Living things and their habitats

Science Knowledge Organiser   Year 4   Term 6

Key questions

How can living things be classified?

Why do scientists classify living things into groups?

What are vertebrates and invertebrates? How are they similar? How are they different?

What is a habitat?

What makes an ecosystem? How are ecosystems impacted by human activity?

Key people

Cindy Looy - Environmental Change and Extinction researcher

Jaques Cousteau - Marine Biologist

Key Knowledge

What I should know already...

The difference between things that are living, dead and things that have never been alive. – Living – all have life processes breathe, sense, grow, make babies, get rid of waste and get energy from food, Dead – were once living but now don't have any of the life processes, never living – made from metal or rock, never had the life processes.

That most living things live in habitats to which they are suited and how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other.

Identify and name a variety of plants and animals in their habitats, including micro habitats.eg birds – woodland, penguins – Antarctica, worms – under leaves.
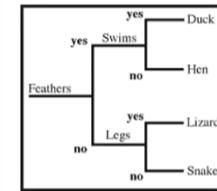
What I will know at the end of this unit

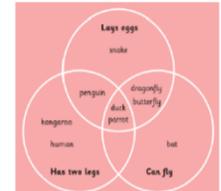| How can living things be classified?	The billions of different kinds of living things (organisms) on earth have been divided up, by scientists, into groups according to their similarities and differences. This is known as classifying. Animals are split into vertebrates – mammals, fish, birds and reptiles. Invertebrates – insects, spiders, worms, slugs and snails. Plants can also be classified as flowering plants and non-flowering plants.	What is a habitat?	A habitat is the non-living environment surrounding a living thing. It provides space, shelter, food and water.
Why do scientists classify living things into groups?	Classifying living things into groups allows scientists to learn more about what makes each species unique.	What makes an ecosystem?	An ecosystem is made up of the living organism and the non-living habitat. An ecosystem can be any size from a tree to the whole world.
What are vertebrates and invertebrates? How are they similar? How are they different?	• There are many different classes of animals. Those with backbones are known as the 'class' vertebrates. These are then grouped into mammals, birds, fish, reptiles and amphibians. • Invertebrates, animals without backbones, are arachnids, insects, snails and slugs and worms.	How are ecosystems impacted by human activity?	Changes to the ecosystem can be natural or caused by humans. Here are some examples of how human activity can impact an ecosystem. • deforestation • pollution • Urbanisation • the introduction of new animal or plant species to an environment Plants and animals rely on the environment to give them everything they need. Therefore, when habitats change, it can be very dangerous to the plants and animals that live there.

Diagrams

Classifying Plants and Animals

Animals can be sorted, or classified, in a number of different ways. A 'branched' diagram or a venn diagram, like those shown below, are just two examples.

Branched Diagram   Venn Diagram

Key vocabulary

<u>Organism</u> - An individual living thing, such as a plant, an animal, or a bacteria.
<u>Classification</u> - putting into groups according to things that are similar.
<u>Classification key</u> - a **set of questions** about the characteristics of living things.
<u>Unique</u> - Being the only one of its type.
<u>Vertebrate</u> - Having a backbone.
<u>Invertebrate</u> - Without a backbone.
<u>Mammal</u> - Any animal that has hair and feeds its babies with milk from the mother.
<u>Habitat</u> - The natural environment of an animal or plant.
<u>Ecosystem</u> - A community of living things, together with their environment.

Useful web links

Classification key explained https://www.bbc.co.uk/bitesize/topics/zxjj6sg/articles/z9cbcwx
Animal classification https://www.youtube.com/watch?v=ITrRMiQB8g4