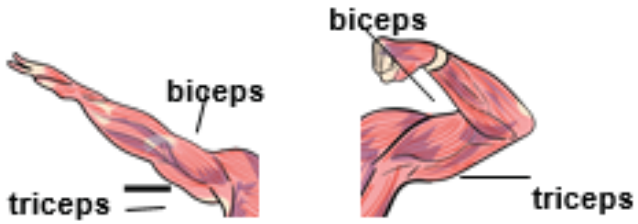
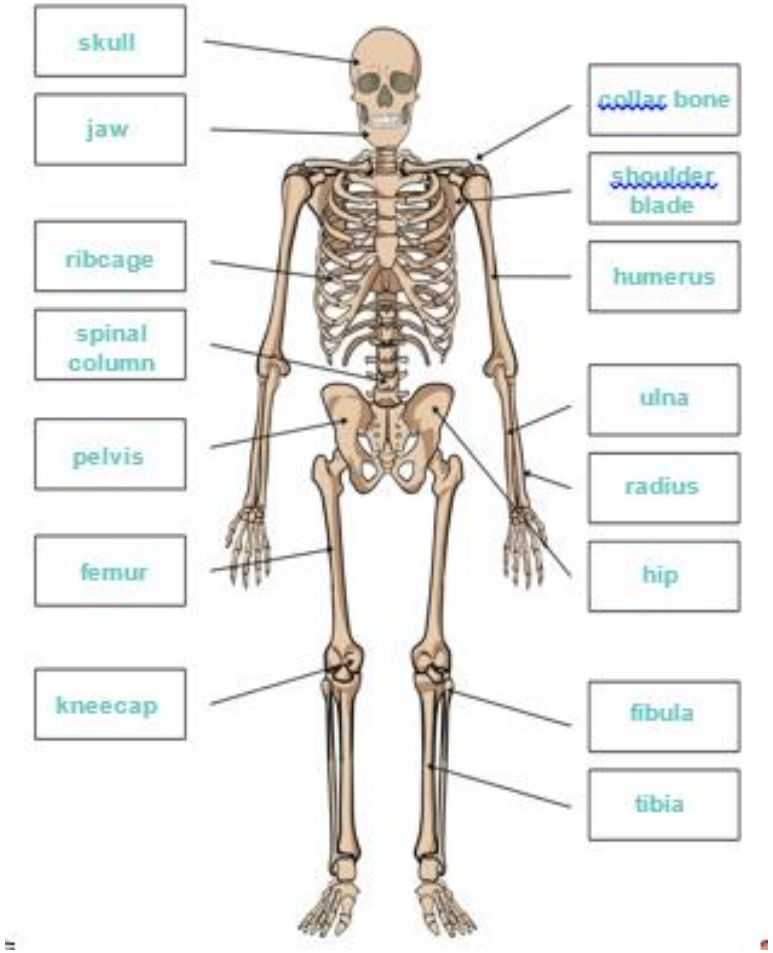
Knowledge Organiser
Animals including humans (skeleton, muscles, nutrition)
Strand: Biology

Vocabulary

Key Word	Definition
nutrition	Food or nourishment.
diet	The food that an animal eats bones
bones	A solid part of the skeleton.
skeleton	The framework of bones that supports the body of an animal.
muscles	A bundle of tissue in the body of an animal that can contract enabling movement.
exoskeleton	A skeleton on the outside of the body.
contract relax	To squeeze together. To become less tense.
healthy unhealthy	Good for your health. Not good for your health .
vertebrate invertebrate	An animal with a backbone (spine). An animal without a backbone (spine). .





