Year 4 Science - Living Things and their Habitats

How can we identify and name living things in our environment and use classification keys to assign groups?
How can environments change and why can this sometimes be dangerous to living things?

What should I already know?

Animals can be groups into **vertebrates** (and then further into fish, reptiles, amphibians, birds and mammals) and **invertebrates.**
Animals can be grouped into **carnivores, herbivores** and **omnivores.**
The differences between the teeth of carnivores and herbivores.
The names of some common wild and garden plants and **deciduous** and **evergreen** trees.
Examples of **habitats** (including **microhabitats**) and the animals and plants that can be found there.
Living things depend on each other to survive
How land use has changed over time and the effects this has on the **environment** (e.g. urban development).

Cross- Curricular links

Links to English work on The Promise by Nicola Davies, maths work on sorting data and art work based on habitats.

Vocabulary

Adapt – special features that help an organism to survive in its habitat
Carnivore – an animal that eats meat
Classification key – a system which divides things into groups or types
Criteria – a factor on which something is judged
Cuttings – pieces broken off from plants that are grown as another plant
Deciduous – trees that loose leaves in the autumn every year
Environment – the surroundings that a person, plant or animal lives in
Evergreen – a tree or bush which has green leaves all year round
Excretion – the process of eliminating waste from the body
Exoskeleton – an external skeleton
Endoskeleton – An internal skeleton
Food chain – the way animals and plants link together by what they eat
Habitat – the natural environment in which a plant or animal lives/ grows
Herbivore – an animal that only eats plants Interdependent – organisms that are dependent on each other
Invertebrate – a creature that does not have a spine
Life processes – there are 7 processes that tell us things are alive
Life cycle – the different stages in the life of a plant or animal
Microhabitat – a small part of the environment that supports a habitat
Minibeast – a small invertebrate animal such as an insect or spider
Nutrition – the process of taking food into the body
Omnivore – an animal that eats meat and plants
Organism – a living thing
Reproduction – when an animal/plant produces more individuals
Respiration – the process of breathing
Urban – relating to a town or city
Vegetation – plants, trees or flowers
Vertebrate – a creature with a spine

What I will know at the end of the topic

How can living things be grouped?

Living things, which can also be called organisms, have to do certain things to stay alive. These are the life processes:

- Movement
- Respiration
- Sensitivity
- Growth
- Reproduction
- Excretion
- Nutrition

Living things can be grouped according to different criteria (where they live, what type of organism they are, what features they have).

What is the difference between a vertebrate and an invertebrate?
Vertebrate have a back bone, invertebrate don't have a back bone.

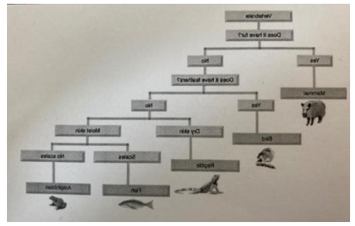
How can living things be grouped using scientific vocabulary?
For example, a camel can belong in a group of vertebrate, a group of animals that live in the desert and a group of animals that have four legs.

How can we compare animals using scientific vocabulary?
E.g. Amphibians are different from reptiles because they lay eggs in water and the young are different from the adults. Beetles are insects because they have 6 legs, woodlice and crabs are crustaceans. Trees have a trunk – a stem made from wood with bark on the outside. Birds are similar to reptiles because birds evolved from dinosaurs which were reptiles.

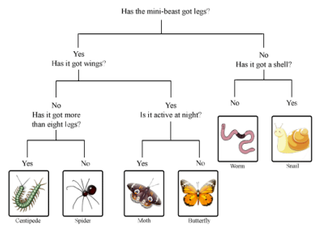
What is a classification key?

What is a classifcation key?
A classification key is a tool that is used to group living things to help us idenitfy them. The features of plants or animals can be use to create branching key questions with yes/ no answers e.g. Is it a brown colour? Does it have 6 legs?

How can we create a branching classification key to idenitfy different plants and animals?
Example to sort vertebrate into the 5 different groups.



Example to sort minibeast

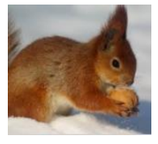


How can habitats change?

A habitat is the natural environment in which a plant or animal normally lives.

With reference to requirements for staying alive, what must a habitat provide for a plant or animal?
The conditions of the habitat are important for the plant or animal to grow and survive. The habitat must provide food, shelter and allow for reproduction.

How do some habitats change throughout the year and what impact can this have on the plants and animals that live there? How can this be seen in the local area?
Habitats can change throughout the seasons and this can have an impact on the plants and animals that live there. Some animals may adapt to this change e.g. growing thicker fur or storing food, plants may die off and remain dormant.



How can humans impact the environment for plants and animals both positively and negatively?
Humans can have a positive and negative effect on environments. For example, positive effects could be creating nature reserves and ecological parks. Whereas negative effects could be dropping litter and urban development. Loss of animal habitats can impact humans e.g. damaging air quality or by affecting food supply.

Investigate

Using and creating classification keys to sort animals and trees/ plants including those found in the school environment.
Observations of animals (mainly insects/ mini beasts) in the natural environment.
Creating choice chambers for different animals e.g. insect – predict, hypothesis and observe the behaviour of the animals.
Hypothesising about animal habitats outside of our local area.
Observations of how changes in the local area will have impacted on habitats
Matching plants to their environment in order to create a new green space within the school grounds (linked to The Promise launch)

Famous Scientists

Carl Linnaeus – pioneer of classification
Jane Goodall – behaviour of chimpanzees
Dian Fossey – Research into endangered Gorilla's in Rwanda
Charles Darwin- English naturalist and geologist best known for his contributions to evolutionary theory
Rachel Carson – American marine biologist credited with advancing the global environmental movement
David Attenborough – Broadcaster and natural historian
Chris Packham – Autumn Watch