

Scheme of Learning: Space

Topic Sequence:

1	2	3	4	5	6	7	8	9
Acids & Alkalis	Motion & Pressure	Photosynthesis & Respiration	Metals & Materials	Waves	Inheritance & Evolution	Earth & Atmosphere	Space	Ecosystems & Interdependence

Topic Overview:

In KS2 (primary) pupils are taught to observe changes across the 4 seasons, describe weather associated with the seasons and how day length varies. They have also described the movement of the Earth and other planets relative to the Sun in the solar system and described the movement of the Moon relative to the Earth. This topic in KS3 builds on these principles as well as embedding some of the forces topic that pupils learned in year 7. Space is only covered by Separate science in GCSE so this is potentially the only experience of space some pupils will gain in secondary school. Therefore the depth and detail that is covered is quite extensive even looking at the UK's role in developing satellite communication. We will look at theories about the solar system, how they have changed over time and the evidence that has caused us to adapt our models and developed our understanding.

Lesson Sequence:

This topic leans heavily on literacy and pupils' ability to identify key information within a text and apply it to a context. It starts with an extract by Stephen Hawking on why humans will eventually have to leave the Earth. This is built upon by looking at important aspects for life on Earth, seasonal changes, the phases of the moon and eclipses. Our journey then moves into space looking at natural and artificial satellites. We then look further into space and identify the planets in the solar system, their order and specific features. Astronomical distances are explained at this point to allow pupils to understand the vast distances between planets, stars and galaxies. We eventually look at a satellite that could have life and evaluate the evidence to support the theory that life could be present. Pupils will be required to apply all the knowledge they have learned across many topics during the year to be able to complete the evaluation. We finish the topic with an assessment where the pupils will be asked to explain why the Earth has different seasonal variations in the northern hemisphere, southern hemisphere and at the equator. We include how satellites have allowed us to see the difference in the seasons in the different hemispheres.

Sequence of Lessons:

1	The Earth
2	Natural Satellites
3	Artificial Satellites
4	The history of the solar system
5	The Universe and Enceladus
6	Assessment

Resources:

1	Lamp, Globe, Thermographic film Model of Earth and Sun Worksheet 1: Leaving Earth Worksheet 2: Day length and temperature analysis
2	Lamp and Tennis ball Worksheet 1: Required reading. Worksheet 2: keyword match up print slide 4.
3	Worksheet 1: British Satellites Worksheet 2: Types of orbits
4	Toilet roll or 3m long strips of paper, Colouring pens Orrery (VI) Worksheet 1: Planet information Worksheet 2: Scale model distances.
5	Evidence cards and evaluation table for evaluation.
6	Assessment sheet to print.

Supportive Reading:

Comprehension activity	TBC
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Assessment:

Knowledge:	20 question multiple choice quiz
Application of Knowledge:	Extended writing task Explain why the Earth has different seasonal variation in the northern hemisphere, southern hemisphere and at the equator. You should include how satellites have allowed us to see the difference in the seasons in the different hemispheres.