

Year 2 Uses of everyday materials - Autumn Term 1 Knowledge Organiser

What should I already know?

In Year 1, children identified materials and could describe physical properties. Now children look at considering how these properties make the material suitable or unsuitable for different uses.

How have people of the past influenced us in our lives today?

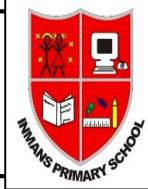


Properties of Materials

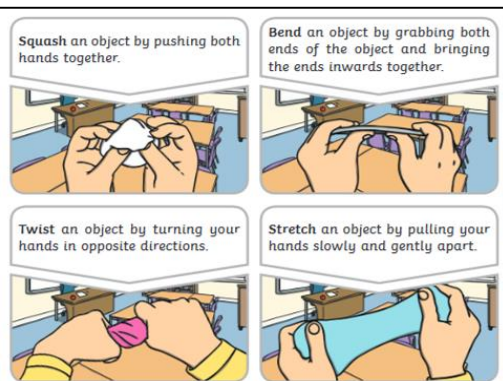


National Curriculum objectives:

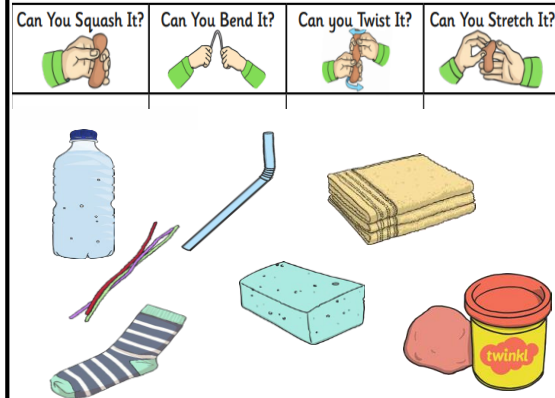
- identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses
- find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching



Which materials can be changed by squashing, bending, twisting and stretching?



Testing materials



Key vocabulary

Rough

Soft

Hard

Twisting

Solid

Liquid

Gas

Stretching

Materials

Squashing

Bending

Year 2 Living things and their habitats- Autumn Term 2

Knowledge Organiser

What should I already know?

In EYFS, children observe different habitats in their local area. They also compare hot and cold places.

National Curriculum objectives:

- 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 microhabitats
- 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



Why can't a meerkat live in the North Pole?

Key knowledge

Habitats



Microhabitats



Living

- Living things have life processes.
- They need food, water and air to stay alive.
- They can sense changes in the environment.
- They can move, grow and reproduce.

non living

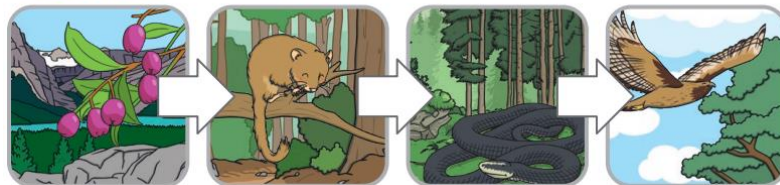
- Non-living things can be things that were once living or part of a living thing, or they can be things that have never been alive.
- They do not need food, water or air.
- They cannot reproduce.

Key vocabulary

Living
Non living
Habitats
Microhabitats
Food chain
Food source
Classification



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



Year 2 Uses of everyday materials - Spring Term Knowledge Organiser

What should I already know?

Consolidate and expand on work done in Autumn 1- applying working scientifically skills to design and conduct experiments. In Year 1, children identified materials and could describe physical properties. Now children look at considering how these properties make the material suitable or unsuitable for different uses.

National Curriculum objectives:

- identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses(recap Autumn 1)
- find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching(recap Autumn 1)
- Working scientifically-performing simple tests, identifying and classifying, using their observations and ideas to suggest answers to questions



Development of Materials

John Dunlop

- John Dunlop is famous for developing the pneumatic (air-filled) tyre.
- He did this, at first, to improve the tyres on his son's bicycle!
- He used his understanding of rubber to fit it to a wooden disc. He then used an inflated tube of sheet rubber to blow up the tyre.



Charles Macintosh

- Charles Macintosh is best known for inventing the raincoat.
- He discovered a way in which rubber could be placed between two layers of cloth, to make it waterproof.
- His name lives on today – a raincoat is often called a Macintosh or Mac.








How do we know about the Great Fire of London?

John McAdam

- John McAdam was the first person to think of tarmac roads.
- Roads used to be made from clay, earth, or chalk, but these materials were messy and not very smooth.
- He spread hot tarmac on a road, adding lime chippings & flattening.



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.

How to Plan a Fair Test

Cows Change one thing

Moo Measure something

Softly Keep everything else the Same



Experiments:
Which material is the
strongest?
Which material is the
best insulator?



Equipment

My Prediction

Method

Results

Conclusion



Year 2 Plants - Summer Term 1 Knowledge Organiser

What should I already know?

In Year 1, children have identified and classified plants. They also know the structure of plants. Children will know that plants are living things that use sunlight to create their own food. They have lots of different parts, for example stems, leaves and roots. There are deciduous (leaf losing) and evergreen (leaf keeping) trees.

