

Earth and Space- Year 5- Kapow unit-Forces and space: Earth and space

Previous learning

Key scientists you could look at...

Isaac Newton

Scientific skills

Working scientifically	Questioning and enquiry	Observing and measuring	Investigating	Recording	Grouping and classifying
Use practical scientific methods, processes and skills, covered in a variety of ways throughout the year	Begin to plan different types of scientific enquiries to answer questions, including recognising and controlling variables when necessary.	Begin to take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings where appropriate. Begin to identify patterns that might be found in the natural environment. Begin to make own decisions about what observations, measurements, and equipment to use. Begin to interpret data. Begin to make accurate and precise measurements.	Begin to test results to make predictions to set up further comparative and fair tests. Begin to recognise when and how to set up comparative and fair tests and explain which variables need to be controlled and why. Begin to suggest improvements to the method and give reasons.	Begin to record data and results of increasing complexity using scientific diagrams and tables, classification keys, tables and bar and line graphs. Begin to report and present findings from enquiries. Begin to decide how to record data from a choice of familiar approaches. Begin to choose how best to present data	Begin to use and develop keys and other information to record, identify, classify and describe living things and materials.

Key Vocabulary for Year 5

Earth	constellation
Sun	Planets
Moon	
Axis	
Rotation	
Day	
Night	
Phases of the moon	
Star	

Previous vocabulary

Useful links

- <https://www.hamilton-trust.org.uk/science/year-5-science/earth-and-space-space-presenters/>
- <https://www.stem.org.uk/resources/community/collecion/12347/year-5-earth-and-space>
- <https://www.bbc.co.uk/bitesize/articles/zsvtqfr>

Experiment and activity ideas

Create a model of the solar system	Create a model of the phases of the moon	Create a human representation of the movement of the Earth and moon	Use models and diagrams to show an understanding of day and night	Design and make planets, label and explain
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Knowledge- objectives

- Describe the movement of the Earth, and the 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

Resources in school

Planets and solar system poster

Key Knowledge

Earth **rotates** (spins) on its axis. It does a full **rotation** once in every 24 hours. At the same time that Earth is **rotating**, it is also orbiting (revolving) around the **Sun**. It takes a little more than 365 days to orbit the **Sun**. Daytime occurs when the side of Earth is facing towards the **Sun**. Night occurs when the side of Earth is facing away from the **Sun**.

It appears to us that the **Sun** moves across the sky during the day but the **Sun** does not move at all. It seems to us that the **Sun** moves because of the movements of Earth.



Geocentric model
Years ago people believed that **planets** moved around the Earth.

Nicolaus Copernicus

The work and ideas of many **astronomers** (such as Copernicus and Kepler) combined over many years before the idea of the **heliocentric model** was developed. Galileo's work on gravity allowed **astronomers** to understand how **planets** stayed in orbit.