Knowledge Organiser

Year: 4 Subject: Science Unit: Living Things and Their Habitats

Overview:
During this sequence of learning, pupils will recognise that living things can be grouped in different ways, explore and use classification keys to help group living things and understand that environments can change, which poses a danger to living things.

What should I already know?

- Living things move, grow, consume nutrients and reproduce.
- Polar bears are an example of an animal adapted to its environment e.g. thick fur for warmth.
- Herbivores eat plants, carnivores eat meat and omnivores eat plants and meat.
- Fish, amphibians, reptiles, birds and mammals are similar in that they have internal skeletons and organs; these are known as vertebrates, which means they are animals that have a backbone.
- Fish are different in having gills so that they can breathe underwater and have scaly skin.
- Amphibians are different in that they begin their lives with gills but then develop lungs and breathe on land.
- Reptiles are different in that they breathe air and have scaly skin.
- Birds are different to other animals in that they have feathers and wings.
- Mammals are different to other animals in that they have fur/hair and they feed milk to their young.

What will I know by the end of the unit?

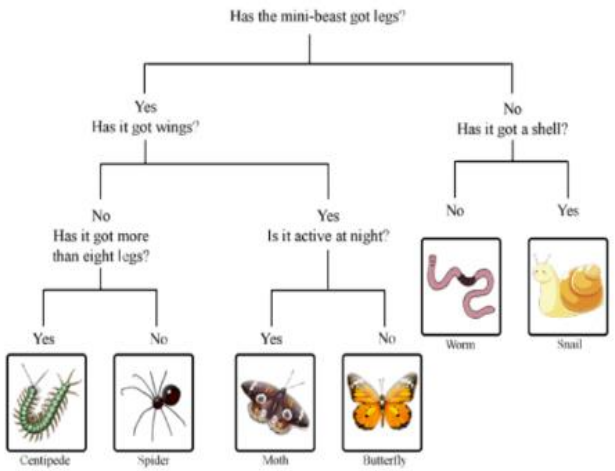
- Habitats change throughout the year with the seasons.
- Animals can be grouped based on their physical characteristics (e.g. vertebrates and invertebrates) and based on their behaviour (e.g. herbivores, carnivores and omnivores).
- Living things are divided into kingdoms: the animal kingdom, plants, fungi, bacteria, and single-celled organisms.
- A species is a group of living things that have many similarities and can reproduce together to produce offspring.
- A classification key uses questions to sort and identify different living things (see example below).

Vocabulary:

environment (revision)	The physical surroundings are known as the environment.
vertebrate (revision)	An animal with a backbone.
Invertebrate (revision)	An animal without a backbone.
microhabitat (revision)	A small habitat e.g. under a log.
kingdom	A way of classifying living things – there are 5 kingdoms (animal kingdom, plants, fungi, bacteria and single celled organisms).
classification key	A way of grouping living things by answering questions about their characteristics.
species	A group of things of the same kind with the same name.
fungi	A living thing that lives on dead or decaying matter.
bacteria	Single celled micro-organism that live in soil, water or the bodies of plants or animals.
climate change	When there is a big difference in the normal pattern of climates over a long period of time. Currently, scientists are observing that the Earth's surface is warming.

- How to use a classification key to identify living things.
- How to create a classification key to sort plants on the school premises.
- Negative changes to the environment such as litter, deforestation and over population can make it more difficult for animals to survive and reproduce. In some cases, this can lead to extinction where an entire species can die.
- There can be positive changes to the environment such as building ponds and nature reserves which has a positive impact on species that live there.
- When a species becomes extinct, this can have implications on other species in the food chain e.g. if rabbits became extinct, this could affect foxes as they eat rabbits.
- Human activity such as climate change caused by pollution can change the environment for many living things which can endanger their existence.
- The polar bear is a famous example of climate change endangering the existence of a species; as the climate changes and gets warmer, the sea ice on which polar bears live reduces in amount, making it harder for them to survive and reproduce.

<u>Example of a classification key:</u>



characteristics	A quality that makes someone or something different from others.
offspring	The young of a person, animal or plant.
extinction	When all of a species have died and there are no longer any e.g. dinosaurs are extinct.
pollution	To spoil a natural resource with waste from humans.