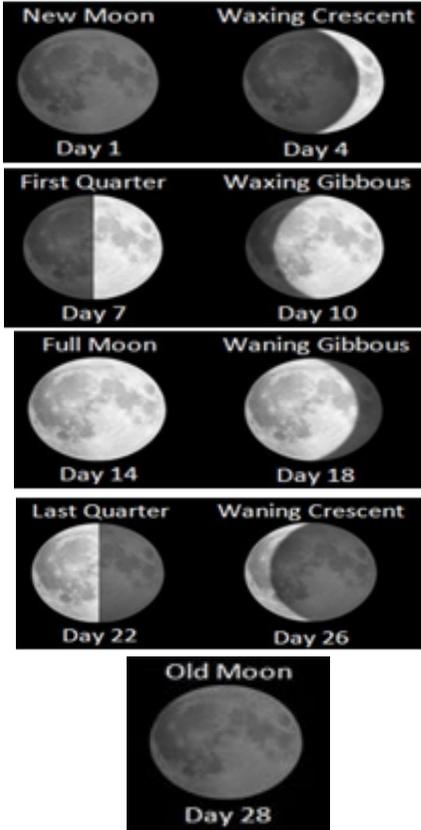


The Moon is not a light source. It does not create its own light. We can only see the Moon because it reflects light from the Sun.

The Moon takes approximately 30 days to complete its orbit around the Earth, after which its lunar cycle repeats itself.

Y5: Thinking like a Scientist...

Earth & Space



Day and Night

The sun appears to rise and set because of the Earth's rotation on its axis. The Earth makes one complete turn every 24 hours and it rotates towards the east. It is night in some parts of the world where it is day in other parts. The world is divided into 24 different time zones. One for each hour of the day.

| | Term | Definition |
|----|--------------|---|
| 1 | Star | A burning mass of gas that makes heat and light energy (E.g. the sun). |
| 2 | Planet | An astronomical object that orbits a star and does not emit its own light. It can be terrestrial (dense and rocky) or Jovian (gas giant). |
| 3 | Gravity | The force that attracts an object towards a larger object. |
| 4 | Solar System | A star with objects (such as planets) revolving around it. |
| 5 | Light-year | The distance light travels in a year (≈9.46 trillion km). |
| 6 | Galaxy | An extremely large group of stars and planets that extends over many billions of light-years , held together by gravity (E.g. Milky Way and Andromeda). |
| 7 | Universe | All of space and everything in it (including stars , planets and galaxies). |
| 8 | Satellite | An object either natural (E.g. a moon) or man-made, that orbits around a planet . |
| 9 | Orbit | A curved path of a planet , satellite or spacecraft around an object such as the sun due to the attraction of gravity . |
| | Vacuum | A space with no air. |
| 11 | Asteroid | Irregularly shaped rock that orbits the sun, mostly occurring in the asteroid belt. |
| 12 | Meteor | A mass of rock that burns after entering the Earth's atmosphere (meteorite when the rock has cooled on Earth) |
| 13 | Comet | A mass of ice and dust that has a long, luminous tail of gas. |
| 14 | NASA | The National Aeronautics and Space Administration – a US agency responsible for the exploration and study of space. |
| 15 | Astronomy | The branch of science that deals with space and the physical universe as a whole. |

The Solar System

Our solar system formed about 4.5 billion years ago from a dense cloud of interstellar gas and dust. The cloud collapsed, possibly due to the shockwave of a nearby exploding star, called a supernova. When this dust cloud collapsed, it formed a solar nebula—a spinning, swirling disk of material

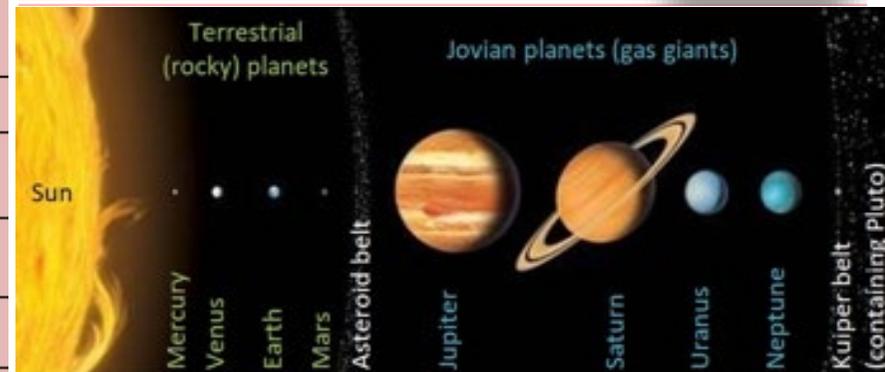
As time passed, material began to clump together due to gravity, forming many objects called planetesimals. Over the course of millions of years, they collided with each other to form the planets and moons.

Ancient astronomers first thought that the Earth was the centre of the universe, and that everything else moved around it in circles.



We call this the **geocentric model**

We now know that the sun is at the centre of the universe and the planets move in circles (orbits) around it. This is called the **heliocentric model**



The roughly spherical shape of the Earth can be confirmed by many different types of observation from ground level, aircraft, and spacecraft. The shape causes a number of phenomena that a flat Earth would not.

