

**Key Vocabulary**

Word	Meaning
materials	What and object is made from
recycling	the processing of used or waste material so that it can be used again
purpose	the reason for which something has been made
reusable	to use something again
natural	Not made by people
manmade	made by human beings
variety	a collection of
durable	lasting for a long time

**Useful links:** [The invention of tarmac](https://www.bbc.co.uk/bitesize/clips/z7fnvcw)  
<https://www.bbc.co.uk/bitesize/clips/z7fnvcw>  
**Materials and their uses**  
<https://www.bbc.co.uk/bitesize/clips/zhq4d2p>



# Classifying and Grouping Materials

Plastic is a man-made material. You do not find plastic in nature.

All these objects are made from natural materials. Wood, stone, chalk, wool and silk are all found in nature.

Wood and stone can be carved and polished to make into useful objects.

Wool, cotton and silk can be spun into thread, dyed and then woven into fabric.

**FUN FACT:** While aluminium is the most common **metal** found in the Earth's crust, the most common metal found on our planet is iron, mostly because it makes up such a large part of the Earth's core.

**John McAdam**  
 23 Sep 1756 – 26 Nov 1836

John McAdam thought it would be easier if the roads were covered in small stones and invented tarmac. It took his company 30 years to cover all roads across the UK.



**John Boyd Dunlop**  
 5 Feb 1840 – 23 Oct 1921

Inventor who developed the pneumatic rubber tire.



## Learning Outcomes

- ◇ distinguish between an object and the material from which it is made.
- ◇ identify and name a range of everyday materials. (wood, metal, plastic, glass, brick, rock, paper)
- ◇ describe the simple physical properties of a variety of everyday materials.
- ◇ compare and classify a variety of materials based on their simple physical properties.

dull	rough
rubber	metal
leather	wood
wool	waterproof
transparent	squashy
glass	absorbent
soft	opaque
bendy	brittle
plastic	rigid
hard	fabric
smooth	brick
bumpy	stone

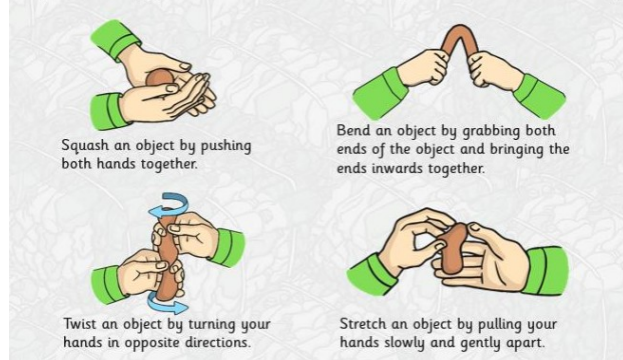
**Key Vocabulary**

Word	Meaning
materials	What an object is made from
suitability	Having the properties for a specific purpose
properties	What a material is like and how it behaves
Waterproof	Does not absorb water
Absorbent	Able to soak up liquid
Opaque	Cannot be seen through
Translucent	Allows some light to pass through
Dull	Lacking shine or brightness
Brittle	Hard, but may break easily

# Properties of Materials

**Knowledge**

**Squashing, Bending, Twisting and Stretching**



**FUN FACT:**

**Plastic** is made from oil – we now use about 20 times more plastic than we did 50 years ago.

**Useful links**

<https://www.bbc.co.uk/bitesize/clips/>  
**The Materials song:**  
<https://www.youtube.com/watch?>



**Learning Outcomes**

- ◇ Identify and compare the suitability of a variety of everyday materials
- ◇ Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching
- ◇ -find out about people who developed useful new materials. (Dunlop, MacKintosh, MacAdam)
- ◇ -explain how things move on different surfaces.



**Charles Macintosh**

29 December 1766 – 25 July 1843

Invented the first waterproof fabric by painting a dissolved rubber solution onto cloth.



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

**Key Vocabulary**

Word	Meaning
Living things	having life, not dead or non-existent
animals	A living thing with independent movement
reproduce	Produce offspring/ babies
birth	The event of a new individual from the body of its parent
Babies/offspring	child or an animal's young
exercise	physical activity and movement
hygiene	keep themselves clean and their
survival	Staying alive (avoiding danger)
Life cycle	The stages of development of a living thing
Pregnancy	Carrying an unborn offspring
Hatchling	A bird, fish, insect or other organism that has just hatched from an egg

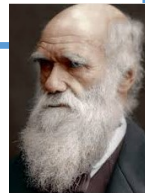
**Our Basic Needs**



**Charles Darwin**

12 Feb 1809 – 19 Apr 1882

best known for his contributions to the science of evolution.



