

**Previous Knowledge**

We have 4 seasons/ The sun is a source of light/ The properties of a sphere

**Project Hook or 'Wow' memory**

Acting out relative sizes in playground

**The key skills we want pupils to use during this topic:**

Gather, record, sort and present data in a variety of ways.

Record findings using scientific language, drawings, labelled diagrams and tables.

Report findings from investigations and present conclusions. Use results to draw conclusions.

**Learning Steps**

**Key Knowledge (answers)**

**What shape is the earth? How do we know? (Research/enquiry)**

The earth is spherical although people believed that it was flat. We know from photos from space. No matter what angle the photo is taken from it is still a sphere.

**Is there a comparison between size of planets and their movement in space relative to the sun? (Pattern seeking)**

The inner, rocky planets are smaller than the outer, gaseous planets. Distances in the solar system are very large. Using AU helps keep the numbers manageable, or smaller, so we can easily calculate very large distances. Sun: stands at the edge of the area  
Mercury = 1 step from sun Venus = 2 steps from sun Earth = 2.5 steps from sun  
Mars = 4 steps from sun Asteroid belt = 8 steps from sun Jupiter = 13 steps from sun Saturn = 24 steps from sun Uranus = 49 steps from sun Neptune = 76 steps from sun Kuiper belt = 100 steps from sun.

**How have our ideas of the solar system changed over time? (Change over time)**

Geocentric- they believed that the Earth did not move and that both the Sun and Moon orbited the Earth. Heliocentric -Copernicus ultimately did not place the Sun at the centre as he believed that the Sun itself was orbiting a central point outside of itself. It was Newton, with his ideas about gravity that was able to fill in this missing link.

**How does the length of daylight hours change in each season (Comparative tests)**

The Earth's axis is tilted as it travels around the Sun, so some parts of the Earth receive more **sunlight** each day than others. This **changes** during the year because the Earth moves about the Sun, which gives rise to the **seasons**

**Why does the moon appear to change shape during the month? (Research/enquiry)**

The Moon appears changes shape according to how much of it you can see (as long as it's not cloudy!) and that depends on how much of the bit you can see is facing the Sun. The Sun's light reflects off the Moon enabling you to see it.

**How does a crater's size change with the size of the meteorite? (Fair test)**

The higher the **drop height**, the greater the velocity of the **marble**, so a larger **crater** will be made and the ejecta will spread out farther. If the angle of impact is changed, then the rays will be concentrated and longer in the direction of impact. A more horizontal impact angle **produces** a more skewed **crater** shape.

**Key vocabulary**

**Orbit**

the curved path in space that is followed by an object going round and round a planet, moon, or star

**Solar System**

the Sun and all the planets that go round it

**axis**

an imaginary line through the middle of something

**gravity**

the force which causes things to drop to the ground

**Spherical bodies**

Astronomical objects that are shaped like spheres

**satellite**

Any object or body in space that orbits something else.

**Statutory Requirements**

- Describe the movement of the Earth, and other planets, relative to the Sun in the solar system
- describe the movement of the Moon relative to the Earth
- Describe the Sun, Earth and Moon as approximately spherical bodies
- Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.

