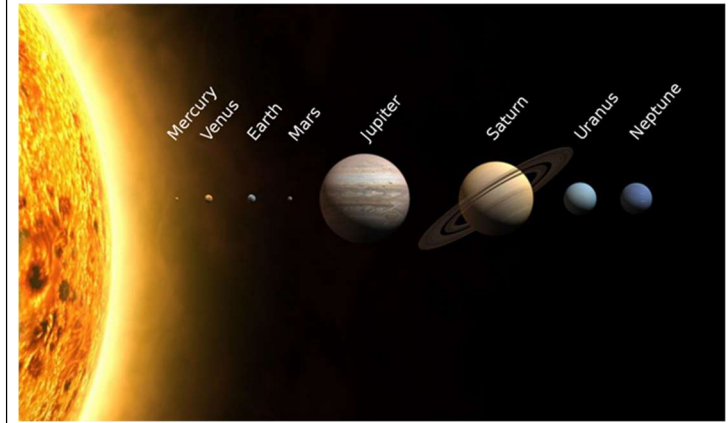


Key Vocabulary

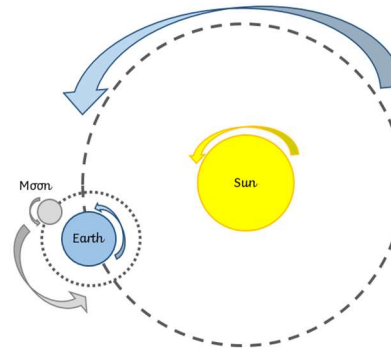
Orbit	A regular movement around another object in a curved path
Asteroid belt	Sits between the orbits of Jupiter and Mars
Dwarf planet	A celestial body that is too small to be identified and classified as a planet
Elliptical path	The paths planets and stars take around the sun
Axis	The Earth spins on an axis and therefore is not vertical
Lunar cycle	A 28 day cycle of the moon
Phases of the moon	When different parts of the moon are lit up by the sun so we see different parts of the moon
Waxing	When the moon is increasing in size
Waning	When the moon is decreasing in size
Geocentrism	The old theory of how the solar system worked
Heliocentrism	The new theory of how the solar system works and what we believe today
Celestial body	An object in space. This could be a moon, a planet, a star or even space junk.

The solar system

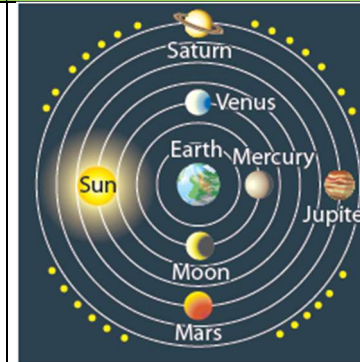


Movement of the Earth, Earth's moon and the sun

- The moon rotates on its axis (1 full turn = 28 days = 1 orbit of Earth).
- The moon orbits Earth (28 days = 1 complete orbit) giving us the phases of the moon visible from Earth.
- The Earth rotates on its axis (24 hours) giving day and night.
- The Earth's axis is on a tilt, giving us seasons.
- The Earth orbits the sun (365 $\frac{1}{4}$ days = one complete orbit).
- The sun rotates on its axis (average = 27 days).



Geocentric model of the solar system (old theory)



People thought this model to be true because ...

- The Earth feels solid, and you cannot feel it moving...
- ... so everything else must move around the Earth.

Aristotle 384BC - 322BC



Aristotle was a famous Greek astronomer. He said the Earth was at the centre of the Solar System. He only knew planets Mercury, Venus, Mars, Jupiter and Saturn existed. He said these planets and the stars moved in perfect spheres around the Earth.

Ptolemy (90AD - 168AD)



Ptolemy (90AD-168AD) added to Aristotle's view of the solar system. He said the planets were exact spheres, but that they moved around the earth in elliptic orbits.

Alhazan (965 - 1039 AD)

In 1038 the famous middle East astronomer Alhazan was the first person to use mathematics to explain how the planets moved (their orbits around the sun).

Nicolaus Copernicus (1473 - 1543)



This astronomer (1473-1543) made accurate observations of the Moon and planets. He used mathematics to show that their movements could be much better explained if you put the Sun at the centre of the solar system.

Johannes Kepler (1571 - 1630)



Kepler used mathematics to show that the orbits of the planets around the Sun were elliptical. He also showed that planets move faster when they are closer to the Sun than when there are further away.

Galileo (1564 - 1642)



Galileo (1564-1642) used telescopes to show that Jupiter had its own moons. He championed the idea that the Sun was at the centre of the solar system. This led him to argue with the Catholic Church, who said the Earth was at the centre of the solar system.