National Curriculum objectives:

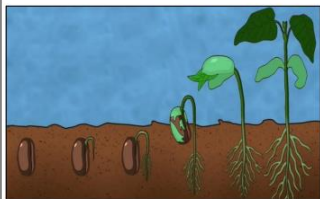
- > observe and describe how seeds and bulbs grow into mature plants
- > find out and describe how plants need water, light and a suitable temperature to grow and stay healthy



What do beaches have in common? Bridlington and Sydney

Key knowledge:

Growth from Seeds/Bulbs into Mature Plants

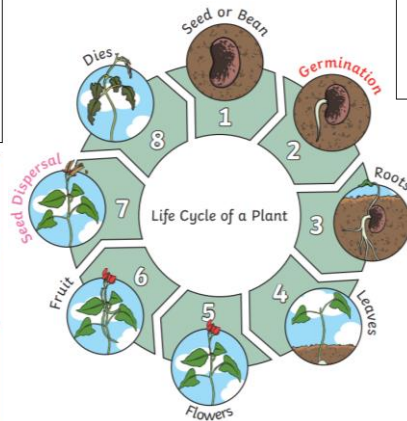
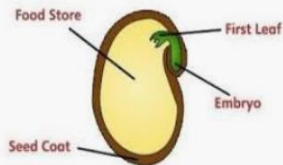


-Germination is the name for when a plant starts to grow. A plant is germinating when its seed begins to sprout.

-Inside a seed/bulb is the baby plant (an embryo). Seeds have a tough layer on the outside to protect the plant (the seed coat).

-Seeds and bulbs do not need sunlight in order to grow. They already have their own food store inside them!

-However, they do need the right conditions to grow. Normally, they need water, air and the right temperature. This can often be found in well-watered soil!



What Plants Need to Grow

Water and Nutrients	Light
Like animals and humans, plants need water and nutrients to survive.	Plants need lots of sunlight to help them grow.
-Plants are able to get water from the soil through their roots.	-Plants do not eat food. They instead use sunlight to make their own food.
-They can also catch water on their leaves.	-Too little light will leave plants weak.
Temperature	Space and Time
-Plants need the temperature to be just right for them to grow properly.	-Plants need room for their roots and stems to be able to grow. Without enough room, they may not grow large enough.
-If it is too hot, they may burn and wilt. If it is too cold, they may freeze and die. This is why there are less plants at the poles and the deserts.	-Plants also need time – it can take days, months or even years for them to grow.

Key vocabulary

Observations
Mature plants
Roots
Seedling
Bulbs

Healthy
Seeds
Minerals
Temperature
suitable

Smaller Plants

Dandelion – about 25 centimetres

Dwarf Evergreen Shrub – about 1 metre

Sunflower – 1-3 metres

Titan Arum Flower – up to 3.5 metres

Spruce (Christmas Tree) – up to 30 metres

Taller Plants

Giant Redwood Tree – 100 metres +

Year 2 Animals including humans - Summer Term 2 Knowledge Organiser

What should I already know?

In EYFS, children look at healthy eating and diet.

How do we know where we are? Map makers

National Curriculum objectives:

- notice that animals, including humans, have offspring which grow into adults
- find out about and describe the basic needs of animals, including humans, for survival (water, food and air)
- describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene



Reproduction

Some animals give birth to **live young**.



Some animals lay eggs which the **young** hatch from.

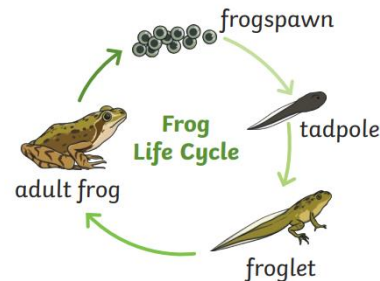
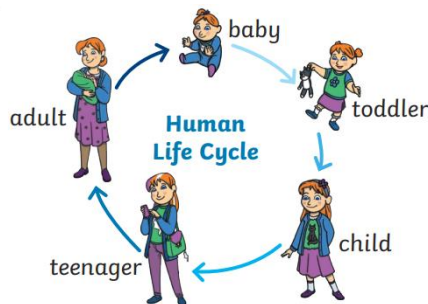


Both of these types of **young** then **develop** into **adults**.

Some **offspring** look like their **adult** when they are born.



Some **offspring** do not look like their **adult** when they are born.



Key vocabulary

Observations
Healthy
Hygiene
Survival
Basic needs
offspring
exercise

Basic Needs of Animals

Water



-Animals need water to make sure that they stay hydrated.

-Many animals drink water to survive. Other animals (e.g. fish) live in the water.

-Some animals get their oxygen from the water. Humans are made up of 70% water.

Food



-Animals use food to get the energy & nutrients that they need.

-Animals eat plants (herbivores), other animals (carnivores), or both (omnivores).

Shelter

-Shelter provides safety from weather/ predators and basic things that an animal needs to survive.

-Burrows, nests and dens are some examples.



Oxygen



-All animals (including humans) need oxygen to live.

-Oxygen exists in the air, in the soil, and even in the water. Fish breathe oxygen through gills.

Temperature

-Sunlight and heat are vitally important to all animals. This gives animals the energy that they need.

Some animals need more heat than others.



Staying Healthy

Exercise



-Humans (and many other animals) need to exercise. It builds our muscles and helps to pump blood around our body. Regular exercise makes us stronger and faster.

-Exercise also helps to keep our weight down. When we are too heavy and have too much fat, it is much harder to move, and puts a strain on our bodies.

Eating a Balanced Diet

-It is also important that humans eat a balanced diet with all of the right nutrients – this helps us to grow bigger, stronger and healthier!

-Eating a balanced diet includes having fruit & vegetables, starchy foods such as breads and pastas, meats and fish (and other alternatives) and foods containing fats.



Hygiene



-It is important to be hygienic. This includes regularly washing our hair and bodies, washing hands before eating and brushing our teeth.

-Being hygienic stops the spread of germs, which can cause diseases.