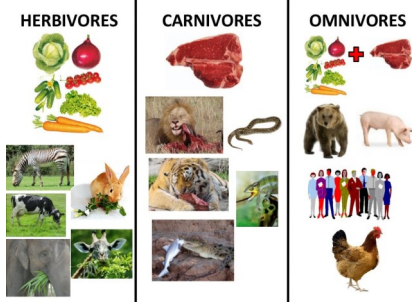


## Year 3:

# Animals including Humans

## Key Learning

Animals, including humans, are unable to make their own food and that they get their nutrition from what they drink and eat.



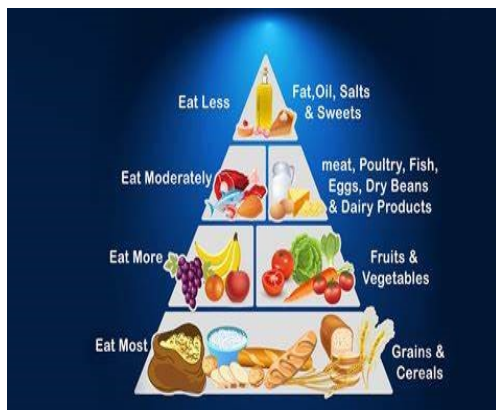
There are seven nutrient groups are protein, carbohydrates, fats, oils, vitamins, minerals, fibre and water. Healthy, balanced diets lead to healthy, active people.



### Science Skills for topic

Identifying and classifying	Observation over time
Research	Pattern seeking

- Living things need food to grow and to be strong and healthy.
- Plants can make their own food, but animals cannot.
- To stay healthy, humans need to exercise, eat a healthy diet and be hygienic.
- Animals, including humans, need food, water and air to stay alive.



Nutrient	Found in... (examples)	What it does/they do
carbohydrates		Provides energy
protein		Helps growth and repair
fibre		Helps you digest the food you have eaten
fats		Provides energy
vitamins		Keeps you healthy
minerals		Keeps you healthy
water		Moves nutrients around your body and helps to get rid of waste

## Key Vocabulary

Active	Engaging or ready to take part in physical pursuits.
Diet	The kinds of food a human or animal eats.
Balanced	Keeping things in good proportions.
nutrients	A substance that is needed for healthy growth, development and body functioning.

## Key Learning

### Skeletons

#### What is a skeleton?

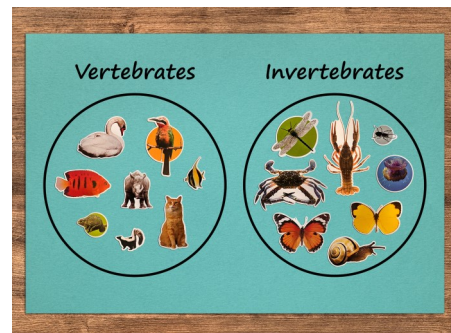
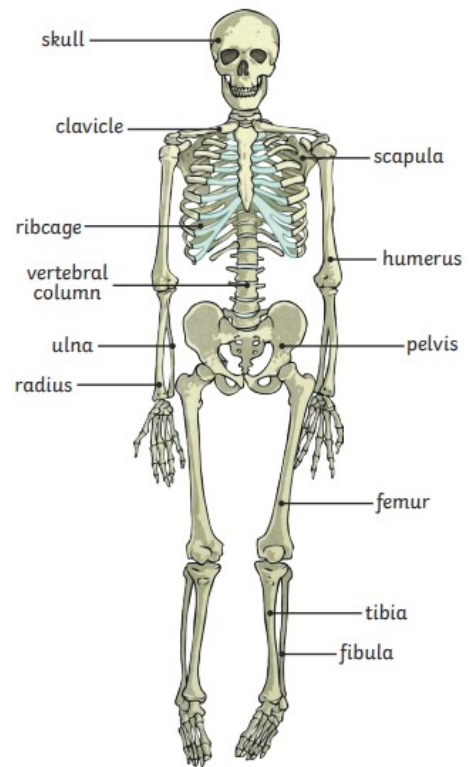
- Many animals have skeletons to support and protect their body and to help it move.
- The human skeleton is made of bones which grow as we grow.

Your bones come in all shapes and sizes. Some of the largest are in your legs, and the smallest are in your ears.

#### Functions of the skeleton

All your bones have specific functions:

1. **Protection** - Your skull protects your brain, and your ribs protect your heart, lungs and other vital organs.
2. **Support** - The bones in your legs, back and neck keep you upright.
3. **Movement** - Your muscles pull on your bones so that you can move. Joints between bones, like your elbows and knees, make this easier.



**Vertebrates** are animals that have a **spine** (backbone) inside their body. You have one and so you are a vertebrate. Other organisms, like spiders and snails, that don't have a backbone are called **invertebrates**.

**Invertebrates** are a type of animal which are found all around the world, in lots of different habitats. Minibeasts, like woodlice and centipedes, are all small invertebrates, but not all invertebrates are small. The giant squid can grow to over ten metres long!