**FUN FACT:**

Humans breathe nearly 1000 times every hour.

**Learning Outcomes**

- 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**.
- Describe the **life-cycle** of some living things. (e.g. egg, chick, chicken)

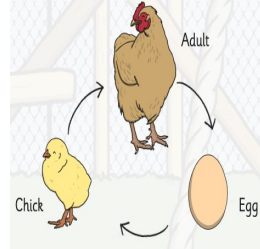
# Animals including Humans

**Knowledge**

All **living things** can **reproduce**. This is when a living thing, makes a new living thing (of the same kind).

**Plants** reproduce by bearing **seeds** that grow into new plants. Humans and other animals reproduce by having **babies**.

Some animal babies look just like their grownups but smaller. Some animal babies look very **different!**

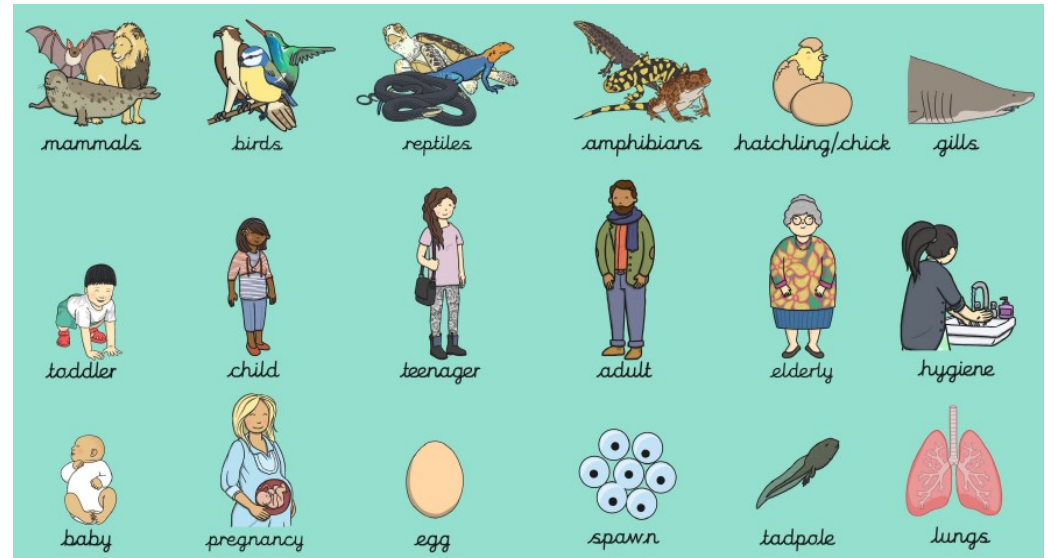
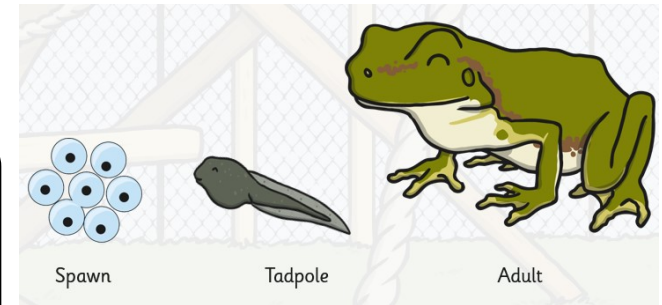


**Useful links: Animal life cycles**

<https://www.bbc.co.uk/teach/class-clips-video/science-ks1-animal-life-cycles/zrg9kmn>

**Charles Darwin**

[https://www.youtube.com/watch?time\\_continue=6&v=Du78P-](https://www.youtube.com/watch?time_continue=6&v=Du78P-)



**Key Vocabulary**

Word	Meaning
Habitat	environment in which a plant or animal lives
urban	belonging to a city
woodland	and that is covered with trees, shrubs, or bushes
coastal	Near the seaside
dead/ non-living	No longer living
reproduction	Producing offspring or new individuals
respiration	breathing
excretion	waste matter that has been discharged from an animal or a plant
food chain	each of which feeds on the one below
omnivore	an animal that will feed on any type of food
carnivore	an animal that only eats other animals
herbivore	an animal that feeds only or mainly on grass and other plants.

