

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.

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



What type of house would you like to live in?

Key vocabulary

Children will use key vocabulary from Year 1-see below-to describe properties. Materials-materials are what objects are made from. Suitability-suitability means having the properties which are right for a specific purpose. Properties-this is what a material is like and how it behaves (soft, stretchy, waterproof).

Key vocabulary(Year 1)


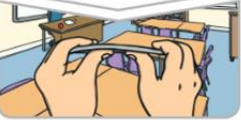


Object- a thing that can be used. For example a door, chair, car, table are all objects. Material-materials are what an object is made from.
Hard- not easily broken or bent.
Soft- if something is soft, it is easy to cut, fold or change the shape of.
Stretchy- can be pulled to make it longer or wider without breaking.
Shiny- reflects light easily.
Dull-doesn't reflect light. Doesn't look bright or shiny.
Rough- if something is rough, it feels and looks uneven or bumpy.
Smooth- smooth objects have no lumps or bumps.
Bendy- bendy things can be folded easily.
Not bendy- if something is not bendy, it can't be folded easily.
Waterproof-if something is waterproof, it keeps water out. It keeps things dry.
Not waterproof- not waterproof materials let water in.
Absorbent- if something is absorbent, it soaks water up.
Not absorbent-if something is not absorbent, it does not soak up water.
Transparent-transparent objects can be seen through.
Opaque-opaque objects can't be seen through.



Key Knowledge

Properties of Materials

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

 <p>Squash an object by pushing both hands together.</p>	 <p>Bend an object by grabbing both ends of the object and bringing the ends inwards together.</p>
 <p>Twist an object by turning your hands in opposite directions.</p>	 <p>Stretch an object by pulling your hands slowly and gently apart.</p>

Skills and enquiry

Pupils should identify and discuss the uses of different everyday materials so that they become familiar with how some materials are used for more than one thing (metal can be used for coins, cans, cars and table legs; wood can be used for matches, floors, and telegraph poles) or different materials are used for the same thing (spoons can be made from plastic, wood, metal, but not normally from glass). Pupils might work scientifically by: comparing the uses of everyday materials in and around the school with materials found in other places (at home, the journey to school, on visits, and in stories, rhymes and songs); observing closely, identifying and classifying the uses of different materials, and recording their observations.

Observations can be linked to the topic by studying the materials used to build castles. Why has stone been used? Why is glass used for the windows?...

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 vocabulary

Life processes- 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.

Living-things that are living have all the life processes.

Dead- things that are dead were once living. They did have all the life processes but don't now.

Never living- things made out of metal, plastic or rock were never living. They never had the life processes.

Food chain- 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.

Food sources- this is the place a living thing's food comes from.

Habitat- 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.

Microhabitat- 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.

Depend- many living things in a habitat depend on each other. This means they need each other for different things.

Survive- this means to stay alive.

<p>Key Knowledge</p> <p>living dead never living</p> <p>Food chains. The arrows mean 'is eaten by'.</p>	<p>Examples of habitats:</p> <table border="1"><tr><td> woodland</td><td> urban</td><td> coastal</td></tr><tr><td> rainforest</td><td> arctic</td><td> desert</td></tr><tr><td> ocean</td><td> river</td><td> mountain</td></tr></table>	 woodland	 urban	 coastal	 rainforest	 arctic	 desert	 ocean	 river	 mountain	<p>Examples of microhabitats:</p> <table border="1"><tr><td> short grass</td><td> flowers</td><td> inside rotting wood</td></tr><tr><td> under leaves</td><td> in and on soil</td><td></td></tr></table>	 short grass	 flowers	 inside rotting wood	 under leaves	 in and on soil	
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Skills and enquiry

Pupils should be introduced to the idea that all living things have certain characteristics that are essential for keeping them alive and healthy. They should raise and answer questions that help them to become familiar with the life processes that are common to all living things. Pupils should be introduced to the terms 'habitat' (a natural environment or home of a variety of plants and animals) and 'microhabitat' (a very small habitat, for example for woodlice under stones, logs or leaf litter). They should raise and answer questions about the local environment that help them to identify and study a variety of plants and animals within their habitat and observe how living things depend on each other, for example, plants serving as a source of food and shelter for animals. Pupils should compare animals in familiar habitats with animals found in less familiar habitats, for example, on the seashore, in woodland, in the ocean, in the rainforest.

