

YEAR 5/6 - BENEATH OUR FEET

EARTH & SPACE

What I have already learnt

Year 1

Children will have learnt about seasonal changes · Observe changes across the four seasons. Observe and describe weather associated with the seasons and how day length varies.

Year 3

I recognise light from the sun can be dangerous and can find ways to protect my eyes.
I recognise that we need light in order to see things and that dark is the absence of light.

What I will have learnt by the end of the unit/key stage

I can describe the movement of the Earth, and other planets, relative to the Sun in the solar system

I can describe the movement of the Moon relative to the Earth

I can describe the Sun, Earth and Moon as approximately spherical bodies

I can use the idea of the Earth's rotation to explain day and night and the apparent movement of the Sun across the sky

KEY KNOWLEDGE

Describe the movement of 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 relatively spherical bodies

Use the idea of the Earth's rotation to explain day and night

Links to future topics... Year 7 · Explain the effects of the motion of the Sun, Earth, and Moon.

Key Scientists

1. Aristarchus (310 - 230 B.C.). He was the first to figure out that the Earth travels around the Sun.
2. Nicolas Copernicus (1473 - 1543). Had the idea that Earth revolves on its axis and the Earth and other planets orbit around the Sun
3. Galileo Galilei (1564 - 1642). Discovered four of Jupiter's moons. In 1609 was the first person to make a study of the skies with a telescope.
4. Aristotle
5. Edwin Hubble (1889-1953). In 1924 Hubble showed that nebulae (fuzzy light patches in the sky) were distant galaxies. In 1929 he found the speed of galaxy moves away from the Earth depends on its distance from the Earth. If a galaxy is four times as far away as another, it is moving four times as fast. This is Hubble's law.
6. William Huggins. Showed that stars are made up of the same elements that exist on Earth.
7. Cecilia Payne-Gaposchkin (1900-79). In the 1920's she proved that stars are made mostly of hydrogen.
8. Arthur Eddington (1882- 1944). He was the first to work out what the inside of a star was like.
9. Professor Brian Cox (1968 -) Contemporary physicist, presents many BBC programmes)
10. Heidi Hammel (1960 -) Astronomer

KEY VOCABULARY

Solar system - the collection of 8 planets and their moons in orbit around the sun, together with smaller bodies in the form of asteroids, meteoroids and comets.

Planet - a celestial body moving in an elliptical orbit round a star.

Celestial body - a natural body positioned outside of the Earth's atmosphere.

Elliptical - an oval shape (e.g. an elliptical orbit).

Orbit - the curved path of a celestial object around a star, planet or moon.

Revolution - the movement of one object around the centre of another object.

Rotation - the movement of one object around the centre of its own axis.

Season - each of the four divisions of the year marked by particular weather patterns and daylight hours, resulting from the Earth's changing position with regard to the Sun (winter, autumn, summer and spring).

Moon Phases - different ways the Moon looks from Earth over approximately a month.

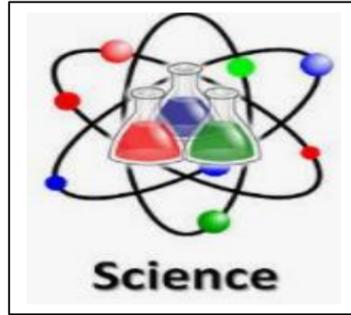
Eclipse - the obscuring of light from one celestial body by the passage of another.

Lunar Eclipse - an eclipse in which the moon appears darkened as it passes the Earth's shadow.

Solar Eclipse - an eclipse in which the sun is hidden by the moon.

Key Concepts

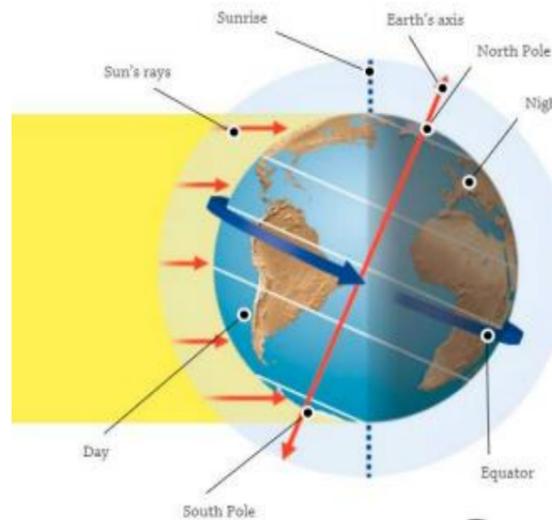
- Biology
- Chemistry
- Physics
- Scientific Enquiry
- Science for the future
- **Vocabulary**



Key skills I will learn/use

- planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
- taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate
- recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
- using test results to make predictions to set up further comparative and fair tests
- reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations
- identifying scientific evidence that has been used to support or refute ideas or arguments

DAY and NIGHT - Earth rotates (spins) on its axis, it does a full spin once every 24 hours, which is our day and night. Daytime occurs when the side of the Earth is facing the sun and night occurs when the side of the Earth is facing away from the sun.

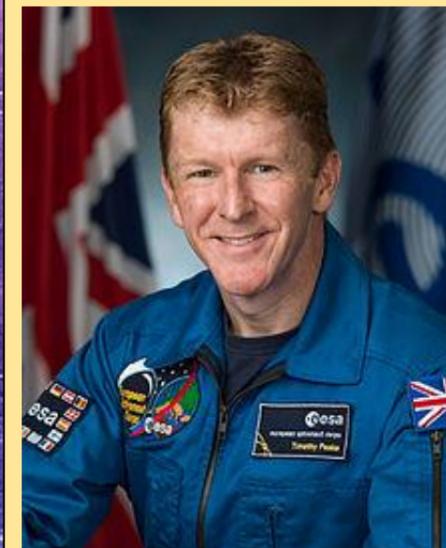


THE EARTH and THE MOON The moon orbits Earth in an oval-shaped path whilst it spins on its axis. At different times in the month the moon appears to be different shapes, this is because the sun lights up different parts of the moon as the moon moves around the Earth.



ASTRONAUTS and SPACE MISSIONS

The first man-made satellite to orbit Earth was called Sputnik and was launched by the Soviet Union in 1957. **Yuri Gagarin** was the first human in space in 1961. **Neil Armstrong** was the first person on the moon in 1969. The International Space Station was launched in 1998 and is a joint project between 5 space agencies (USA, Russia, Japan, Europe and Canada). It is a research laboratory which is in Earth's orbit.



Tim Peake was born in Chichester, Sussex, 7 April 1972. He shot to fame when being the first British astronaut to travel into space in over 20 years. Prior to this, Tim Peake was recruited by the British Army for 17 years, working as Platoon Commander, followed by a helicopter pilot.

My Very Excellent Memory Just Served Up Nine Planets!
(Remember - **Pluto** is no longer classified as a planet.)