## Key Vocabulary

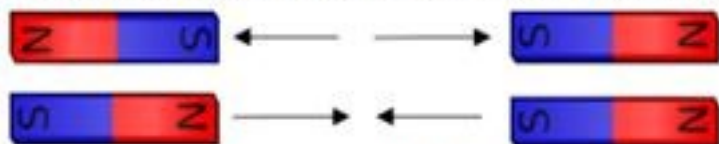
<b>Vertebrate</b>	Animals with backbones.
<b>Invertebrate</b>	Animals without backbones.
<b>Muscles</b>	Soft tissues in the body that contract and relax to cause movement.
<b>Endoskeleton</b>	A skeleton that is on the inside on the body.
<b>Exoskeleton</b>	A skeleton on the outside of the body.
<b>Hydrostatic skeleton</b>	A flexible skeleton that is supported by fluid.

## Year 3:

### Forces and magnets

#### Key Learning

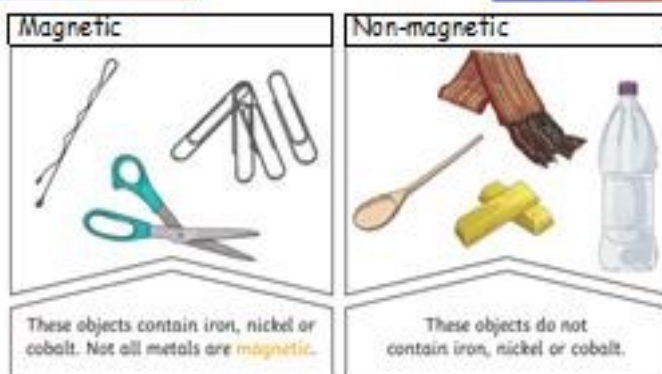
Magnets are objects that pull or push things with an invisible force called magnetism.



The strongest parts of a magnet are the poles. Magnets have two poles, a north pole and a south pole.

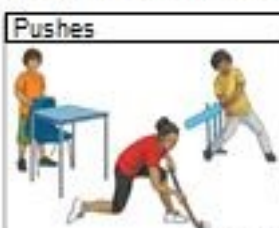
If two poles are the same they will repel each other.

If two poles are different they will



A force is a push or a pull.

A force can cause something:



- to speed up
- to slow down
- to change shape
- to change direction

Different surfaces create different amounts of friction. The amount of friction created by an object moving over a surface depends on the roughness of the surface and the object, and the force between them.

The driving force pushes the bicycle, making it move.

Friction pushes on the bicycle, slowing it down.



#### Key Vocabulary

Force	A force is a push or pull on an object.
Friction	When two surfaces slide together a force called friction makes them stick very slight-
Surface	The outer layer of something.
Magnet	Magnets are objects that push or pull things with their invisible force called mag-
Magnetic poles	The ends of the magnets are called its poles. One end of a magnet is the North pole;
Gravity	This is the force that makes all objects fall down towards the centre of Earth.
Repel	When the same magnetic poles are brought together they will push away from each
Attract	When opposite magnetic poles are brought together they will pull together.



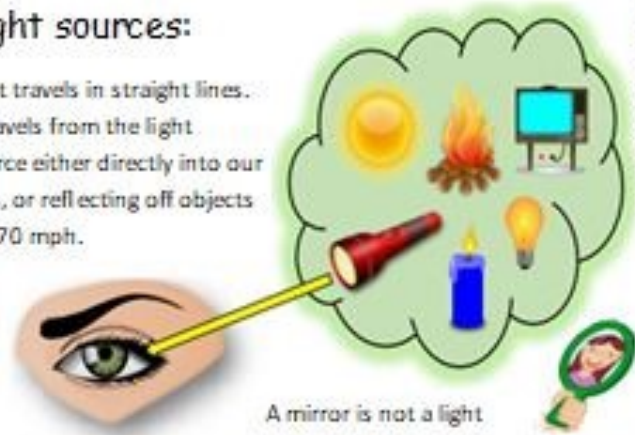
## Year 3:

## Light

### Key Learning

#### Light sources:

Light travels in straight lines. It travels from the light source either directly into our eyes, or reflecting off objects at 670 mph.



A mirror is not a light source. It reflects light but does not create it.

Rainbows are formed when the sun shines through water particles, which are transparent. When white light passes through, it 'bends' and splits into the range of colours which make white light



**LARGE SHADOW**  
when the toy is close to the light

**SMALLER SHADOW**  
when the toy is further from the light

**TINY SHADOW**  
when the toy is a long way from the light

Light travelling and reflecting from a smooth surface.



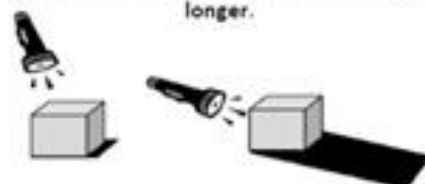
Light travelling and reflecting from a rough surface.



UV rays from sunlight can be harmful which is why you must protect yourself appropriately with sunglasses and sun screen.



As the **light source** moves **higher** in relation to the **object**, the **shadow** gets **shorter**. As the **light source** moves **lower**, the **shadow** gets **longer**.