Pupils might work scientifically by: sorting and classifying things according to whether they are living, dead or were never alive, and recording their findings using charts. They should describe how they decided where to place things, exploring questions like: 'Is a flame alive? Is a deciduous tree dead in winter?' and talk about ways of answering their questions. They could construct a simple food chain that includes humans (eg, grass, cow, human). They could describe the conditions in different habitats and microhabitats (under log, on stony path, under bushes); and find out how the conditions affect the number and type(s) of plants and animals that live there.

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



How do we know about the Great Fire of London?

Key vocabulary

Children will apply the vocabulary covered in Autumn 2 as well as:

Identify- to find and establish something

Compare- to look at similarities and differences between different things

Observations-something that has been seen and noticed

Design- to plan something for a certain use

Justify- to give a reason for your answer

Research-to investigate and look for answers to a question or information

Inventor- a person who creates new things

Knowledge:

This term, children will apply the vocabulary used in Autumn 1 to design experiments to test the suitability of different materials for certain uses. Linked to the topic, children will investigate why houses are now made out of brick instead of wood. They will answer questions such as Why are rabbit cages made out of wood and metal? -justifying their answers. They may also design their own experiment, for example to design a waterproof umbrella, allowing them to compare materials and record findings.

They will also learn about famous inventors and their inventions- explaining why their inventions made suitable use of materials

John McAdam	John McAdam was a Scottish engineer who experimented with using new materials to build roads, inventing a new process called ' macadamisation '.
John Dunlop	John Dunlop was a Scottish inventor who invented the air-filled rubber tyre. It was originally invented in 1887 to use with bicycles, and then became very useful when automobiles were developed.
Charles Macintosh	Charles Macintosh was a Scottish inventor and chemist who invented waterproof fabrics in 1818. The Mackintosh raincoat was introduced in 1824.
Macadamisation	Macadamisation was the name given to John McAdam's construction process of building roads. The name tarmac means a road made like this using tar.

Skills and enquiry

They should think about the properties of materials that make them suitable or unsuitable for particular purposes and they should be encouraged to think about unusual and creative uses for everyday materials. Pupils might find out about people who have developed useful new materials, for example John Dunlop, Charles Macintosh or John McAdam.



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



Key knowledge:

To grow, plants need the following things:

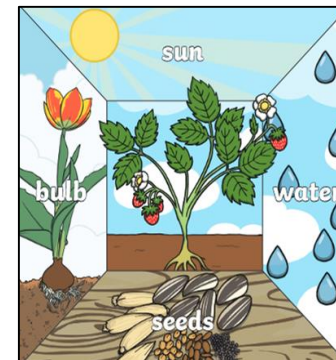
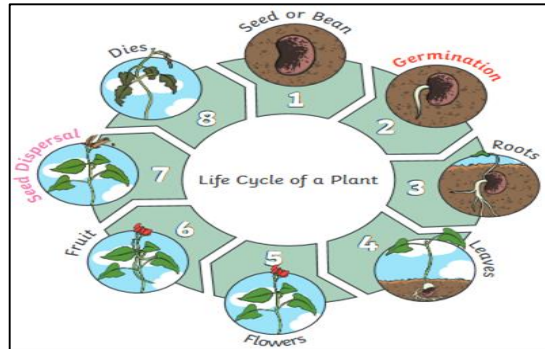
*Water and nutrients-they are able to get these from the soil through their roots

*Light-to enable plants to make their own food

*Temperature- plants need the temperature just right for them to grow.

*Space and time- it can take days, months or even years for them to grow!

Germination is the name for when a plant starts to grow. A plant is germinating when its seed begins to sprout. Seeds and bulbs do not need sunlight to grow as they already have a food store inside them, however they do need water, air and the right temperature.



