

Subject - Science

Topic name - Animals, including humans

Year group 2

Term - Spring

## Prior Knowledge

Identify and name a variety of common animals that are carnivores, herbivores and omnivores. (Y1 - Animals, including humans)  
Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. (Y1 - Animals, including humans)

## Skills to be taught

Ask simple questions and recognise they can be answered in different ways  
Observe closely, using simple equipment  
Perform simple tests  
Identify and classify

## Key Knowledge

Animals, including humans, have offspring which grow into adults. In humans and some animals, these offspring will be young, such as babies or kittens, that grow into adults. In other animals, such as chickens or insects, there may be eggs laid that hatch to young or other stages which then grow to adults. The young of some animals do not look like their parents e.g. tadpoles.

All animals, including humans, have the basic needs of feeding, drinking and breathing that must be satisfied in order to survive. To grow into healthy adults, they also need the right amounts and types of food and exercise.

Good hygiene is also important in preventing infections and illnesses.

## Key vocabulary

### Key Vocabulary

<b>adult</b>	A fully grown animal or plant.
<b>develop</b>	To grow and become stronger.
<b>life cycle</b>	The changes living things go through to become an adult.
<b>offspring</b>	The child of an animal.
<b>reproduce</b>	When living things make a new living thing of the same kind.
<b>young</b>	Offspring that has not reached adulthood.
<b>live young</b>	Offspring that has not hatched from an egg.

### Key Vocabulary

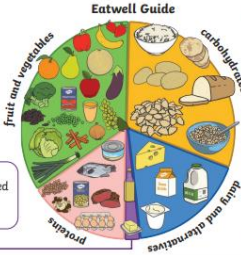
<b>dehydrate</b>	To lose water (dry out).
<b>diet</b>	The food and water that an animal needs.
<b>disease</b>	Illness or sickness.
<b>energy</b>	The power needed to carry out a task.
<b>exercise</b>	A physical activity to keep your body fit.
<b>germs</b>	Bugs that cause disease and illness.
<b>heart rate</b>	The number of times a heart beats in one minute.
<b>hygiene</b>	How clean something is (to stay healthy and stop disease and illness spreading).
<b>nutrition</b>	Food needed to live.
<b>pulse</b>	The beating of the heart that can be felt in your neck and wrist.

## Pictures/maps/images

To stay alive, all animals have 3 basic needs:



To grow into a healthy adult, we must eat the right types of food in the right amount and **exercise**.



Water, lower fat milk, sugar-free drinks including tea and coffee all count. **6-8 a day**

Eat less often and in small amounts.

**oils and spreads**  
Choose unsaturated oils and use in small amounts.

To stop illness and infections spreading, we must be hygienic and keep ourselves clean.



**Possible experiences** Ask people questions and use secondary sources to find out about the life cycles of some animals.

Observe animals growing over a period of time e.g. chicks, caterpillars, a baby.  
Ask questions of a parent about how they look after their baby.  
Ask pet owners questions about how they look after their pet.  
Explore the effect of exercise on their bodies.  
Classify food in a range of ways, including using the [Eatwell Guide](#).  
Investigate washing hands, using glitter gel.

### Key Vocabulary

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All living things **reproduce** and have **offspring**.

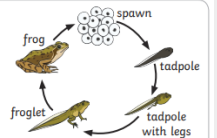
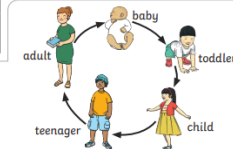
Some animals give birth to **live young**. Their offspring normally look like them when they are born.



Some animals lay eggs which hatch into live young. This **young** then develops into an **adult**.  
When these eggs hatch, some animals look like their adult, e.g. birds and reptiles.



Other animals have offspring which do not look like them, e.g. fish and amphibians.



All young animals change at different stages as they grow into adults.

Subject - Science

Topic name - Living things and their habitat

Year group 2

Term - Summer

## 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)

## Skills to be taught

Ask simple questions and recognise they can be answered in different ways  
 Observe closely, using simple equipment  
 Perform simple tests  
 Identify and classify

**Key Knowledge** All objects are either living, dead or have never been alive. Living things are plants (including seeds) and animals. Dead things include dead animals and plants and parts of plants and animals that are no longer attached e.g. leaves and twigs, shells, fur, hair and feathers (This is a simplification, but appropriate for Year 2 children.) An object made of wood is classed as dead. Objects made of rock, metal and plastic have never been alive (again ignoring that plastics are made of fossil fuels). Animals and plants live in a habitat to which they are suited, which means that animals have suitable features that help them move and find food and plants have suitable features that help them to grow well. The habitat provides the basic needs of the animals and plants – shelter, food and water.

Within a habitat there are different micro-habitats e.g. in a woodland – in the leaf litter, on the bark of trees, on the leaves. These micro-habitats have different conditions e.g. light or dark, damp or dry. These conditions affect which plants and animals live there. The plants and animals in a habitat depend on each other for food and shelter etc. The way that animals obtain their food from plants and other animals can be shown in a food chain.

