Knowledge Organiser: Animals Including Humans Year 5

Careers connected to Animals Including Humans: field biologist, wildlife biologist, zoologist, midwife, research biologist.

Key Vocabulary

hormones	chemical messengers produced by the body
gestation	the period of time an animal is pregnant for
pregnant	when an animal contains a foetus within the body
toddler	the name of the stage given to a young child when they start to walk
prenatal	the stage before birth when the foetus is developing in the womb
offspring	a child or young animal
foetus	the term for an unborn offspring still within the female mammal's body
dependent	an offspring needing others to look after it
adolescent	a mammal's young adult offspring

Human Gestation Period (9 months*)

The gestation period is when the foetus develops inside the female. It is different in all mammals.

Some animals give birth to 1 baby – the North American Opossum has between 16 and 20!

- Humans - 9 months
- Elephants – 23 months
- Basking shark – 42 months
- North American Opossum - 12 days

Human Young (0-3years*)

Young mammals (babies) are dependent - they:

- need milk
- have poor muscle control
- need lots of sleep
- cannot control toileting

Puppies are born with their eyes closed.

Human babies see light and dark.

Toddlers begin walking between 1-2 years.

Human Adults (21-100 years*)

- Adults are fully grown.
- A dog reaches adulthood at about 2 years.
- Adults reproduce so the whole cycle starts again.

A middle-aged adult

An elderly adult

Human Youngsters (4-11 years*)

Human and other mammal youngsters walk independently, eat independently and toilet independently. They begin to learn new skills.

Human Adolescents/Young Adults (12-21 years*)

- Shoulders broaden
- More muscly
- Hair on legs, chest and face
- Voice breaks

During puberty, hormones cause physical, mental and emotional changes.

Some are the same for boys and girls:

- Hair on armpits and groin.
- Greasy skin/spots
- Mood swings

***These are approximate ages – every individual is different.**

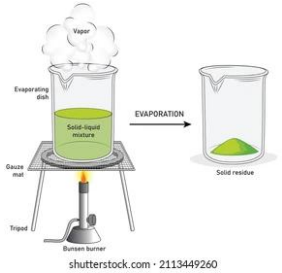
Knowledge Organiser: Year 5 - Changes of Materials

Careers connected to changes of materials: laboratory technicians, technical associates, research analysts, chemistry teachers.

Key Vocabulary

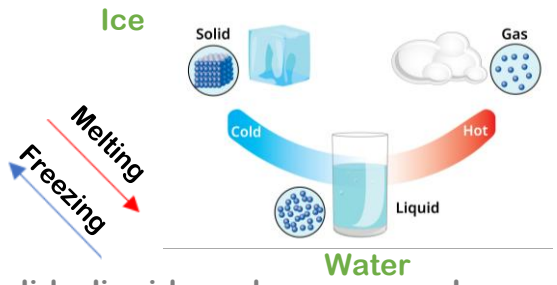
solute	a substance that can be dissolved in liquid
solvent	a substance that can dissolve in a solute
reversible	a change to a substance that can be undone or reversed
evaporate	the process where a liquid changes to a gas
chemical change	a type of change in which a new substance is formed
reaction	process in which substances are converted into different substances

Evaporation



If a solid has **dissolved** in water (for example in a salt solution), **heating** it causes the water to **EVAPORATE**, leaving the solid (salt) behind.

Changes of State



Solids, liquids and gases can change state by being **heated** or **cooled**.

Irreversible Changes




These are **CHEMICAL** changes – they **cannot** be reversed as a new material has been made.

Reversible Changes

liquid chocolate
– cool –
solid cholate

solid lolly
– heat –
liquid lolly

mixture of rice and flour
– sieve –
both separated

dissolved sugar
– evaporation (heat) –
solid sugar

These are **PHYSICAL** changes – they **can** be reversed as no permanent change has been made.

Greenmount Primary School

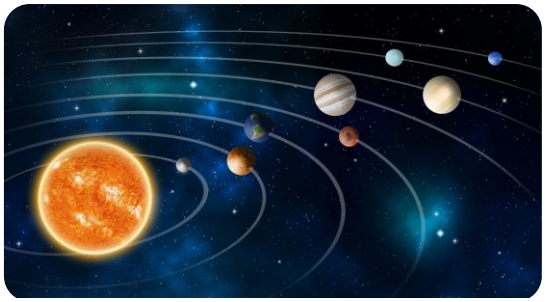
Knowledge Organiser: Earth and Space – Year 5

Careers connected to Earth and Space: Astronomer, Astronaut, Astrophysicist, Astro engineering

