Year 6 – Living things and their habitats	**Main Outcomes:** • 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.	**Focus:** Science – biology

What should I already know?

- Living things can be grouped and classified in different ways, using keys to help.
- The features of invertebrates such as insects, spiders, worms and snails.
- The features of vertebrates such as birds, fish, mammals, reptiles and amphibians.
- The differences in the life cycles of a mammal, an amphibian, an insect and a bird.
- The life process of reproduction in some plants and animals.

What I will do

I will have weekly or blocked science lessons. In lessons, I will be taught a skill and I will gain knowledge and understanding through the process of scientific enquiry (observing over time; pattern seeking; identifying, classifying and grouping; comparative and fair testing (controlled investigations); and researching using secondary sources).

Possible lines of enquiry

- Find out about the significance of the work of scientists such as Carl Linnaeus, a pioneer of classification.
- Use classification systems and keys (in further detail than in year 4) to identify some animals and plants in the immediate environment, introducing the idea that broad groupings, such as micro-organisms, plants and animals can be subdivided.
- Research unfamiliar animals and plants from a broad range of other habitats and decide where they belong in the classification system.
- Through direct observations where possible, classify animals into commonly found invertebrates (such as insects, spiders, snails, worms) and vertebrates (fish, amphibians, reptiles, birds and mammals).
- Discuss reasons why living things are placed in one group and not another.

Vocabulary	Meaning
class	one of the eight major hierarchical (multi-level) **taxonomic** ranks in **Linnaean taxonomy** between **phylum** and **order**
classification/ classifying	putting things into **groups**
(branching) classification key	questions that let us find out which **groups** living things belong to
differences	a way in which two or more things are dissimilar
family	one of the eight major hierarchical (multi-level) **taxonomic** ranks in **Linnaean taxonomy** between **order** and **genus**
genus	one of the eight major hierarchical (multi-level) **taxonomic** ranks in **Linnaean taxonomy** between **family** and **species**
group	a number of individuals assembled together or having some unifying relationship (**similarities**)
kingdom	the second highest of the eight major hierarchical (multi-level) **taxonomic** ranks in **Linnaean taxonomy** between domain and **phylum**; living things are divided into five kingdoms: animal, plant, fungi, protist and monera
Linnaeus	a Swedish naturalist who created two scientific systems: the system for **classifying** plants and animals, and the system for naming all living things
micro-organism	tiny living things too small to be seen with the naked eye; more commonly known as 'germs', 'bugs' or 'microbes'
organism	an individual animal, plant, or single-celled life form
observations	using our senses to gather information about the world around us daily
opinion	a view or judgement formed or made about something or someone that isn't necessarily based on something that is factual
order	one of the eight major hierarchical (multi-level) **taxonomic** ranks in **Linnaean taxonomy** between **class** and **family**
phylum	one of the eight major hierarchical **taxonomic** (multi-level) ranks in **Linnaean taxonomy** between **kingdom** and **class**
similarities	a sameness or alikeness
species	the lowest of the eight major hierarchical (multi-level) **taxonomic** ranks in **Linnaean taxonomy** below **genus; species** refers to a **group** of **similar organisms** that are able to reproduce
support/refute	to prove right (support) or wrong (refute) by argument or evidence
taxonomy	the science of naming and classifying **organisms**

Resources

Hamilton Science planning: living things and their habitats https://www.hamilton-trust.org.uk/science/year-6-science/classification-connoisseurs/ (all planning also saved on SharePoint).

Knowledge and Skills Map – Science at Estcots School

Knowledge to understand	
Carolus **Linnaeus** was a Swedish naturalist.	He created two scientific systems: the system for **classifying** plants and animals and the system for naming all living things. Linnaeus is also called the Father of Systematic Botany.
Classification means putting things into **groups** based on the features they share. This makes them easier to identify and study.	 **Fig 1. The Five Kingdoms.** Plants, animals, fungi, protists and prokaryotes make up the five kingdoms. Animals can't make their own food. They can move around. Micro-organisms are extremely small (e.g. bacteria). Plants can make their own food. They are fixed in the ground.
Plants are sub-divided into flowering and non-flowering.	Examples of non-flowering plants include conifers, mosses and algae. Examples of flowering plants include deciduous trees, shrubs, cereals and grasses.
Animals are sub-divided into invertebrates and vertebrates.	Invertebrates include spiders (2 body parts, 8 legs), worms (no legs or antennae), snails and slugs (shell and slimy foot), and insects (3 body parts, 6 legs). Vertebrates include fish (fins, scales, breathe with gills), birds (wings, feathers), mammals (body hair/fur, give birth to live young), reptiles (dry, scaly skin, lay eggs on land), and amphibians (damp skin, lay eggs in water).

Skills to learn

- planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
- recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
- reporting and presenting 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
- identifying scientific evidence that has been used to support or refute ideas or arguments

Equipment to become familiar with

Classification systems/keys

Magnifying glasses

Cameras

Evidence of Learning

Science books
Photos
Videos
Pupil conferencing
Teaching and learning observations
Learning walks
Data analysis

How will I know what I've learnt?

See KS2 teacher assessment exemplification for science

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/763065/2018_key_stage_2_teacher_assessment_exemplification_science.pdf

See also Hamilton Science_Assessment_Y6 (saved in planning folder on Sharepoint).

KS2 quizzes:

https://gcequiz.com/quiz/ks2-science-quizzes

https://churchfieldsjunior.com/test-your-skills-science/