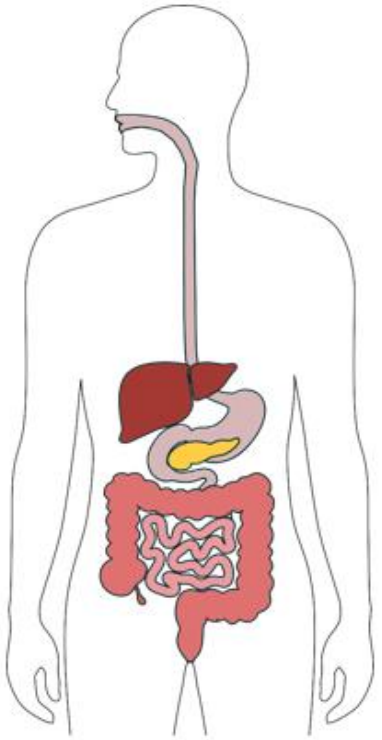
Key Questions

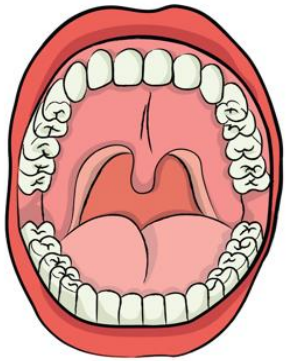
- How does our skeleton help us?
- Do our bones affect what we can do?
- What do our muscles do?
- Do all animals have the same skeleton?
- What types of nutrition do we need?

Knowledge Organiser
Animals including humans (The digestive system)
Strand: Biology

Vocabulary

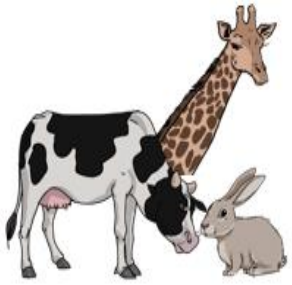
Key Word	Definition
canines	Ripping teeth.
carnivores	Animals that only eat other animals.
digestion	The process of breaking down food into simple chemicals for the body to absorb.
herbivores	Animals that only eat plants.
incisors	Cutting teeth.
large intestine	Where water is absorbed into the blood.
molars	Grinding teeth.
oesophagus	Food and water pipe.
omnivores	Animals that eat both plants and animals.
peristalsis	Muscular action to move food along the digestive tubes
predator	An animal that hunts, kills and eats other animals for food
prey	A term used to describe organisms that predators kill for food.
producer	A plant in a food chain
saliva	A lubricating digestive juice produced in the mouth
small intestine	Where food is broken down and nutrients are absorbed into the blood.
stomach	A rounded vessel in the body where acid and digestive juices break down food





Key Questions

- What is the digestive system?
- Why are teeth different shapes?
- What drink causes the most tooth decay?
- What is a food chain?
- How can I construct a food chain?



This is a simple food chain:

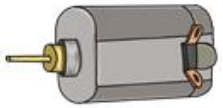
Knowledge Organiser
Electricity
Strand: Physics

Vocabulary

Key Word	Definition
appliance	A device or piece of equipment that has been made to perform a specific task.
battery	A small item used to power small appliances.
circuit	A route through which electricity flows.
component	The parts of a circuit.
conductor insulator	Allows electricity to flow through it. Doesn't allow electricity to flow through it.
current	The rate of flow of electricity measured in amps.
electrical	Something that uses electricity to work
mains power	Electricity provided by power stations.
portable	Can be easily carried around.
pylon	A tower used for keeping electrical wires above the ground.
switch	A device for controlling the flow of electricity in a circuit.








Key Questions

- Which appliances use electricity?
- How can I make a simple circuit?
- Why don't some circuits work?
- How can we test whether a material is a conductor or insulator?
- How do switches affect a circuit?