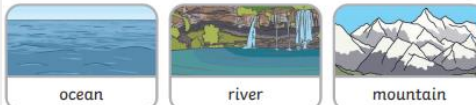
## Key vocabulary

Key Vocabulary	Key Vocabulary
<b>life processes</b> These are the things that all living things do. They move, breathe, sense, grow, make babies, get rid of waste and get their energy from food.	<b>habitat</b> A habitat is the natural place something lives. A habitat provides living things with everything they need to survive such as food, shelter and water.
<b>living</b> Things that are living have all the life processes.	<b>microhabitat</b> A microhabitat is a very small habitat in places like under a rock, under leaves or on a branch. Minibeasts live in microhabitats. The microhabitats have everything they need to survive.
<b>dead</b> Things that are dead were once living. They did have all the life processes but don't now.	<b>depend</b> Many living things in a habitat depend on each other. This means they need each other for different things.
<b>never living</b> Things made out of metal, plastic or rock were never living. They never had the life processes.	<b>survive</b> This means to stay alive.
<b>food chain</b> A food chain shows how each animal gets its food. Food chains are one of the ways that living things depend on each other to stay alive.	
<b>food sources</b> This is the place a living thing's food comes from.	

## Pictures/maps/images

### Key Knowledge

Examples of habitats:



Examples of microhabitats:



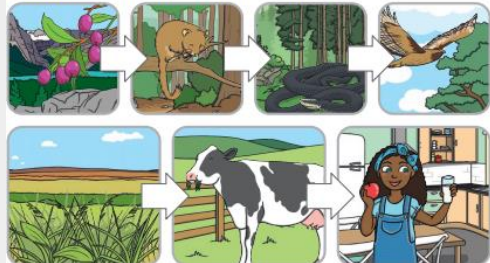
## Possible experiences

- Explore the outside environment regularly to find objects that are living, dead and have never lived.
- Classify objects found in the local environment.
- Observe animals and plants carefully, drawing and labelling diagrams.
- Create simple food chains for a familiar local habitat from first-hand observation and research.
- Create simple food chains from information given e.g. in picture books (Gruffalo etc.)

### Key Knowledge



Food chains. The arrows mean 'is eaten by'.



Subject - Science	Topic name - Plants	Year group 2	Term - Summer 1
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**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)

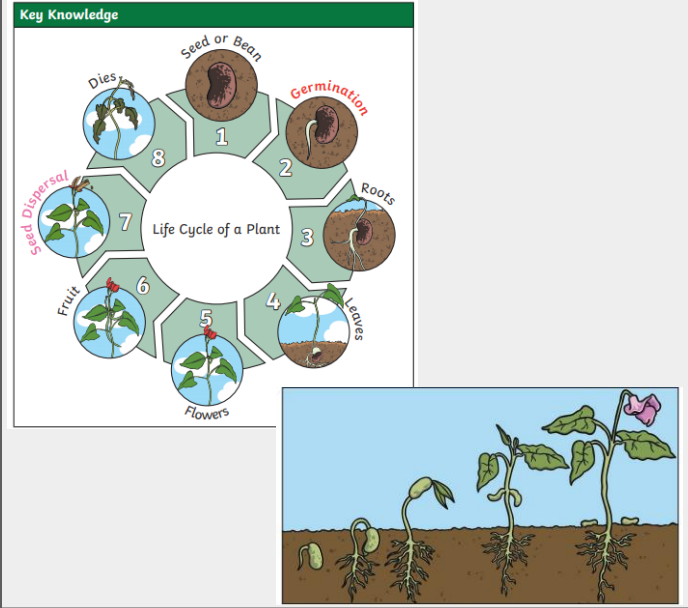
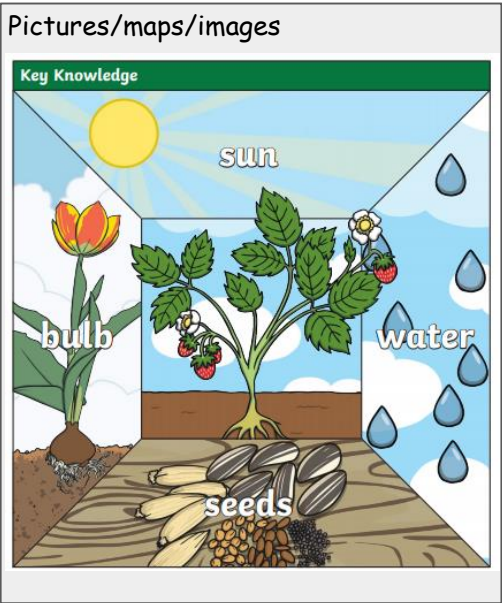
**Skills to be taught**  
 Ask simple questions and recognise they can be answered in different ways  
 Observe closely, using simple equipment  
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**Key Knowledge**  
 Plants may grow from either seeds or bulbs. These then germinate and grow into seedlings which then continue to grow into mature plants. These mature plants may have flowers which then develop into seeds, berries, fruits etc. Seeds and bulbs need to be planted outside at particular times of year and they will germinate and grow at different rates. Some plants are better suited to growing in full sun and some grow better in partial or full shade. Plants also need different amounts of water and space to grow well and stay healthy