**FUN FACTS:** There are 21000 different kinds of insect in the British Isles, and 598 kinds of birds. Forest habitats cover 1/3 of all the land on Earth.

**Learning Outcomes**

- 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

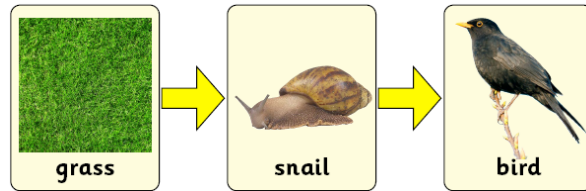
# Habitats

**Knowledge**  
There are certain things that all animals (including humans) need to be able to do in order to be alive:

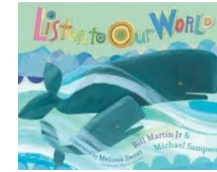
- Movement
- Respiration
- Sensitivity
- Growth
- Reproduction
- Excretion
- Nutrition



**Dr. Jane Goodall**  
**3 April 1934**  
She's a **primatologist** whose ground breaking **chimpanzee studies** in **Tanzania, East Africa**, changed the way we think about wildlife forever!



**Useful links: Different Habitats**  
<https://www.bbc.co.uk/bitesize/articles/zhvmt39>



**Diagrams**



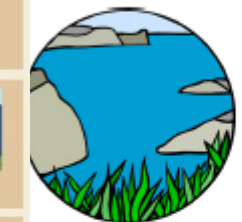
pond



flower bed



field



sea



forest

living	non-living	dead	minibeast	microhabitat
herbivore	urban	woodland	pond	coast
carnivore	ocean	Arctic	tropical	desert
omnivore	consumer	producer	predator	prey

**Key Vocabulary**

Word	Meaning
plant	to put or set in the ground to grow
seed	a plant structure (as a spore or small dry fruit) capable of producing a new plant
bulb	an underground resting stage of a plant (as an onion or tulip)
healthy	being in good health
reproduce	to produce new individuals of the same kind
germination	to begin to grow : <u>sprout</u>
disperse	to cause to become spread widely : <u>scatter</u>
transparent	fine or sheer enough to be seen through
fruit	an edible part of a plant, usually fleshy and containing seeds
digested	to process food in the body
conditions	circumstances that affect the situation



# Growing Plants



**Knowledge**

Lots of plants grow from seeds, like sunflowers and poppies! All seeds have the potential to grow into a plant. It is almost impossible to tell which plant a seed will grow into just by looking at it because lots of them look very similar. Different seeds need to be planted at different times of the year. They also need to be planted in different places. Plants can also grow from bulbs! A bulb contains everything a plant needs to grow. When plants grow in the ground it is hard to see the roots growing. We are going to plant a bulb in a transparent container to see how it grows. Some seeds are dispersed by animals. Very light seeds, like these dandelion seeds, can be dispersed by the wind.



**Marianne North** (1830-1890) dedicated her life to recording plants and flowers around the world.

### Pumpkin Seeds

Delicious to eat and great fun to carve! These pumpkins will grow to be 1-2kg!

**Sow indoors**

**When?** March, April, May

**Where?** Plant your seeds in small pots of moist compost.

**How?** Sow one seed edgewise in each pot of compost. Place the pots in a tray and cover them with a transparent lid. The seedlings will appear in 7-21 days.

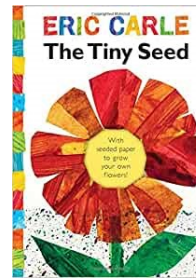
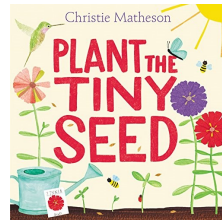
**Care** Remove the cover when the seedlings appear. When there are 5-6 leaves put them outside. After a few days plant them in the ground 90cm apart.

**Harvest** The pumpkins will be ready between September and November. Harvest them before the first frost.

**Harvest: Sep to Nov**

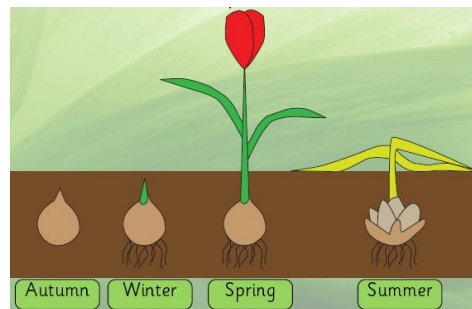
**Grow: small pots of moist compost**

**FUN FACTS:** Seeds are eaten by lots of people.



**Learning Outcomes**

- ◇ 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.
- ◇ describe what plants need to survive.
- ◇ describe how seeds and bulbs grow into plants.
- ◇ describe what a plant needs to grow and stay healthy.
- ◇ explain that plants grow and reproduce.
- ◇ 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.