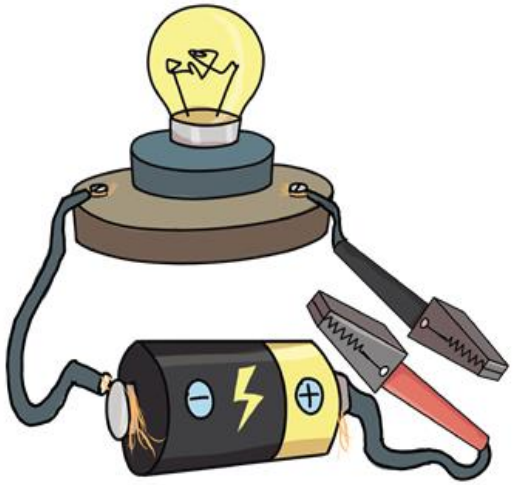

cork


iron nail


copper rod


plastic ruler

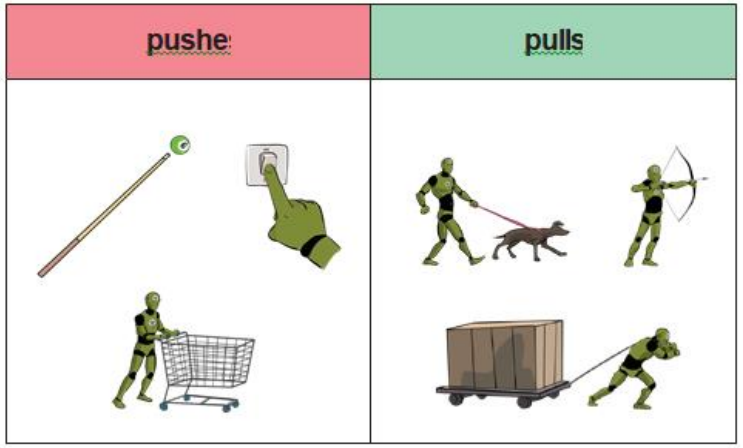

steel spoon



Knowledge Organiser Forces and Magnets: Physics

Vocabulary

Key Word	Definition
force	Push, pull, twist or turn caused when two objects interact with each other
magnet	An object or device that attracts iron or another magnetic material **contact** – touching
contact non-contact	Touching. Not touching.
attract	Pull towards
repel	Push away
magnetic	Attracted to a magnet.
non-magnetic	Not attracted to a magnet.
iron	A metal that can be made into a magnet.



Key Questions

1. What is a force?
2. Do objects move the same on different surfaces?
3. How do magnetic forces work?
4. Which materials are magnetic?
5. Do magnets attract each other?
6. Are all magnets the same strength?

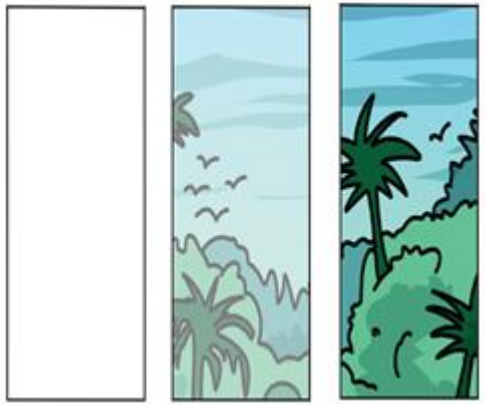
Magnets and their poles

Examples of magnetic objects

Knowledge Organiser
Light
Strand: Physics

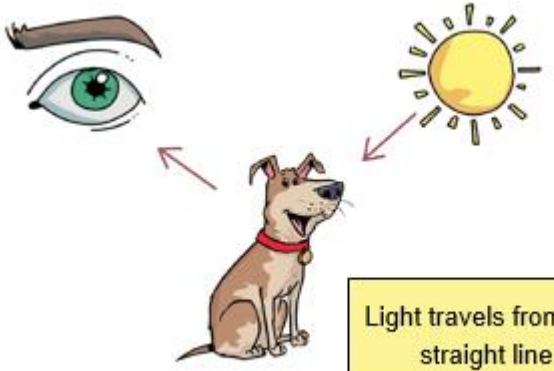
Vocabulary

Key Word	Definition
luminous	Something that emits light.
dark	The absence of light.
reflect	A surface or body that throws back light without absorbing it.
shadow	An area where direct light from a light source cannot reach due to obstruction by an object.
opaque	Opaque materials do not let any light through them – they obstruct the light.
translucent	Translucent materials let some light through but scatter the light in all directions so they cannot see clearly through them.
transparent	Transparent materials let like through them in straight lines so you can see clearly through them.
luminous	Giving off light, bright or shining.
light	A source of energy that allows you to see.
light ray	An imaginary line that represents the line of light.
Refraction	When light changes direction when going through the boundary of state of matter and another.