Key Vocabulary	
<b>germination</b>	When the conditions are right, the seed soaks up <b>water</b> and swells, and the tiny new plant bursts out of its shell. This is called <b>germination</b> .
<b>sprout</b>	When a plant <b>sprouts</b> , it grows new <b>shoots</b> .
<b>shoot</b>	A <b>shoot</b> grows upwards from the seed or plant to <b>find sunlight</b> .
<b>seed dispersal</b>	<b>Seed dispersal</b> is when the seeds move away from the parent plant. They can be moved by the wind or animals.

Key Vocabulary	
<b>What do plants need to grow well?</b>	
<b>sunlight</b>	All plants need light from the sun to grow well. Some plants need lots of <b>sunlight</b> . Some plants only need a little <b>sunlight</b> .
<b>water</b>	All plants need <b>water</b> to grow. Without <b>water</b> , seeds and bulbs will not <b>germinate</b> .
<b>temperature</b>	<b>Temperature</b> is how warm or cold something or somewhere is. Some plants like cooler <b>temperatures</b> and some like warmer <b>temperatures</b> .
<b>nutrition</b>	Food or nourishment. Plants make their own food in their leaves using <b>sunlight</b> .

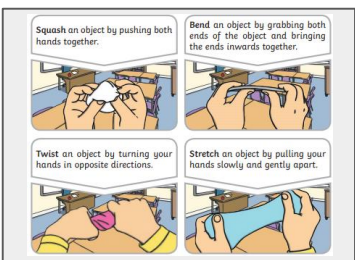


**Possible experiences**  
 Make close observations of seeds and bulbs.  
 Classify seeds and bulbs.  
 Research and plan when and how to plant a range of seeds and bulbs.  
 Look after the plants as they grow – weeding, thinning, watering etc.  
 Make close observations and measurements of their plants growing from seeds and bulbs.  
 Make comparisons between plants as they grow.

Subject - Science	Topic name - Uses of everyday materials	Year group 2	Term - Autumn
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**Prior Knowledge** Distinguish between an object and the material from which it is made. (Y1 - Everyday materials) Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock. (Y1 - Everyday materials) Describe the simple physical properties of a variety of everyday materials. (Y1 - Everyday materials) Compare and group together a variety of everyday materials on the basis of their simple physical properties. (Y1 - Everyday materials)

**Skills to be taught**  
 Ask simple questions and recognise they can be answered in different ways  
 Observe closely, using simple equipment  
 Perform simple tests  
 Identify and classify



People who developed new **materials**:

- John McAdam's** process was so successful that roads were built in this way right across the world.
- John Dunlop** originally used rubber to make tyres for his son's tricycle.
- Charles Macintosh** invented the first waterproof fabric by painting a dissolved rubber solution onto cloth.

**Key vocabulary**

Key Vocabulary	
<b>materials</b>	<b>Materials</b> are what objects are made from.
<b>suitability</b>	<b>Suitability</b> means having the <b>properties</b> which are right for a specific purpose.
<b>properties</b>	This is what a <b>material</b> is like and how it behaves (soft, stretchy, waterproof).

**Possible experiences**  
 Classify materials.  
 Make suggestions about alternative materials for a purpose that are both suitable and unsuitable  
 Test the properties of materials for particular uses e.g. compare the stretchiness of fabrics to select the most appropriate for Elastigirl's costume, test materials for waterproofness to select the most appropriate for a rain hat

**Key Knowledge**  
 All objects are made of one or more materials that are chosen specifically because they have suitable properties for the task. For example, a water bottle is made of plastic because it is transparent allowing you to see the drink inside and waterproof so that it holds the water. When choosing what to make an object from, the properties needed are compared with the properties of the possible materials, identified through simple tests and classifying activities. A material can be suitable for different purposes and an object can be made of different materials.

Objects made of some materials can be changed in shape by bending, stretching, squashing and twisting. For example, clay can be shaped by squashing, stretching, rolling, pressing etc. This can be a property of the material or depend on how the material has been processed e.g. thickness.

**Key Knowledge**  
**Properties of Materials**

wood: hard, stiff, strong, opaque, can be carved into any shape.	glass: waterproof, transparent, hard, smooth.
plastic: waterproof, strong, can be made to be flexible or stiff, smooth or rough.	metal: strong, hard, easy to wash.
paper: lightweight, flexible.	cardboard: strong, light, stiff.
fabric: soft, flexible, hard-wearing, can be stretchy, warm, absorbent.	rubber: hard-wearing, elastic, flexible, strong.