

Science Learning Organiser – Year 5 Autumn 1 – “Does every child around the world value their education?”

Prior Learning (What we already know?):

- To know it is not safe to look at the sun
- To know the length of the day varies
- To know the 4 seasons
- To know the weather changes with the seasons
- To know light is needed to see things
- To know light reflects from surfaces
- To know how a shadow is formed
- To know the size of shadows can change

Key Questions:

Does having more moons result in more light hitting a planet? How could you test this?

Can you summarise how we have day and night?

Why do we have day/night/months/years/seasons?

Why does day length change?

How is the movement of our planet and other planets related to the position of the sun?

Key Facts:

Our Solar System comprises of the Sun in the centre and eight planets that orbit the Sun.

These planets in order from the Sun are Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus & Neptune.

The Earth rotates on its axis once every 24 hours giving us our day and night. The Earth orbits the Sun once every 365¼ days giving us our year. Seasons are a result of the Earth being slightly tilted on its axis.

Theories about the structure of our Solar System have changed over the centuries with initially a geocentric (Earth in the centre) model then being replaced with a heliocentric model as we know today. The scientist Copernicus was key to the development of the heliocentric model.

The moon orbits the Earth. We only ever see one side of the moon and it goes through phases, depending on the amount of light from the Sun that is reflected off the moon.

New Learning:

- To know how Earth, the moon, the other planets and the Sun move in relation to each other.
- To know that the sun is a star at the centre of our solar system and that it has eight planets.
- To name the planets in the solar system
- To be able to explain day and night
- To understand that the moon is a celestial body that orbits a planet



Key Resources:

<https://www.bbc.co.uk/bitesize/topics/zdrrd2p>

https://school-learningzone.co.uk/key_stage_one/ks1_science/earth_and_space/the_solar_system/the_solar_system.html

<https://www.bbc.co.uk/teach/class-clips-video/science-ks2-the-work-of-nicolaus-copernicus/z64skmn>

New Skills:

- **Pattern seeking** Does the size of a planet affect the length of its orbit? Does every planet take the same time to orbit [the Sun](#)? Is there a relationship between the orbit of a planet and its size?
- **Identify and classify** How could you organise all the objects in the solar system into groups?
- **Research** Understanding how the knowledge of the solar system has evolved and how it has changed. How have our ideas about the solar system changed over time? [Copernicus](#)
- **Comparative testing** How does the length of daylight hours change in each season? Does having more moons result in more light hitting a planet? How could you test this?
- **Observe over time** Can you observe and identify all the phases in the cycle of the Moon?

Vocabulary:

Earth, Sun, Moon, (Mercury, Jupiter, Saturn, Venus, Mars, Uranus, Neptune), spherical, solar system, rotates, star, orbit, planets

Can I do this?

- To know how Earth and the other planets move in relation to the Sun and each other.
- To know that the sun is a star at the centre of our solar system and that it has eight planets.
- To name the planets in the solar system
- To research how our knowledge of the Solar System has evolved
- To be able to explain day and night
- To understand that the moon is a celestial body that orbits a planet