Key Questions

- What is a light sources?
- What is reflected light?
- Is the sun dangerous?
- What is a shadow?
- Does moving the light source above the object make the object's shadow longer?
- How do mirrors work?

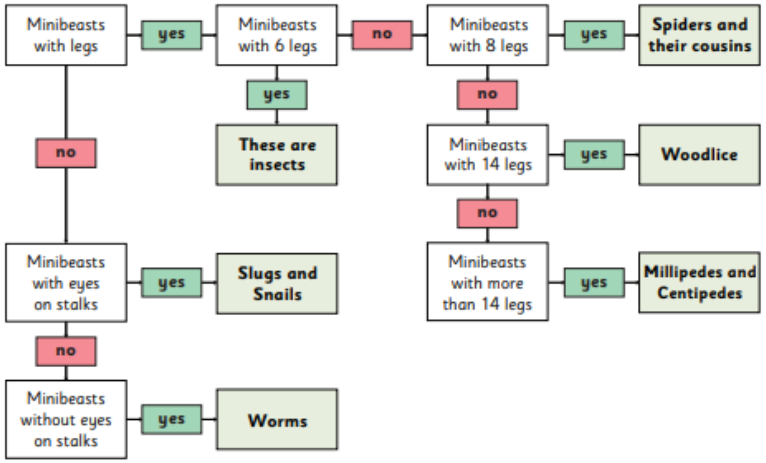


Light travels from the Sun in a straight line.

Knowledge Organiser
Living Things & their Habitat: Biology

Vocabulary

Key Word	Definition
environment	The conditions (both living and non-living) that surround an organism.
classify	To arrange a group of people or things in classes or categories according to shared qualities or characteristics.
vertebrate	An animal which has a backbone.
invertebrate	An animal without a backbone.
exoskeleton	A rigid external covering for the body in some invertebrate animals.
key	A questioning device that allows the progressive narrowing down of the classification of an unknown living thing based on observable or testable features.
adaptation	The way in which an organism is particularly suited to its environment.
pollution	The introduction into the environment of a substance which has harmful effects.



Use the **classification key** to identify these minibeasts.

We can group animals into **five different groups** based on their characteristics.

Fish **Mammal** **Reptile** **Amphibian** **Bird**

Key Questions

1. What are the 7 life processes?
2. How can we sort and group animals?
3. What are vertebrate animals?
4. Which living things can be found in the local area?
5. What is a classification key?
6. How is our environment changing?

Movement
Respiration
Sensitivity
Growth
Reproduction
Excretion
Nutrition

Knowledge Organiser
Plants
Strand: Biology

Vocabulary

Key Word	Definition
bulb	A fleshy base of a plant that can grow another plant.
seed	A small part of a plant that can grow another plant.
leaf	Part of a plant that is typically flat and hangs off the stem.
stem	The main stalk of a plant.
roots	The part of the plant that attaches into the ground for support and nutrient collection.
flower	The seed bearing part of a plant that is usually surrounded by brightly coloured.
tree	A woody plant.
plant	A living organism.
dispersal	To distribute or spread over a wide area.
formation	To create...
pollination	The transfer of pollen to allow fertilisation.
nutrients	Something that provides nourishment to a living thing.

Key Questions

- What do plants need?
- Do the different parts of a plant have a function?
- What are roots?
- How do plants transoprt water?
- How do plants reproduce?
- How are seeds dispersed?

