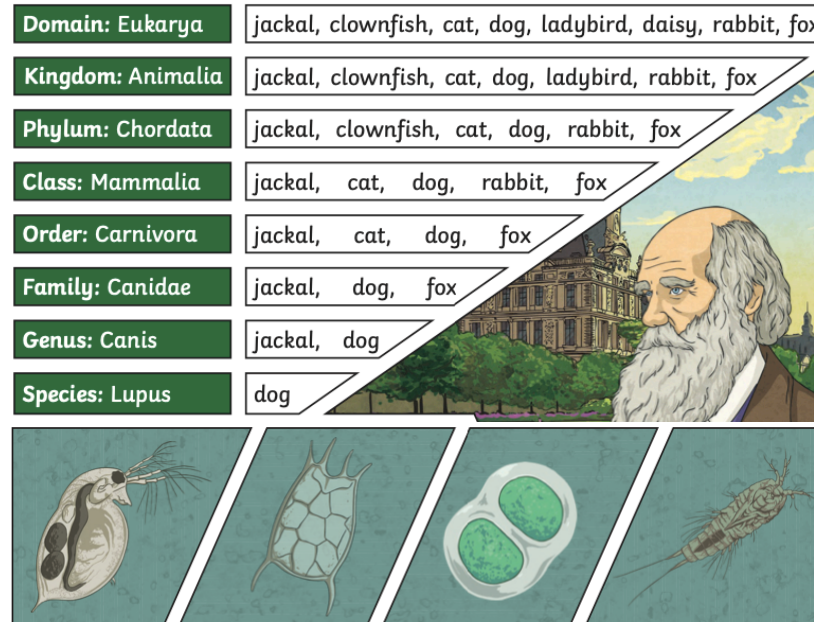
Carl Linnaeus



Key Vocabulary & Concepts

Key characteristics	The qualities or features of a person or thing that belong to them and make them recognisable.	Microscope	A piece of equipment which is used to view very tiny (microscopic) things by magnifying their appearance.
Linnaean system	A way of organising living things.	Bacteria	A single-celled microorganism.
Classify	To sort things into different groups.	Microorganism	An organism that can only be seen using a microscope i.e. bacteria, mould, yeast.
Taxonomist	A biologist that groups organisms into categories.	Species	A group of organisms capable of exchanging genes.

Key Diagrams





Key Stage: UKS2

Subject: Science

Term: Autumn

Unit Title

Learning objectives

Living things and their habitats:

- Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.
- Describe the life process of reproduction in some plants and animals.
- Describe how living things are classified into broad groups and give reasons based on certain characteristics.

Working Scientifically:

- Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.
- Record results using scientific diagrams and labels
- 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 displays and other presentations.
- Identify scientific evidence that has been used to support or refute ideas or arguments.

Key Concept

Teaching Activity

Task or Activity

WALT

Vocabulary

Assessment

<p>Classification</p>	<p>Talk through new Knowledge organiser.</p> <p>Wordwall quiz.</p> <p>What is classification? Explain classification using the lesson presentation.</p> <p>Sorting and grouping- Children discuss how to sort and group the snacks shown on the Lesson Presentation. Guide the children through splitting the snacks into smaller and smaller groups.</p>	<p>Children act as taxonomists to classify animals for a new zoo, by sorting and grouping the animals on the differentiated Zoo Animals List.</p> <p>Children discuss how they classified the animals with the members of their group. Groups discuss whether and why taxonomists may use a single, standard method of classification.</p>	<p>To classify plants and animals based on specific characteristics.</p>	<p>Classify, sort, group, similarities, differences, compare.</p>	
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<p>Linnaean System</p>	<p>A Standard System: Children discuss why it is important to have a standard system of classification. Ask children to discuss possible problems caused by not following a standard system.</p> <p>Who Was Carl Linnaeus? Describe Carl Linnaeus and his work on the classification system.</p> <p>Explain the Linnaean system of classification using the information and diagrams on the Lesson Presentation.</p>	<p>Classification Quiz: Children work in groups to compete in a quiz about the Linnaean system of classification.</p> <p>Classifying Species Activity: Children choose one of the living things from the list on the Lesson Presentation. Children use books or the Internet to research the living thing and complete the Classifying Species Activity Sheet showing how the species is classified at each level of the standard system. Children give the scientific name of their chosen living thing using the genus and the species.</p>	<p>To describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals.</p>	<p>Carl Linnaeus, Linnaean, classification, standard, domain, kingdom, phylum, class, order, family, genus, species.</p>	
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<p>Field guide</p>	<p>Today the children will be going out onto the field to use their knowledge of classification to make a list of living things around the school to help them create an "Alverton School Field Guide".</p>	<p>Explore the Habitat: Children work in pairs to identify living things in the habitat around their school. Remind children not to touch or eat any of the organisms they find. Children use the Local Species Activity Sheet to keep a list of the plants and animals they find, using the Plants and Animals ID Sheets (or Seek iNaturalist app if its downloaded) to help them identify some of the species they may find.</p> <p>Children use the differentiated Field Guide Activity Sheet to create their own Field Guide to the habitat around their school. Children should classify the organisms they found and add them to the correct area of the Field Guide.</p>	<p>To give reasons for classifying plants and animals based on specific characteristics.</p>	<p>Classify, organism, species, vertebrates, invertebrates, mammals, birds, amphibians, reptiles, fish, insects, arachnids, molluscs, crustaceans, annelids, plants, flowering, non-flowering.</p>	
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<p>Micro-organisms life cycle</p>	<p>What are Microorganisms? Describe and explain microorganisms and describe the examples of microorganisms shown on the Lesson Presentation.</p> <p>Helpful or Harmful? Describe the helpful and harmful uses and effects of microorganisms using the images.</p> <p>What Makes Mould Grow? Explain the mould investigation described on the Lesson Presentation. Describe the examples of variables they may choose to change in their investigation.</p>	<p>Children complete the differentiated Mould Investigation Activity Sheet with their chosen variable, their question and their prediction.</p>	<p>To 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.</p>	<p>Microorganism, fungus, bacteria, virus, microscopic, mould.</p>	
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<p>Micro-organism experiment</p>	<p>Forming Conclusions: Children observe their slices of bread from the mould investigation set up in Lesson 4. Children complete the differentiated Conclusion Activity Sheet with their conclusion and answer to their question.</p> <p>Which Conditions Cause Mould to Grow? Children move around the classroom to talk to other pairs about their conclusions. Children complete the Conditions for Mould Growth section of their Conclusion Activity Sheet using the information they find out from their classmates.</p>	<p>Identifying Cells: Children talk to their partner about the cells shown on the Lesson Presentation, and attempt to identify which is a fungus cell and which is a bacterium cell.</p>	<p>Identify the characteristics of different types of microorganisms.</p>	<p>Microorganism, cell, eukaryote, nucleus, DNA, fungus, virus, bacteria.</p>	
<p>(Optional) Fun Christmas experiment</p>	<p>Grow your own crystal wreath ornament.</p> <p>https://www.steampoweredfamily.com/kid-made-crystal-wreath-ornaments/</p>	<p>Resources: Green garland pieces Ribbon, Salt Hot Water Large Bowl Chop stick or other stick Decorative pieces like ribbons, bells, etc.</p>			