Mayflower FEDERATION

Science

Year 5

Autumn 1

Earth and Space

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Science
Earth and Space

National Curriculum

- 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.

National Curriculum – Working scientifically

- I can plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. (Fair testing independently)
- I can take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.
- I can record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. (Independently)
- I can talk about and present findings from enquiries, including conclusions, casual relationships and explanations of how reliable the information is.
- I can identify scientific evidence that has been used to support or refute ideas or arguments
- I can explain what they see using key scientific ideas, (with some support where needed.)
- I can use key scientific ideas and concepts to offer explanations for what I have found out, to make predictions and to hypothesise about why something might be the way it is (all with support where needed).
- I can use test results to make predictions to set up further comparative and fair tests

Key objectives to cover

- I understand the model of the sun and Earth that enables them to explain day and night.
- I know that the sun is a star at the centre of our solar system and that it has 8 planets: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune (Pluto was reclassified as a 'dwarf planet' in 2006).
- I understand that a moon is a celestial body that orbits a planet (Earth has 1 moon; Jupiter has 4 large moons and numerous smaller ones).
- I am able to find out about the way that ideas about the solar system have developed, understanding how the geocentric model of the solar system gave way to the heliocentric model by considering the work of scientists such as Ptolemy, Alhazen and Copernicus.
- I can compare the time of day at different places on the Earth through internet links and direct communication
- I can create simple models of the solar system; constructing simple shadow clocks and sundials,
- I can find out why some people think that structures such as Stonehenge might have been used as astronomical clocks.
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Areas to be covered in this module
Identifying and Classifying
Pattern Seeking
Research

Science – Earth and Space	
Key Question – How does the celestial body nearest to us change throughout the month? Is there a pattern between the size of a planet and the time it takes to travel around the Sun?	
Objectives	
Common misconceptions: Some children may think: • the Earth is flat • the Sun is a planet • the Sun rotates around the Earth • the Sun moves across the sky during the day • the Sun rises in the morning and sets in the evening • the Moon appears only at night • night is caused by the Moon getting in the way of the Sun or the Sun moving further away from the Earth.	
• research the solar system. • create a model of our solar system. • identify what causes day and night- create own way of explaining this. • investigate the link between length of shadow and time of day • to compare time in different countries (night and day) by researching. • explain the difference between rotational spin on axis and orbit. • discuss observations made over time. • understand the difference between heliocentric and geocentric model of the solar system	
Vocabulary	Planets, Sun, Mercury, Venus, Mars, Earth, Neptune, Uranus, Jupiter, Saturn, Moon, orbit, rotational, day, night, celestial, geocentric and heliocentric, axis, star, rotates
Working Scientifically Earth and Space	
Pattern Seeking	Investigate how shadows change throughout the day. Record how they change.
Identifying and Classifying	Observing the moon phases, identifying, and classifying them. Taking a photo every night to upload to a padlet page.
Research	research facts about our solar system.
Research	research facts about a planet of own choice.
Research	to compare time in different countries (night and day) by researching.
Research	understand the difference between heliocentric and geocentric model of the solar system-