



Year 5: Earth in Space



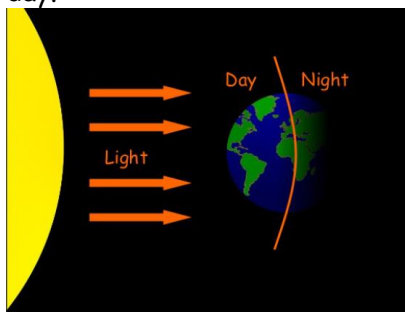
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Key Concepts:

The universe is vast and contains billions of stars. Our solar system is a collection of planets and moons orbiting our nearest star, the sun.

All planets and moons are spinning on their axes as well as orbiting. The time it takes for the planet to spin once is called a day. The time it takes to orbit completely around the sun is called a year. It takes them different amounts of time to complete one orbit/ one spin.

The sun appears to move across the sky because the Earth is spinning on its axis; when it points away from the sun, it is night. When it is pointing towards the sun, it is day.



The moon, sun and earth are approximately spherical.

Types of Enquiry:

Sorting and classifying:

None in this topic.

Fair/ comparative test:

How does the length of daylight change in different seasons?(comparative test)

Use of secondary sources:

Research how human understanding of our solar system have changed over time through the study of Ptolemy, Alhazen and Copernicus
Compare the time of day in different places on the earth.

Research information about different planets.

Change over time:

Create a shadow clock/ sundial. Calibrated to show the beginning/ end of the school day and midday.

How have people's ideas of the universe changed over time?

How does the shape of the moon change over the course of a month?

Pattern seeking:

Compare sunrise/ sunset data at different times of the year.

Is there a pattern between the size of a planet and how long it takes to orbit the sun?

Vocabulary:

Earth, Sun, Moon, Mercury, Jupiter, Saturn, Venus, Mars, Uranus, Neptune

Spherical, Solar system, rotates, star, orbits, planets, axis, day, season,

Phases of the moon

Crescent, full, new moon



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The sun is the centre of our solar system and it has 8 planets. (Pluto was reclassified in 2006)



Stars produce vast amounts of heat and light. Know that it is dangerous to look directly at the sun, even with sunglasses. All other objects are lumps of rock, metal or ice and can only be seen because they reflect the light of stars.

The moon is a celestial body which orbits a planet. Earth has one moon and Jupiter has 4 large ones and lots of little ones. It does not shine itself: it reflects light from the sun. The shape of the moon appears to change in a regular pattern over 28 days.

Complete line graphs relating to length of day.

Working scientifically skills:

Questioning:

Recognise how secondary sources can be used to answer questions that cannot be answered through practical work.

Identify scientific evidence that has been used to support or refute ideas or arguments.

Observing:

Identify and classify:

Testing:

Recording: Use diagrams & labels in explanations; record using line graphs.

Talk about how scientific ideas have changed over time.

Communicating:

Use relevant scientific language and illustrations to discuss communicate and justify their scientific ideas.

Concluding:

Recognise which secondary sources will be most useful o research their ideas. Begin to separate opinion from fact.

How it fits in with the rest of the curriculum:

Y3: Visible and invisible forces: gravity is mentioned. Observe how magnets attract and repel.

Shadow formation because light's rays have been blocked. Will have done playground shadow measurement through the day, noticing the length and direction of shadows change.

In KS3: Seasons and earth's tilt; calculating gravity; day length at different times of year/ in different hemispheres.

Cross curricular links:

ICT: Researching safely using search engines; reliability; plagiarism.


History: Distinguishing between fact and opinion.



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