

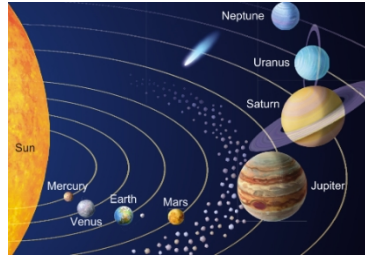


What is our place in the Universe?

Solar System and Beyond

Stars	Huge balls of mostly hydrogen gas that give out large amounts of energy. The Sun is a star.
Stars at Night	Appear less bright than the Sun because they are further away.
Galaxies	Large groups of stars.
Milky Way	The galaxy our Sun is in.
Universe	Made up by all of the billions of galaxies.
Light Year	Measurement of distance. It is the distance travelled by light in one year. 1 light year is approximately ten trillion kilometres.

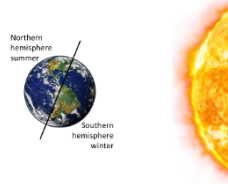
The Model of the Solar System



2. Seasons

Summer	Longer days than nights, Sun high in the sky.
Winter	Longer nights than days, Sun not very high in the sky.
Cause of Seasons	Due to the tilt of the Earth's axis by 23.5°.
Causing Summer	When the northern hemisphere is tilted towards the Sun it is summer in the UK.
Causing Winter	When the northern hemisphere is tilted away from the Sun it is winter in the UK.

Causing Seasons Diagram



Summer Sun

Because the Sun is higher in the sky in summer the heat is more concentrated, making it feel warmer

3. Magnetic Earth

Compass	A magnet that points north.
North-Seeking pole	The end of a bar magnet that points north. Shortened to 'north pole'.
South-Seeking pole	The end of a bar magnet that points south. Shortened to 'south pole'.
Attraction	When two magnets are pulled together. Opposite poles will attract each other.

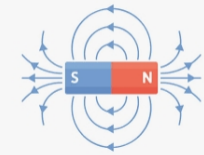
Repulsion

When two magnets are pushed apart. The same poles will repel each other.

Magnetic Field

The area around a magnet where it has an effect. Can be found using iron filings or a small compass.

Magnetic Field Diagram



Magnetic Field Strength

Strongest closest to each pole. The field gets weaker as you get further from the magnet.

Magnetic Field Direction

The direction of a magnetic field is always from the north pole towards the south pole.

4. Gravity in Space

Gravity

Force exerted by all objects with mass. This force pulls other objects towards it.

Bigger Mass

The bigger the mass of an object, the stronger the force of gravity it exerts.

Weight

The force of the Earth's gravity pulling down on a mass.

Measured in Newtons (N)

Gravitational Field

The space around an object where gravity attracts things.

Gravitational Field Strength (g)

At the surface of the Earth it is *9.8 newtons per kilogram (N/kg)*.

Weight Formula

Weight = mass x gravitational field strength
 $W = m \times g$

Gravity and Orbits

The force of gravity keeps the planets in their orbit of the Sun.