**How Seeds Travel**

by the wind	by animals	by water	by bursting	by humans
milkweed	beggar-ticks	lotus	violet	bean
dandelion	sandbur	cattail	jewelweed	wheat
maple	blackberry	coconut	witch hazel	cherry

**Useful links:**  
**Seeds and dispersal**  
<https://vimeo.com/218127343>

**Key Vocabulary**

Word	Meaning
light	energy producing brightness
Dark	having little or no light
reflective	able to reflect light, sound, or other forms of energy
Light source	Produces light (include the sun, light bulbs and stars.).
torch	Portable light source
Transparent	light completely passes through it
Translucent	some light passes through it
Opaque	no light can pass through it
switch	Button or lever used to control an electrical circuit.
plug	Electrical connection
Electricity	energy created by the free or controlled movement of charged particles
circuit	a route around which an electrical current can flow
Mains	distribute water, gas, or electricity from a local station to individual buildings in an area
battery	a number of connected electric cells

# Light and Electricity

**Knowledge**

The sun is a natural light source. The sun coming up and setting gives us day and night. Throughout the day the sun climbs higher and higher until the middle of the day. The sun starts to go down through the afternoon until it sets.

Objects that give out light are called sources of light. There are natural light sources and artificial (man-made) light sources. A few examples of a natural light source would be the Sun, fires and candles. Some examples of artificial (man-made) light sources include light bulbs, televisions and phones.

Electricity is energy that can flow from place to place; this is called a current. This flow of energy is what powers all kinds of things like computers, lights and televisions. If electrical items are damaged, fires

**SUNRISE**

The time when the sun first appears in the sky in the morning.

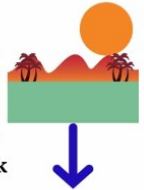
- Occurs in the morning.
- Occurs in the east.
- At the beginning of the day.
- The sun is in the sky after sunrise.



**SUNSET**

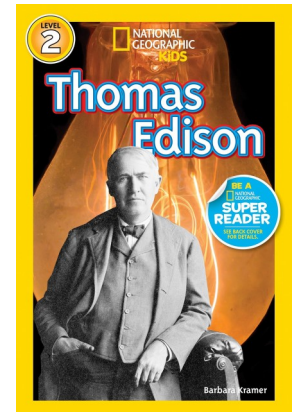
The time when the sun disappears from the sky at the end of the day and it becomes dark.

- Occurs in the evening.
- Occurs in the west.
- At the end of the day.
- The sun disappears and it becomes dark after sunset.



**Thomas Edison**

Thomas Alva Edison was a famous American inventor. He is best known for inventing 'domestic' lightbulbs to go in houses, and the electric power system that allows them to work. He came up with over 1000 successful inventions in his lifetime.



**Useful links: Light**

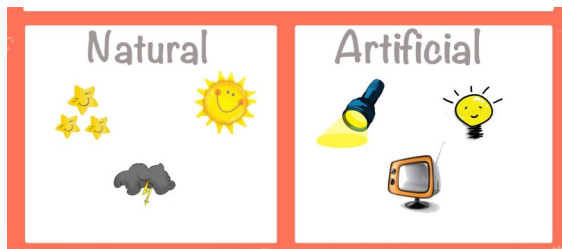
<https://www.bbc.co.uk/bitesize/clips/z3mb9qt>

**Thomas Edison:** <https://www.youtube.com/watch?v=l5e2s->

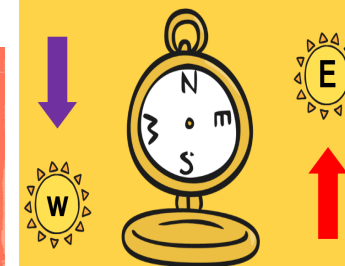
**FUN FACTS:** Light travels in a straight

**Learning Outcomes**

- identify everyday appliances which use electricity.
- Understand electrical safety
- ◇-recognise that electricity is an important source of light.
- ◇Recognise different sources of light
- ◇Understand the term sunrise and sunset.



The sun rises in the east and sets in the west.



**A circuit**

