

The background is a light blue-grey color filled with various celestial bodies. There are several yellow planets with horizontal stripes and rings, resembling Saturn. There are also blue planets with rings, pink planets with wavy patterns, and orange planets with horizontal stripes. A large yellow sun with a smiling face is prominent in the lower left. A white comet with a long tail is in the lower right. Small yellow stars are scattered throughout. The text 'Year 5 Knowledge Organisers' is centered in a large, black, sans-serif font.

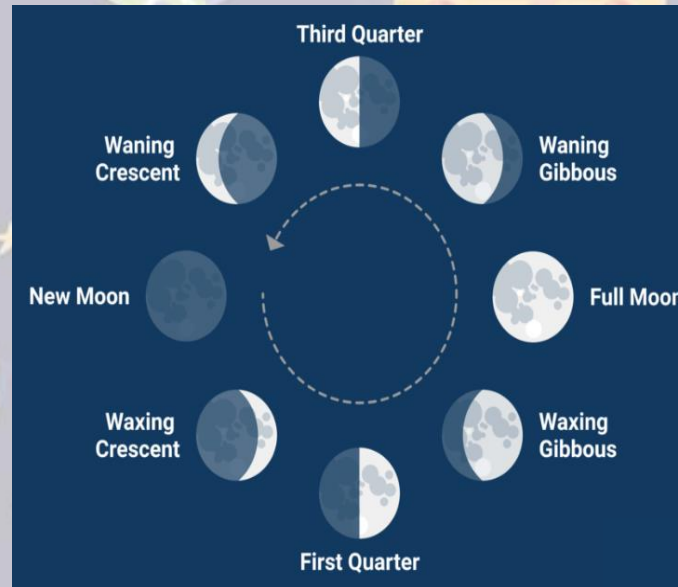
Year 5 Knowledge Organisers

Earth and Space

The Sun is a star at the centre of our solar system.

- ★ There are 8 planets in our solar system: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune. These all orbit the Sun.

Phases of the moon



Key vocabulary

Planet - An object that orbits a star and does not emit its own light.

Star - A giant ball of gas held together by its own gravity and makes heat and light energy.

Gravity - The force that attracts an object towards a larger object.

Orbit - A curved path of a planet taken by one body circling around another body. The earth makes an orbit around the sun.

Solar system - The solar system consists of the Sun and everything that orbits, or travels around, the Sun.

Astronomy - Astronomy is the study of outer space and all of the objects and bodies outside of the Earth's atmosphere, like stars, planets and comets.

Sphere - A round 3D shape in the shape of a ball.

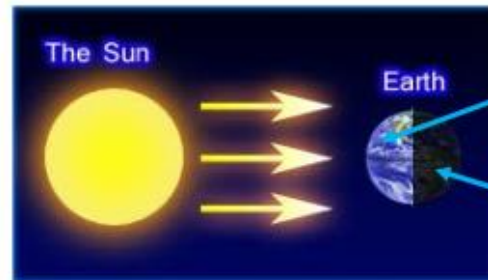
Sun - A huge star that the Earth and other planets in our solar system orbit around.

Moon - A natural satellite which orbits Earth or other planets.

Geocentric model - A belief people used to have that other planets and the Sun orbited around the Earth.

Heliocentric model - The structure of the solar system where the planet orbits around the sun.

Day and Night



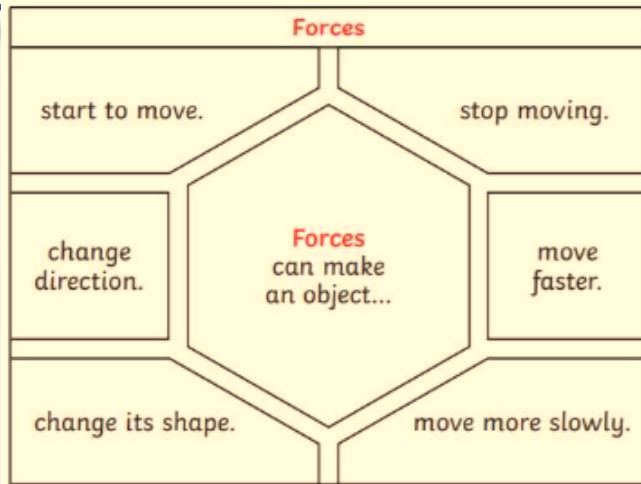
It is day for the half of the Earth facing the Sun

It is night for the half of the Earth facing the Sun

Our Solar System



Forces



Isaac Newton is famously thought to have developed his theory of gravity when he saw an apple fall to the ground from an apple tree.



Key vocabulary

Sir Isaac Newton – An English physicist and mathematician, one of the most influential scientists in history.

