SCIENCE KNOWLEDGE MAT– YEAR 2

VOCABULARY

Natural materials: wood, metal, rock, rubber, cotton, leather, wool

Manmade / synthetic materials: plastic, glass, brick, paper, cardboard, ceramic

Squashing: to press, beat, crush or flatten

Bending: to cause to take on a curved or angled form, or a different form.

Twisting: to wind, coil, or weave around something else.

Stretching: to cause to extend or reach from one point to another.

Waterproof: not letting water through; not absorbent.

Absorbent: able to soak up liquid or moisture.

Flexible: can flex in shape to a curve

Rigid: not bendy or stretchy

Waterproof: not letting water through, not absorbent

Absorbent: able to soak in liquid or moisture

Opaque: not letting light pass through

Transparent: letting light pass through; gives a clear view of objects on the other side

Everyday Materials

MAIN IDEA

Explore in more depth why materials are chosen for certain purposes.

Experiment with changing the shapes of solids.

Identify and discuss the uses of different everyday materials so that they become familiar with how some materials are used.

WHAT CAME BEFORE

Differentiate between an object and the material it is made of. Name and describe the properties of materials and begin to suggest why it was chosen.

WHAT COMES NEXT

Compare and group materials together, according to whether they are solids, liquids or gases. Observe that some materials change state when they are heated or cooled and link this to the water cycle.

WHAT YOU SHOULD ALREADY KNOW

Distinguish between objects and the materials they are made of.

Differentiate between natural and manmade materials.

Describe the properties of a selection of materials, such as wood and plastic.

KEY LEARNING

Pupils will become more confident in describing the physical features of a material, such as wool being soft and absorbent.

They will learn to identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.

Pupils will investigate how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.

INVESTIGATE / QUESTIONS

What is this object and what is it made of?

What are the properties of the material that this object is made of? Why do you think this material was chosen? For example, why is this saucepan made of metal, but there is plastic on the handle?

If we changed the material this object was made of, what might happen? For example, what if this umbrella was made of paper?

How might we change the shape of this solid? For example, if I was to change the shape of this playdough, what would I have to do?

SCIENCE KNOWLEDGE MAT– YEAR 2

VOCABULARY

Adult: a fully grown animal or plant.

Develop: to grow and become stronger.

Dehydrate: to lose water or to dry out.

Diet: the food and water that an animal (including humans) needs.

Disease: an illness or sickness which affects people, animals, or plants.

Energy: the power needed to carry out a task.

Exercise: when you exercise, you move your body energetically in order to get fit and remain healthy.

Germs: bugs that cause disease and illness.

Heart Rate: the number of times a heart beats in one minute.

Hygiene: keeping yourself and your surroundings clean, especially in order to prevent illness or the spread of diseases.

Life Cycle: the series of changes that an animal or plant passes through from the beginning of its life until its death.

Medicine: the treatment of illness and injuries by doctors and nurses.

Nutrition: the food required to live.

Offspring: a person's children or an animal's young.

Pulse: the beating of the heart that can be felt in your neck and wrist.

Reproduce: when living things make a new living thing of the same kind.

Survive: continue to exist.

Animals Including Humans

MAIN IDEA

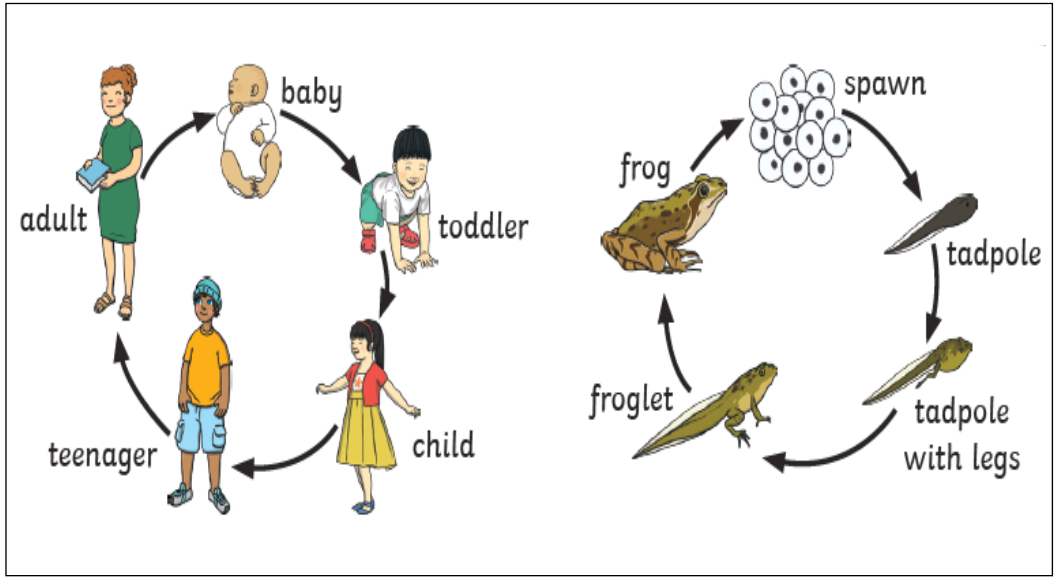
Children will begin to understand the basic needs of animals, including humans, for survival and how it helps growth. They will be able to describe the importance of exercise, a balanced diet and hygiene for humans.