petal
brightly coloured to attract **insects**

stigma
sticky to catch the **pollen** grains

filament
holds the **anther** up

sepal
protects the **flower** when it starts to grow

style
holds up the **stigma** as pollen travels down it to the **ovary**

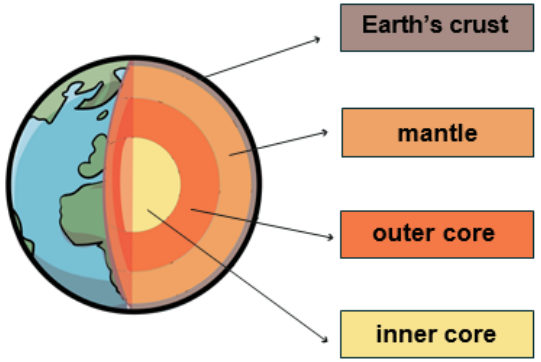
anther
contains the **pollen**

ovary
where the **seeds** are formed

Knowledge Organiser
Rocks and Soils
Strand: Chemistry

Vocabulary

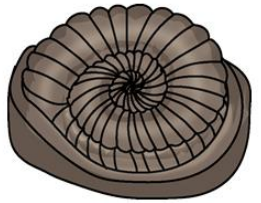
Key Word	Definition
rock	A solid material that makes up the surface of the Earth.
soil	A black or dark brown material on the upper layer of the Earth where plants grow.
fossil	The remains of a prehistoric animal embedded in rock.
appearance	What something looks like.
physical properties	A characteristic of an object.
igneous rock	Rock formed through the cooling and solidification of magma or lava.
sedimentary rock	Rock formed from sediments that have settled at the bottom of a lake, sea or ocean and have been compressed together over millions of years.
metamorphic rock	Rock formed from other rocks that are changed because of heat or pressure.
geologist	A person who studies rocks.
crust	The outer layer of the Earth.
mantle	The part of the Earth between the crust ad the core.
permeable impermeable	Allows liquid t pass through. Does not allow liquid to pass through.



Key Questions

- What are rocks?
- Are all rocks the same?
- How are rocks formed?
- Which rocks make up the Earth?
- What are soils?
- How are fossils formed?

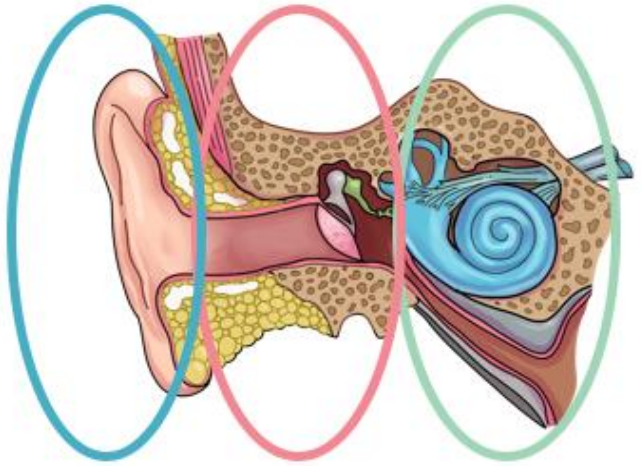
A fossil is the preserved remains or traces of a dead organism. The process by which a fossil is formed is called fossilisation.