Key vocabulary

Germination- when the conditions are right, the seed soaks up water and swells, and the tiny new plant bursts out of its shell. This is called germination.

Sprout- when a plant sprouts, it grows new shoots.

Shoot- a shoot grows upwards from the seed or plant to find sunlight.

Seed dispersal- seed dispersal is when the seeds move away from the parent plant. They can be moved by the wind or animals.

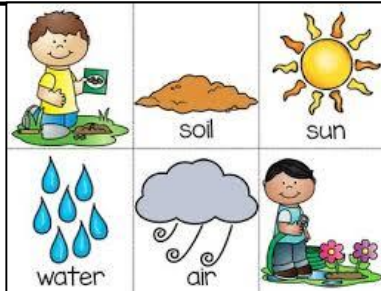
Sunlight- all plants need light from the sun to grow well. Some plants need lots of sunlight.

Some plants only need a little sunlight.

Water-all plants need water to grow. Without water, seeds and bulbs will not germinate.

Temperature-temperature is how warm or cold something or somewhere is. Some plants like cooler temperatures and some like warmer temperatures.

Nutrition- food or nourishment. Plants make their own food in their leaves using sunlight.



Skills and enquiry

Pupils should use the local environment to observe how plants grow. Pupils should be introduced to the requirements of plants for germination, growth and survival, as well as the processes of reproduction and growth in plants. Note: seeds and bulbs need water to grow but most do not need light; seeds and bulbs have a store of food inside them. Pupils might work scientifically by: observing and recording, with some accuracy, the growth of a variety of plants as they change over time from a seed or bulb, or observing similar plants at different stages of growth; setting up a comparative test to show that plants need light and water to stay healthy.

Year 2 Animals including humans - Summer Term 2 Knowledge

Organiser

What should I already know?

In EYFS, children look at healthy eating and diet.

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

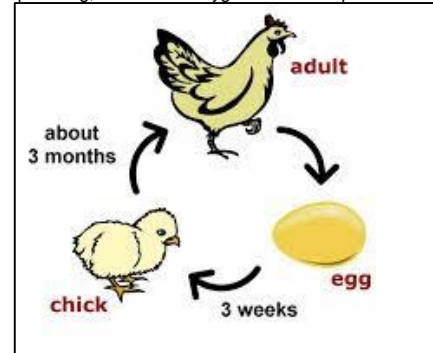


Knowledge:

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.

To stay alive, all animals have 3 basic needs: air, water and food. To grow into a healthy adult, we must eat the right types of food in the right amount and exercise. To stop illness and infections spreading, we must be hygienic and keep ourselves clean



Key vocabulary

Adult- a fully grown animal or plant.

Develop-to grow and become stronger.

Life cycle-the changes living things go through to become an adult.

Offspring-the child of an animal.

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

Young- offspring that has not reached adulthood.

Live young- offspring that has not hatched from an egg.

Dehydrate- to lose water (dry out).

Diet- the food and water that an animal needs.

Disease-illness or sickness.

Energy-the power needed to carry out a task.

Exercise- a physical activity to keep your body fit.

Germs-bugs that cause disease and illness.

Heart rate-the number of times a heart beats in one minute.

Hygiene- how clean something is (to stay healthy and stop disease and illness spreading).

Nutrition-food needed to live.

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

Skills and enquiry

Pupils should be introduced to the basic needs of animals for survival, as well as the importance of exercise and nutrition for humans. They should also be introduced to the processes of reproduction and growth in animals. The focus at this stage should be on questions that help pupils to recognise growth; they should not be expected to understand how reproduction occurs.

The following examples might be used: egg, chick, chicken; egg, caterpillar, pupa, butterfly; spawn, tadpole, frog; lamb, sheep. Growing into adults can include reference to baby, toddler, child, teenager, adult.

Pupils might work scientifically by: observing, through video or first-hand observation and measurement, how different animals, including humans, grow; asking questions about what things animals need for survival and what humans need to stay healthy; and suggesting ways to find answers to their questions.