Gravity - A force that attracts something with mass towards earth, measured in Newtons per kilogram.

Resistance - A force exerted on something to slow it down or stop it.

Lever - A simple machine used to move an object or operate a machine.

Gear - Toothed wheel that engages with another to change speed or direction of a machine.

Pulley - A wheel which a cord passes through; it helps to raise heavy weights.

Mass - The measure of how much matter is in an object.

Friction - The force or resistance when one object rubs on another.

Air resistance - A type of friction caused by air pushing against any moving object.

Water resistance - A type of friction caused by water pushing against any moving object.

Acceleration – The rate of change of velocity, or how fast an object or person speeds up.

The Moon has a smaller mass than Earth so the gravitational pull on the Moon is smaller than it is on Earth.

Jupiter has a greater mass than Earth so the gravitational pull on Jupiter is stronger than on Earth.

pulleys



Pulleys can be used to make a small force lift a heavier load. The more wheels in a pulley, the less force is needed to lift a weight.

gears



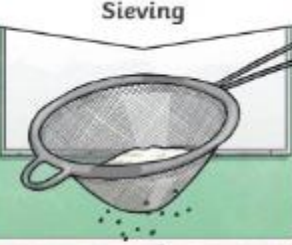


Gears or cogs can be used to change the speed, force or direction of a motion. When two gears are connected, they always turn in the opposite direction to each other.

levers



Levers can be used to make a small force lift a heavier load. A lever always rests on a pivot.

Reversible/Irreversible Changes

Sieving	Filtering	Evaporating
		
Smaller materials are able to fall through the holes in the sieve, separating them from larger particles.	The solid particles will get caught in the filter paper but the liquid will be able to get through.	The liquid changes into a gas , leaving the solid particles behind.

What are reversible changes?

Reversible changes are changes that can be undone or reversed.



What are irreversible changes?

Irreversible changes are changes that **cannot** be undone or reversed.



Key vocabulary

Dissolved - when a substance is mixed with a liquid and the substance has disappeared.

Solution - a mixture that contains two or more substances combined evenly.

Insoluble - a substance that will not dissolve.

Filter - to remove dirt or other solids from liquids or gases. A filter can be made of paper, charcoal, or other material with tiny holes in it.

Sieve - a utensil with meshes or holes to separate finer particles from coarser ones or solids from liquids.

Evaporate - to turn from liquid into gas (vapour).

Condense - Turning water vapour or steam back into a liquid.

Melting - to change from a solid to a liquid state through heat or pressure.

Reversible - able to turn or change back.

Irreversible - not able to turn or change back.

Lifecycles and Habitats



Key vocabulary

Sir Isaac Newton – An English physicist and mathematician, one of the most influential scientists in history.

Gravity - A force that attracts something with mass towards earth, measured in Newtons per kilogram.

Resistance - A force exerted on something to slow it down or stop it.

Lever - A simple machine used to move an object or operate a machine.

Gear - Toothed wheel that engages with another to change speed or direction of a machine.

Pulley - A wheel which a cord passes through; it helps to raise heavy weights.

Mass - The measure of how much matter is in an object.

Friction - The force or resistance when one object rubs on another.

Air resistance - A type of friction caused by air pushing against any moving object.

Water resistance - A type of friction caused by water pushing against any moving object.

Acceleration – The rate of change of velocity, or how fast an object or person speeds up.

Animals including Humans.

The Moon has a smaller mass than Earth so the gravitational pull on the Moon is smaller than it is on Earth.

Jupiter has a greater mass than Earth so the gravitational pull on Jupiter is stronger than on Earth.

pulleys



Pulleys can be used to make a small force lift a heavier load. The more wheels in a pulley, the less force is needed to lift a weight.

gears



Gears or cogs can be used to change the speed, force or direction of a motion. When two gears are connected, they always turn in the opposite direction to each other.

levers



Levers can be used to make a small force lift a heavier load. A lever always rests on a pivot.

Key vocabulary

Sir Isaac Newton – An English physicist and mathematician, one of the most influential scientists in history.

Gravity - A force that attracts something with mass towards earth, measured in Newtons per kilogram.

Resistance - A force exerted on something to slow it down or stop it.

Lever - A simple machine used to move an object or operate a machine.

Gear - Toothed wheel that engages with another to change speed or direction of a machine.

Pulley - A wheel which a cord passes through; it helps to raise heavy weights.

Mass - The measure of how much matter is in an object.

Friction - The force or resistance when one object rubs on another.

Air resistance - A type of friction caused by air pushing against any moving object.

Water resistance - A type of friction caused by water pushing against any moving object.

Acceleration – The rate of change of velocity, or how fast an object or person speeds up.