WHAT CAME BEFORE

Year 1 : identify and name a variety of common animals and recognise the basic parts of the human body.

WHAT COMES NEXT

Year 3 : identify that humans and some animals have skeletons and muscles for movement.



WHAT YOU SHOULD ALREADY KNOW

- There are five types of vertebrates: mammals, fish, reptiles, amphibians and birds.
- Vertebrates are animals that have a backbone.
- Some animals are suitable to be kept as pets, but others are not.
- Doctors and nurses give us medicine when are feeling poorly.

KEY LEARNING

- A life cycle is the series of changes that an animal or plant passes through from the beginning of its life until death. Animals, including humans, have offspring which grow into adults.
- All young animals change at different stages as they grow into adults.
- Some animals lay eggs which hatch into live young. This young eventually develops into an adult.
- Some animals give birth to live young. Their offspring normally look like them when they are born.
- To keep healthy, humans need to eat a balanced diet and healthy foods.
- Humans need some exercise to keep their muscles and bones healthy.
- Humans should take medicines that are given by doctors and nurses when feeling poorly.
- It is important for humans to maintain good hygiene by washing regularly, having clean clothes and brushing their teeth and hair.

INVESTIGATE / QUESTIONS

- Record a food diary and evaluate your diet. Is it balanced?
- Participate in a series of exercises and investigate how each exercise: makes your body feel, affects your breathing, uses each of your muscles.
- Can you order the stages in human life?
- Compare the heights of people at different stages of their lives.

SCIENCE KNOWLEDGE MAT

Y2 Living Things and Their Habitats

VOCABULARY

Habitats: a wider area where an animal lives, for example, a forest.

Micro-habitats: a small-scale, specific habitat which supports the survival of certain animals or plants. Eg. a rotting log.

Food chain: a series of living beings in which each serves as food for the next. E.g. *Bats eat insects, and so are above them in the food chain.*

Living: having life, with energy

Dead: no longer alive

Conditions: being fit for use. E.g. The damp conditions here at the swamp is perfect for a frog.

Shelter: a place or structure that gives protection against weather or danger.

Food source: where food can be caught or found.

Woodland: land covered with woods; forest.

Seashore: land that borders / is next to the ocean.

Ocean: the vast body of salt water covering about three quarters of the earth's surface.

Rainforest: a dense evergreen forest, mostly found in tropical areas, that receives a large amount of rain all year long.

MAIN IDEA

Pupils will be introduced to the idea that all living things have certain characteristics that are essential for keeping them alive and healthy. They will raise and answer questions that help them to become familiar with the life processes that are common to all living things. The terms 'habitat' and 'micro-habitat' are introduced in this unit.

WHAT CAME BEFORE

Year 1 - identify and name a variety of common animals and also be able to recognise whether they are herbivores, carnivores, herbivores and omnivores.

WHAT COMES NEXT

Year 3- Identify that animals cannot make their own nutrition and therefore receive it from food.

WHAT YOU SHOULD ALREADY KNOW

There are 6 basic animal groups: mammals, invertebrates, fish, amphibians, reptiles and birds. .Animals that only eat meat are called carnivores, this includes lions and eagles. Whereas animals that only eat plants are called herbivores, for example cows and giraffes. Finally, animals that eat plants and meat are called omnivores, examples include squirrels.

KEY LEARNING

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.

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.

Raise and answer questions about the

INVESTIGATE / QUESTIONS

- How do animals choose their habitats? What is important?
- How do different animals living in the same or nearby habitats rely on each other?
- What can we do in our community to improve the lives of animals living in our locality?

SCIENCE KNOWLEDGE MAT– YEAR 2

Plants

VOCABULARY

Bulb: a root shaped like an onion that grows into a flower or plant.

Common: something that is found in large numbers or it happens often.