Key Vocabulary

solar system	The name for the Sun and all planets and objects that orbit it.
astronomy	The study of space, planets and the universe as a whole.
terrestrial planet	The name given to the four inner rocky planets - Mercury, Venus, Earth and Mars.
gas giants	The name given to the four outer planets - Jupiter, Saturn, Uranus and Neptune.
axis	The (imaginary) line which a planet rotates around and tilts on.
orbit	The path of a celestial object around another, such as Moon around the Earth.
moon	A body which orbits a planet; also called a natural satellite.
phase	The appearance of a Moon or planet, according to the amount of illumination.
waxing	the name given to Moon phases when the Moon is becoming brighter
waning	the name given to Moon phases when the Moon is becoming darker

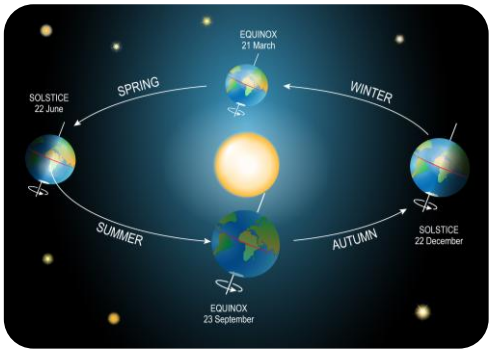
The Solar System



Mercury
Venus
Earth
Mars
Jupiter
Saturn
Uranus
Neptune

Copernicus developed the heliocentric theory that the sun was at the centre of the solar system. The planets orbit the sun in a circular pattern. Each planet has its own characteristics and features. The four inner planets are the rocky terrestrial planets. The four outer planets are the gas giants.

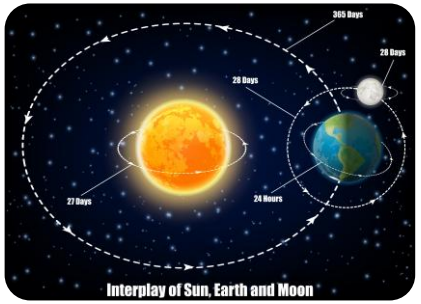
Moon Phases



The moon orbits Earth in an oval pattern whilst spinning on its axis. The sun illuminates the Moon. The shadow of the Earth creates the moon's phases.

Earth's movement

The Earth spins on its axis and completes a full rotation every 24 hours. The Earth is constantly rotating and orbiting the Sun - which takes 365 days. As the Earth rotates, it faces towards and away from the Sun. This creates the day and night cycle.



The Sun

The Sun is a burning ball of gas which appears to move across the sky during the day. However, this movement is actually due to the Earth's orbit around the sun.

Knowledge Organiser: Living Things and their Habitats
Year 5

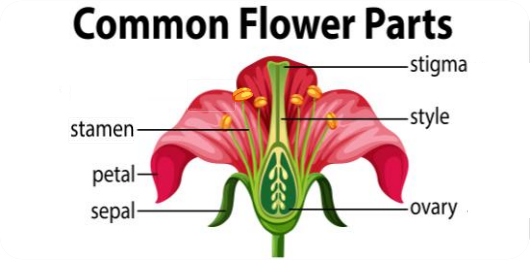
Careers connected to Living Things and their habitats:
Zoologist, Veterinary Surgeon, Biologist

Key Vocabulary

metamorphosis	when insects and amphibians transform from larval stage to their adult form
endangered	an animal is considered endangered when there are very few of them alive
asexual	where only one parent is needed to create offspring
reproduction	to make offspring either sexually or asexually
fertilisation	when a sperm and egg cell join together
living organism	something that can move, use energy and reproduce

Reproduction in plants

Plants contain both male and female cells. Some need to be pollinated in order to be fertilised. Others use asexual reproduction to reproduce.



Mammals

Mammals reproduce and give birth to live young. They can be either placental, monotreme or marsupial.

Birds and Reptiles

Most birds and reptiles are born when the mother lays eggs and incubates them until they are ready to hatch. Once the egg is hatched, the baby is looked after by the mother before leaving the nest.

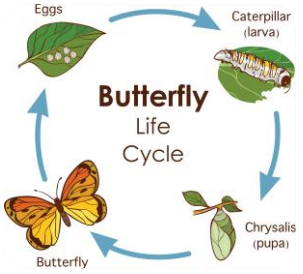
Important People

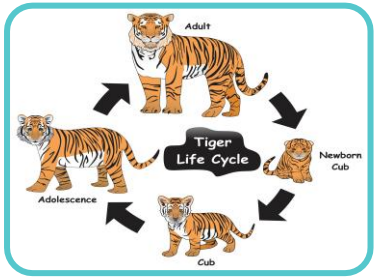
David Attenborough and Jane Goodall study living things. They present the life of animals on earth and have made important documentaries so we can learn about the world around us.

