

## Scientific Enquiry

### researching



**Researching** means using secondary sources to find information. We will find out how ideas about the solar system have developed, understanding how the geocentric model of the solar system was replaced by the heliocentric model by considering the work of the scientists Ptolemy, Alhazen and Copernicus. We will use research to create a model or role play to show the movement of the Earth around the Sun, the Moon around the Earth and why day and night occur. We will research and explain why we have time zones.

### pattern seeking



**Pattern seeking** means looking for links between variables. We will observe and record how shadows caused by the Sun change through the day identifying any patterns.

## Working Scientifically

**Asking** scientific questions

**Planning** an enquiry

**Observing** closely

**Taking measurements**

**Gathering and recording** results

**Presenting** results

**Interpreting** results

**Concluding** (drawing conclusions)

**Predicting**

**Evaluating** an enquiry

### Earth

The planet we live on is called **Earth**. It travels in a slightly flattened path, called an **orbit**, around the sun.



**Earth** takes 365 ¼ days to complete its orbit around the Sun.

### rotate

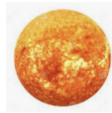
**Rotate** means to spin or turn around an axis which may be visible or invisible.



The Earth **rotates** on its axis every 24 hours. As Earth rotates half faces the Sun (day) and half faces away from the Sun (night). As the Earth **rotates**, the Sun appears to move across the sky.

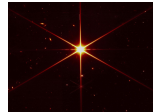
### the Sun

The **Sun** is a star. It is at the centre of our Solar System. The **Sun** is a great spinning ball of hot, glowing gas.



### star

A **star** is a celestial body. A giant sphere of hot gas. The **Sun** is a type of star.



### moon

A **moon** is a celestial body (a naturally occurring object in space) that orbits a planet. Earth has one **moon** which orbits the Earth taking about 28 days to complete its orbit. Jupiter has four large moons and several smaller ones.



### orbit

The **orbit** is the path that an object, such as a planet, travels around a particular point in space such as the Sun. Orbits are determined by gravity.



### spherical

A **spherical** shape is a round, three-dimensional shape.

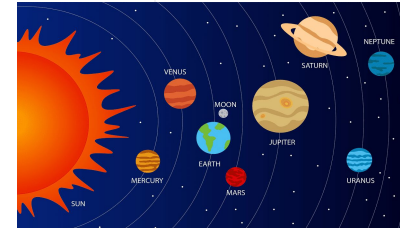


The Sun, Earth and Moon are approximately **spherical**.

### solar system

There are 8 planets in our **Solar System** including Earth. These travel around the Sun in fixed orbits.

The planets in our **Solar System** are: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune. (Create a mnemonic like this to help you remember them: **My Very Excellent Mother Just Served Us Nachos!**)



### Things you learnt in previous topics

In Year 1, you observed changes across the four seasons. In Year 1, you also observed and described weather associated with the seasons and how day length varies.



### How this connects with future learning

In Secondary School, you will measure the force of gravity. You will learn that on Earth  $g=10 \text{ N/kg}$  and this is different on other planets and stars. You will learn about gravitational forces between the Earth and the Moon and between the Earth and the Sun. You will learn about the Sun as a star, other stars in our galaxy and other galaxies. You will learn about why we have seasons and the Earth's tilt; why day length differs at different times of year, in different hemispheres.