

Year: 2

Term: Autumn

Science – Living things and their habitats

Prior Knowledge

Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. (Y1 - Plants)

Identify and describe the basic structure of a variety of common flowering plants, including trees. (Y1 - Plants)

Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. (Y1 - Animals including humans)

Identify and name a variety of common animals that are carnivores, herbivores and omnivores. (Y1 - Animals including humans)

Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets). (Y1 – Animals, including humans)

Observe changes across the four seasons. (Y1 - Seasonal changes)

Key Knowledge:

Living things

All things can be split into three groups:

Things that are living, dead, or have never been alive. Living things are able to move, breathe, grow, have babies, get rid of waste and eat. They also need to be able to know when something changes e.g. gets colder or warmer (sensitivity). These ideas are ore difficult to understand with plants, because we cannot see them move, breathe, get rid of waster of make their own food. It is much easier for children to recognise these things in themselves, their pets and animals in the locality.

Habitats

Most living things live in an environment they are suited to. This is their natural environment, their habitat. Habitats can be very different. They can be hot or cold, wet or dry, on the ground or up high. The main habitats are grasslands, desert, polar, mountain, temperate forest (inc. UK woodlands), freshwater, ocean and rainforest.

<https://kids.nationalgeographic.com/explore/nature/habitats/>

Woodland habitat – local casestudy (Baggeridge)

- Badgers live in wooded areas in large setts deep under the ground. They are nocturnal and have a diet of earthworms, beetles, fruit and some small mammals. Badgers forage for their food rather than hunt. To build their setts badgers have adapted large, broad fore paws with long thick claws for digging amongst the roots of trees and create very deep holes in the earth. Badgers have a very striking colouring of black and white stripes, which is a very key adaptation influenced by their environment. The black and white stripes recreate the look of trees and branches in the dark.

- Fallow deer were introduced to British woodlands and parks nearly a thousand years ago from France. They have one hard palate on the top front jaw instead of teeth. And then they have several flat incisors to cut through the grass and leaves. They have large flat molars to grind the grass before ingesting. Although deer no longer have a natural predator they have still evolved to have large antlers to fight off the predators that once shared their habitat. Fallow deer's spotted fur makes it the master of camouflage, they can vanish in the woodland. Deer are very nervous creatures and have their eyes set to the side of their head for all round vision, essential when grazing in the open to keep watch for danger.

- Foxes live in dens under the ground. They dig deep underground to hide and keep warm and to keep their young away from predators. Foxes hunt alone for small mammals, birds, reptiles, insects, earthworms and fruit and vegetables. Foxes teeth are adapted to their natural diet. They have large thin canines to catch their prey, and large strong molars at the back to grind down bone and chew through meat. When looking at foxes one thing always stands out.. their large ears! Foxes have large forward

facing ears to help them focus on the sound of their prey. Foxes hunt using sound and will attack where the sound is coming from as their eyesight in the dark is not strong.

Other woodland animals include squirrels, owls, hedgehogs and doormice...

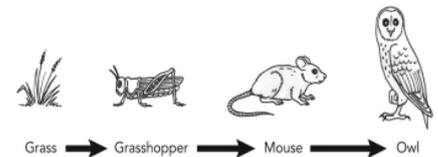
Unfamiliar habitats - how animals and plants and how they have adapted to suit their habitat.

Desert habitat – Cactii have long roots to find water that is deep in the ground and thin needle leaves that don't lose water.

Camels have humps to store water.

Polar habitat – polar bears have thick fur to keep warm and this is transparent so that it looks white to camouflage in the snow. (See clip from Frozen Planet about the North Pole and polar bears.)

Ocean habitat – whales have blubber to insulate them and blowholes to breathe



Here the Grass has made its own food. The Grasshopper gets energy by eating the grass. The Mouse get energy by eating the Grasshopper and the Owl gets its energy by eating the Mouse.

The arrow on a food chain means 'is food for'

Food chains

Animals get their food from plants and other animals. A food chain shows how energy from food is passed along. Only green plants make their own food, so every food chain starts with a green plant. If one element of the food chain changes, this can impact on the rest of the chain.

Key Vocabulary

Working scientifically key vocabulary – observe, test, magnifying glass, object, record, equipment

Word	Definition
Living/alive	Having, life; living.
Dead	No longer alive.
Habitat	The natural home or environment of a variety of plants or animals
Microhabitat	A very small habitat e.g. woodlice under stones, logs or litter
Nocturnal	Active at night
Adaptation	Evolutionary process that makes a living thing better able to live in its habitat
Hunt	To pursue and kill an animal for food
Food chain	Living things that are each dependent on the next as a source of food
Energy	Helps to make someone or something work or be active.
Hibernate	Spend the winter in a dormant state
Environment	The conditions around something.

Additional vocabulary to discuss across the unit - growth, birth, decay, reproduction, life cycle, source, nutrients, conservation

Key Skills:

Statutory requirements of Year 2 Programme of Study for Science

Pupils should be taught to:

- Explore and compare the differences between things that are living, dead, and things that have never been alive.
- Identify that most living things live in habitats to which they are suited and describe 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
- Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.

Future Learning	Key Outcomes
<p>Recognise that living things can be grouped in a variety of ways. (Y4 - Living things and their habitats)</p> <p>Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment. (Y4 - Living things and their habitats)</p> <p>Recognise that environments can change and that this can sometimes pose dangers to living things. (Y4 - Living things and their habitats)</p> <p>Construct and interpret a variety of food chains, identifying producers, predators and prey. (Y4 - Animals, including humans)</p>	<p>1. How do we know whether something is living, dead or has never been alive? <i>Children will explore things that are alive, dead, have never been alive. Then sort and classify things according to whether they are living, dead or have never been alive. Describe how they decided where to place things, exploring questions for example: 'Is a flame alive? Is a deciduous tree dead in winter?' and talk about ways of answering their questions.</i></p> <p>2. What do living things need to survive? <i>Children will understand that all living things have basic needs for survival (food, shelter and protection)</i></p> <p>3. Which microhabitats can we find in our school ground? <i>Children will investigate what a microhabitat is and identify them within the school grounds, making observations and identifying living things that they find using simple equipment and record their results in a tally chart.</i></p> <p>4. How do the conditions of a habitat effect what lives there? <i>Children will be able to explain in simple terms why an animal or plant is suited to a habitat e.g. the caterpillar cannot live under the soil like a worm as it needs fresh leaves to eat; the seaweed we found on the beach cannot live in our pond because it is not salty.</i></p> <p>5. What conditions do woodlice prefer? <i>Children will make predictions and then investigate the conditions for woodlice to flourish and be able to explain their findings through labelled diagrams and discussion.</i></p> <p>6. What lives in 'big' habitats? <i>Children research ocean, desert, polar regions and explore how plants and animals are adapted to suit these environment.</i></p> <p>7. How do food chains show how living things depend on each other? <i>Children will construct food chains that show how animals get their food from other animals and plants, including humans.</i></p> <p>8. Which food chains would we find in the microhabitats on our school grounds? <i>Children will use their knowledge from their previous investigations and learning, within this unit, to create food chains for the living things that they have discovered in the micro-habitats in the school grounds.</i></p> <p>9. Why are some habitats under threat and what can we do to help them? <i>Children use secondary sources to research why habitats are under threat and why this will have negative impacts – linking to food chains etc. They will create presentations to encourage people to help save these habitats in different ways.</i></p>