Metamorphosis

Amphibians are a bit different. Many are born live or underwater. They complete a metamorphosis as adults and can live and breathe on land.

Metamorphosis is the change in body form and habits during the life cycle.





Knowledge Organiser: Year 5
Properties of Materials

Key Vocabulary

conductive	a material that allows heat and/or electricity to pass through it
magnetic	material that is attracted to a magnet
thermal	using or producing heat
conduction	heat moving from one object to another through contact
hardness	resistance to scratching and pressure
force	when an object is acted upon by a pull or push motion in a specific direction
dissolve	to mix with a liquid and become part of the liquid
solute	a substance that can be dissolved in liquid
solvent	a substance that can dissolve in a solute, water is a solvent
substance	any material, such as sugar
filtering	the separation of a mixture using a tool with small holes to separate particles
evaporation	the process where a liquid changes into a gas

Properties of Materials

conducts energy	
insulates energy	
transparent	
waterproof	
durable (strong)	
magnetic	

Everyday Materials

Metal saucepans **conduct** heat to warm food.

Wooden spoons and plastic handles **insulate** heat so hands do not get burned.

Soluble Materials

Some solids **dissolve** in water (**SOLUBLE**).

coffee 

sugar 

salt 

jelly 

Some solids do not **dissolve** in water (**INSOLUBLE**).

pepper 

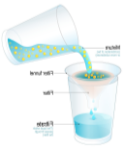
sand 

wax 

Separating Materials

Sieving

Filtering



Magnetism

Magnetic metals:

- iron
- nickel
- steel

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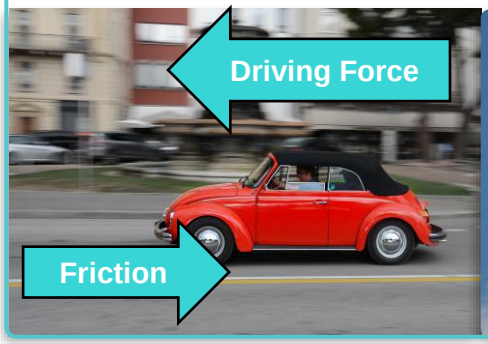
Knowledge Organiser: Year 5 - Forces

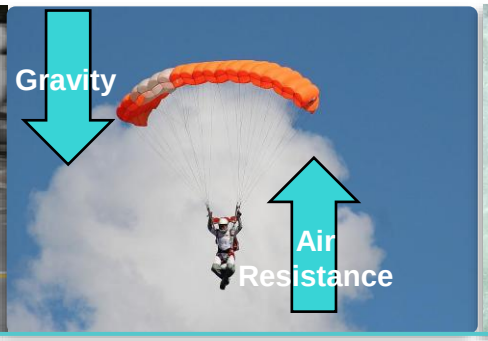
Careers connected to Forces: Aerodynamics engineer, forensic investigator

Key Vocabulary

parachute	a device, usually made from cloth, designed to create air resistance and slow descent
water resistance	friction which acts on an object as it moves through water
streamlined	an object that is shaped to travel through air or water with little resistance
buoyant	to float
upthrust	any force that is causing something to be pushed upwards
friction	the resistance of motion when one object rubs against another
newton	the international metric unit of force
lever	a long arm that rests on a support called a fulcrum
pulley	a wheel over which a belt, rope, or chain is pulled to lift or lower a heavy object

Forces in Action

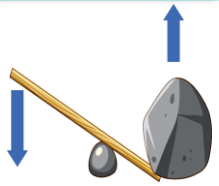




Mechanisms

Pulleys

A pulley is a wheel over which a belt, rope, or chain is pulled to lift or lower a heavy object.



Levers

Levers are a bar that rotates around a point. They make it easier to lift a heavy load.

Gears/Cogs

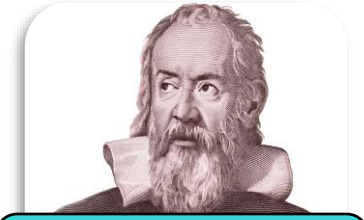
Gears are toothed wheels that mesh together, they rotate in opposite directions.

Mass and Weight

The mass of an item can be measured in **Grams/ Kilograms**.

Weight is how much force is needed to pull an object and is measured in **Newtons**.

Sir Isaac Newton developed his theory of gravity.



Galileo conducted experiments to test mass.