# Pye Bank CE Primary DSAT Knowledge Organiser

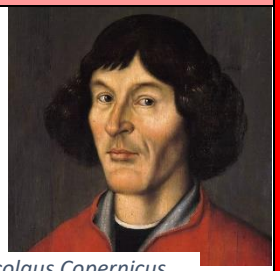
## YEAR 5 — PHYSICS: Sun, Earth and Moon: What is moving? — SCIENCE

### KEY VOCABULARY

**Day:** the time it takes for a planet to rotate once on its own axis. For Earth this is 24 hours.
**Light Year:** the distance light travels in a year.
**Lunar eclipse:** the shadow created when the Earth's orbit places it directly between the Sun and Moon.
**Lunar month:** the time it takes for the Moon to complete its orbit of the Earth: 29½ days.
**Moon:** the natural satellite of the Earth, seen at night. The Moon is visible from Earth because it reflects light from the Sun. The Moon is made of rocks and minerals. Natural satellites orbiting other planets are also known as moons.
**Phases of the Moon:** the amount of the Moon that is visible from the Earth, which changes according to the Moon's relative position.
**Planet:** a large spherical object in the Solar System that orbits the Sun.
**Revolution:** when one body (object/planet) moves around another. For example, the Moon revolves around the Earth and the Earth revolves around the Sun.
**Rotation:** is a circular movement of an object around a centre of rotation. The earth rotates on its axis every day. It takes 23hours and 56 minutes to complete a full rotation.
**Solar eclipse:** the shadow created when the Moon's orbit places it directly between the Sun and the Earth. This leaves the Earth in darkness for a few minutes.
**Sun:** the star in the centre of the Solar System around which the Earth orbits. The Sun produces natural light and heat and is essential for all life on Earth.
**Universe:** everything that exists, including all physical matter and energy. The Universe includes the entire contents of space, including planets, moons, stars, comets, asteroids and space dust.

### KEY SCIENTIST – Heliocentric or Geocentric

The work and ideas of many astronomers (such as Copernicus and Kepler) combined over many years before the ideas of the heliocentric model was developed. Galileo's work on gravity allowed astronomers to understand how planets stayed in orbit.



*Nicolaus Copernicus*

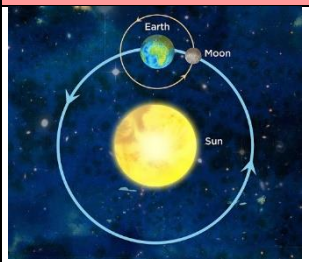

**Heliocentric Model:** the structure of the Solar System where the planes orbit around the Sun.


**Geocentric Model:** a belief people used to have that other planets and the Sun orbited around Earth.

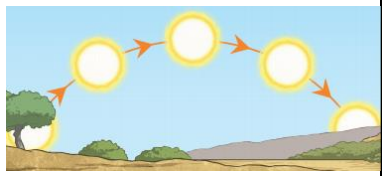
### STICKY KNOWLEDGE

1. Sun, Earth and Moon as approximately spherical bodies (astronomical objects shaped like spheres).
2. The planets in our solar system orbit the sun (heliocentric model) in an elliptical (oval) path.
3. The Earth orbits the sun (365 days) and the moon orbits the Earth (27 days)
4. The Earth rotates on its axis completing one rotation every 24 hours which results in day and night.
5. There are 8 planets in our solar system. Mercury, Venus, Erath and Mars are rocky planets. Jupiter, Saturn, Uranus and Neptune are mostly made up of gases (helium and hydrogen) although they do have cores made up of rock and metal. Pluto used to be considered a planet but was reclassified as a dwarf planet in 2006.

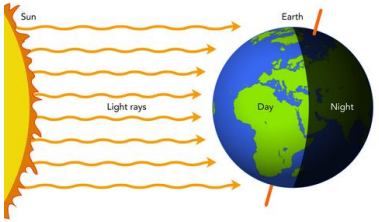
### KEY CONCEPT - Day and Night




The Earth orbits (revolution) the sun in an elliptical (oval) shape. It takes a little over 365 days to complete one full orbit. At the same time, the moon orbits the earth. This takes 29.5 days and is also in an elliptical shape.



It appears to us that the Sun moves across the sky during the day but the Sun does not move at all. It seems that the Sun moves because of the movements of Earth.




Earth rotates (spins) on its axis. It completes a full rotation once in 24 hours. Daytime occurs when the side of the Earth is facing the sun. Night occurs when the side of the Earth is facing away from the Sun.

### KEY CONCEPT - Phases of the Moon

The moon orbits Earth in an oval shaped path while spinning on its axis. At various times in a month, the moon appears to be different shapes. This is because as the moon rotates round the Earth, the Sun lights up different parts of it. These are called the Phases of the Moon.