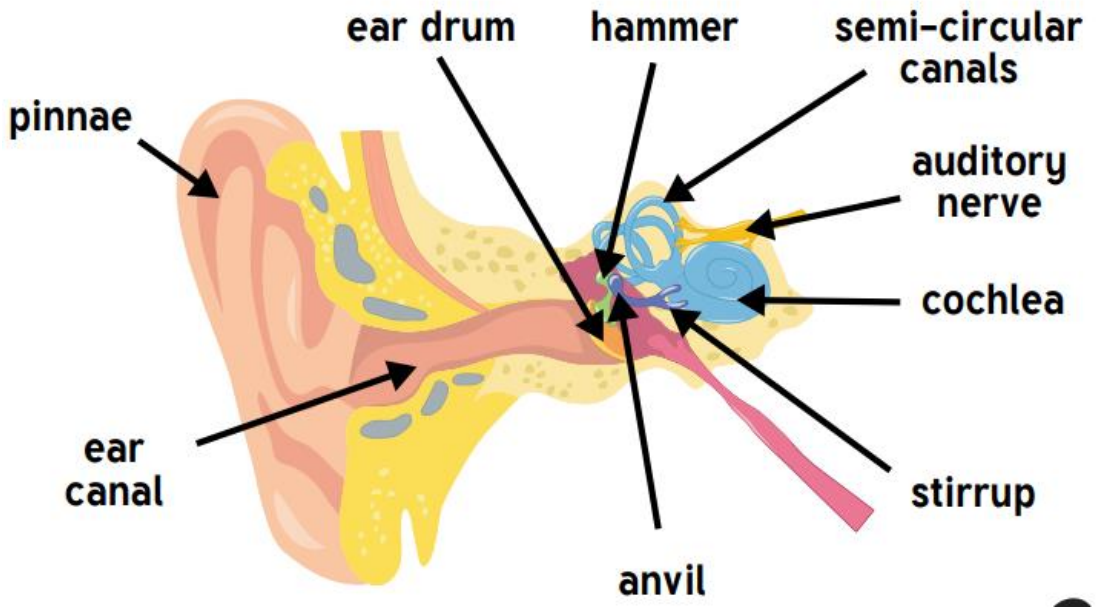


Knowledge Organiser
Sound
Strand: Physics

Vocabulary

Key Word	Definition
vibrate vibrations	Forward and backward movement of an object (usually rapidly).
volume	How loud or quiet a sound is.
pitch	How high or low a sound is.
pinna	The outer portion of the ear (ear flap
cochlea	The sound reception part of the inner ear.
eardrum	The membrane which collects sound from the pinna and passes it to the inner ear..





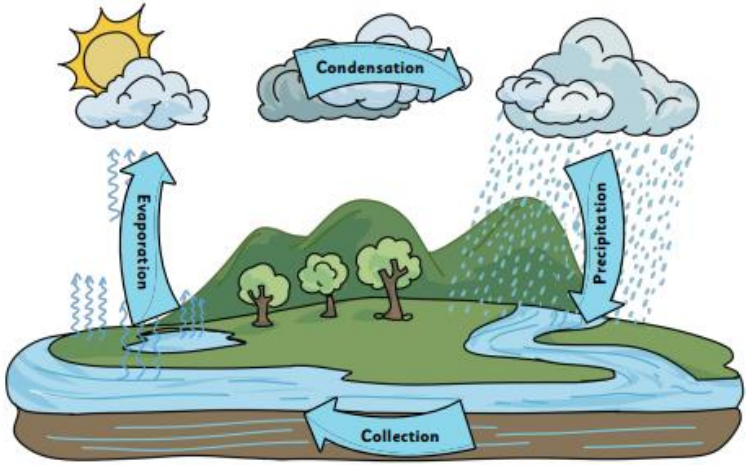
Key Questions

- How are sounds made?
- What is a sound vibration?
- What is inside your ear?
- Does the size of the pinna affect the volume of the sound?
- What is pitch?
- What is volume?
- Which material is best at muffling sound?

Science Knowledge Organiser
States of Matter
Strand: Chemistry
Year 4

Vocabulary

Key Word	Definition
collection	when water flows back into rivers, streams and lakes and gets carried back to sea
condensation	when water vapour cools and turns back into water
evaporation	when water is heated and turns into water vapour
freeze	when something is put at a very low temperature
gas	a state of matter that has no defined shape or volume
liquid	a state of matter that flows freely but keeps the same volume
solid	a state of matter that is firm and stable
precipitation	when water falls from the clouds in the sky
temperature	how hot or cold something is
thermometer	an instrument used for measuring temperature



Key Questions

- What are solids, liquids and gases?
- Do all liquids behave the same?
- What is a thermometer used for??
- How do materials change state?
- What is the water cycle?
- Do all liquids evaporate??
- Does temperature affect the rate of evaporation?

Gas

- Gases are **often invisible**.
- Gases do not keep their shape or always take up the same amount of space. They **spread out** and change their shape and volume to fill up whatever container they are in.
- Gases can be **squashed**.

Liquid

- Liquids can flow or be **poured** easily. They are not easy to hold.
- Liquids **change their shape** depending on the container they are in.
- Even when liquids change their shape, they always take up the **same amount of space**. Their volume stays the same.

Solid

- Solids stay in one place and you can hold them in your hand.
- Solids **keep their shape**. They **do not flow** like liquids.
- Solids always take up the **same amount** of space. They **do not spread** out like gases.
- Solids can be **cut** or **shaped**.