### Key Vocabulary

Opaque	Describes objects that do not let any light pass through them.
Translucent	Describes objects that let some light through, but scatter the light so we can't see through them clearly.
Transparent	Describes objects that let light travel through them easily, meaning you can see through the object.
Light source	An object that can emit (make) its own light e.g. the sun or a torch.
Reflect	To bounce off.
Reflection	The process where light hits the surface of an object and bounces back into our eyes.
Shadow	An area of darkness where light has been blocked.
Dim	Something that does not shine brightly or give out a lot of light.

## Year 3: Plants

### Key Learning



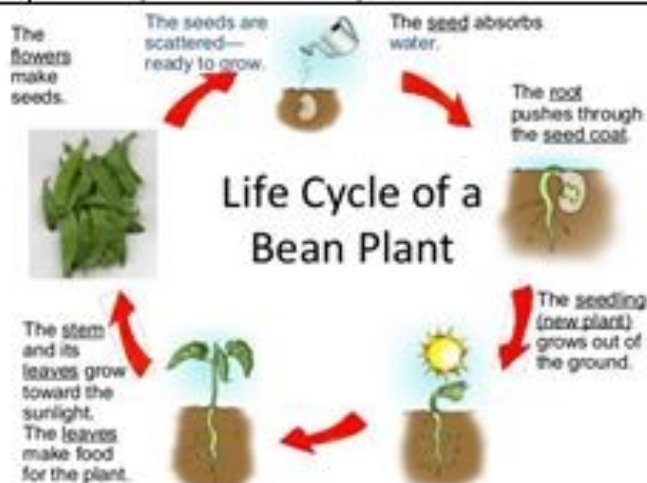
Each structure in a flowering plant has a job to do (a function).

Function of each part of a flower:

Roots	These anchor the plant into the ground and absorb water and nutrients from the soil.
Stem	This holds the plant up and carries water and nutrients from the soil to the leaves. A trunk is the stem of a tree.
Leaves	These make food for the plant using sunlight and carbon dioxide from the air
Flower	These make seeds to grow into new plants. Their petals attract pollinators to the plant.

#### Seed Dispersal

Seeds can be dispersed by:



#### Science Skills for topic

Identifying and classifying	Comparative testing
Research	Pattern seeking
Observation over time	Fair test

### Key Vocabulary

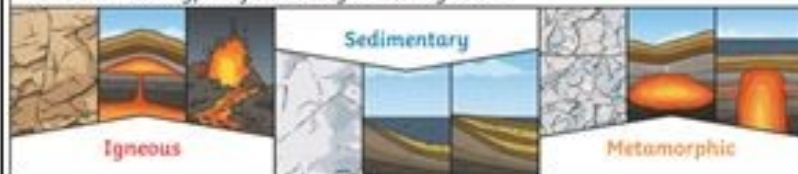
Germination	When a seed starts to grow
Pollination	When pollen is moved from the male anther of a flower to the female stigma.
Pollinator	Animals or insects which carry pollen between plants. Examples include birds, bees and bats.
Pollen	A fine powdery substance produced by a flowering plant.
Fertilisation	When the male and female parts of the flower have mixed in order to make seeds for new plants.
Seed dispersal	A method of moving the seeds away from the parent plant so that the seeds have the best chance to grow.
Nutrients	These substances are needed by a living things to grow and survive. Plants get nutrients from the soil and also make their own food in their leaves.



## Year 3: Rocks

### Key Learning

There are three types of naturally occurring rock.



Soil is the uppermost layer of the earth. It is a mixture of different things.

- Minerals
- Air
- Water
- Organic matter (including living and dead plants and animals).

Natural Rocks			Human-Made Rocks
Igneous	Sedimentary	Metamorphic	
Obsidian	Chalk	Marble	Brick
Granite	Sandstone	Quartzite	Concrete
Basalt	Limestone	Slate	Coade Stone



Fish die and then sink to the bottom of the sea.



The fish is covered in layers of sediment which eventually become rock.



The rock is broken either naturally or intentionally and the fossil is discovered.



After millions of years of sediment being compressed and forming new layers of sedimentary rock, the shape of the fish bones will be embedded in the rock.

### Key Vocabulary

<b>Igneous rock</b>	Rock that has been formed from magma or lava.
<b>Sedimentary rock</b>	Rock that has been formed by layers of sediment being pressed down hard and sticking together. You can see the layers of sediment in the rock.
<b>Metamorphic rock</b>	Rock that started out as igneous or sedimentary rock but changed due to being exposed to extreme heat or pressure.
<b>Magma</b>	Molten rock that remains underground.
<b>Lava</b>	Molten rock that comes out of the ground is called lava.
<b>Sediment</b>	Natural solid material that is moved and dropped off in a new place by water or wind e.g. sand.
<b>Permeable</b>	Allows liquids to pass through it.
<b>Impermeable</b>	Does not allow liquids to pass through it.
<b>Fossilisation</b>	The process in which fossils are made.
<b>Paleontology</b>	The study of fossils.
<b>Erosion</b>	When water, wind or ice wears away land.