Crop: plants such as wheat and potatoes that are grown in large quantities for food.

Deciduous: a tree that loses its leaves in the autumn every year.

Evergreen: a tree or bush which has green leaves all the year round.

Flowering: trees or plants which produce flowers.

Germination: when the seed soaks up water and swells, a tiny new plant bursts out of its shell.

Herb: a plant whose leaves are used in cooking to add flavour to food, or as a medicine.

Leaf: the parts of a tree or plant that are flat, thin, and usually green.

Nutrients: substances that help plants and animals to grow.

Reproduce: when an animal or plant produces one or more individuals similar to itself.

Roots: the parts of a plant that grow under the ground.

Seed Dispersal: when the seeds move away from the parent plant, they can be moved by the wind or animals.

Vegetation: plants, trees and flowers.

Weed: a wild plant that grows in gardens and prevents the plants that you want from growing properly.

MAIN IDEA

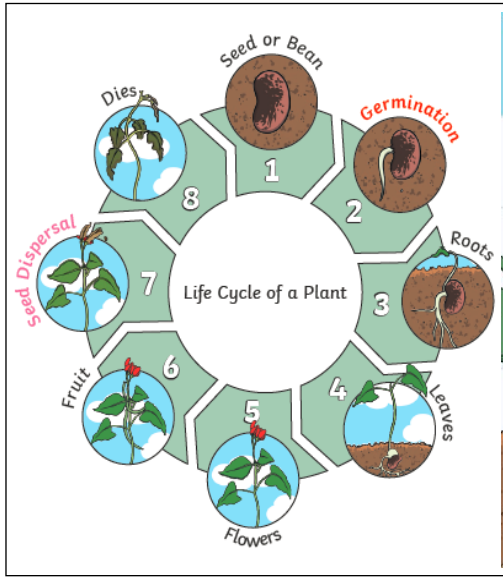
Children will observe how seeds grow seeds and bulbs mature into plants. They will have the opportunity to explore a plants needs for water, light and a suitable temperature to grow and stay healthy. There will be lots of opportunity for observation.

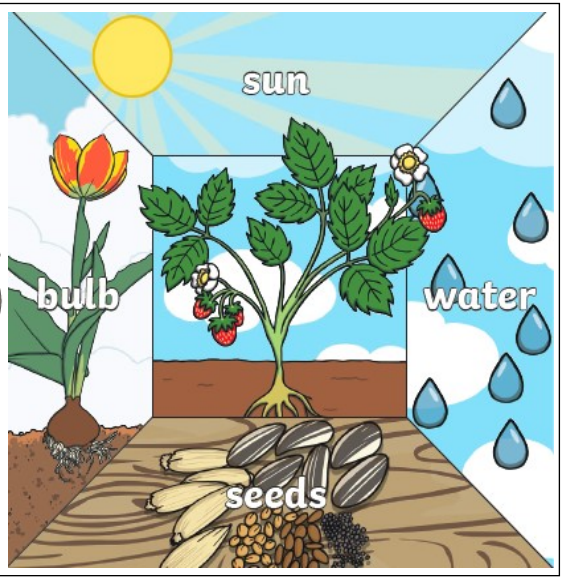
WHAT CAME BEFORE

Year 1 – identify common wild and garden plants and name the parts of a flower.

WHAT COMES NEXT

Year 3– understand the function of different parts of a flower and understand its needs to grow.





WHAT YOU SHOULD ALREADY KNOW

- Plants can grow.
- Names of common garden plants (e.g. poppy, rose) and the names of some common wild plants (e.g. daisy, dandelion, nettle).
- The parts of a plant include: petals, fruits, roots, bulbs, seeds, stem, trunks and branches.

KEY LEARNING

- Plants and living things require water, warmth and nutrients to grow. Plants receive these essential things from soil and light. Without these things, they may stop growing.
- We eat many plants. When farmers grow plants to provide us with food, these are called crops.
- We eat many fruits that contain seeds. We also eat different parts of vegetable plants, for example root vegetables (carrots, potatoes), stem vegetables (celery, spring onion), leafy vegetables (cabbage, lettuce) and flowering vegetables (broccoli, cauliflower).
- We eat grains and cereals from plants too, including wheat and oats.
- We grow herbs to add flavour to our food.
- The common parts of a tree include: crown, leaves, twig, branch, trunk and roots.

INVESTIGATE / QUESTIONS

- Can you dissect a range of fruits and identify where their seeds are?
- Can you eat a variety vegetables and identify which part of the plant they come from?
- Plant a bulb or seed and watch it grow. Try adapting its conditions and see if it effects its growth.