

<b>Year:</b> 5	<b>Block:</b> 6	<b>KNOWLEDGE ORGANISER- Out of this World</b>	
<b>Curriculum Drivers:</b> Discovery, Inspiration		<b>Enrichment:</b> Trip to National Space Centre	<b>GARP/GASP:</b> Mae Jemison - first black woman in space
<b>Subject:</b> Science		<b>Cross-curricular links:</b> PSHE, History, Maths	

### Learning Journey

- Lesson 1**  
LO: To know what the solar system is
- Lesson 2**  
LO: To know how the rotation of the Earth around the sun creates day and night
- Lesson 3**  
LO: To investigate the apparent movement of the sun across the sky
- Lesson 4**  
LO: To know the different phases of the moon and its movement relative to the Earth
- Lesson 5 and 6**  
LO: To know about the planets in our solar systems
- Lesson 7**  
LO: To know the movement of the planets in our solar system

### Core Knowledge and Key Visuals

The solar system includes the Sun and all objects that orbit it, like planets, moons, asteroids, and comets. These objects are held in place by the Sun's gravity. The major planets are round because of their own gravity.

The Earth spins on its tilted axis, causing different areas to get sunlight at different times, resulting in day and night. This spinning takes about 24 hours.

There are eight main planets in our solar system: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, and Neptune. Each planet is unique in size, composition, and atmosphere, and they are either rocky or gas giants.

Planets orbit the Sun in oval-shaped paths at different distances and speeds. The closer a planet is to the Sun, the faster it orbits; for example, Mercury takes 88 days to orbit the Sun, while Neptune takes 165 years.



The Moon orbits the Earth and shows different phases, including new moon, crescent, first quarter, gibbous, and full moon, depending on its position relative to the Earth and Sun. This cycle takes about 29.5 days.



### Disciplinary Concepts

- Observations
- Presenting findings
- Scientific evidence

### Substantive Concepts

- Day and night
- Solar system
- Lunar Cycle

### Vocabulary

<b>Celestial body</b> - a naturally occurring object outside of the Earth's atmosphere.	<b>Gravity</b> - a force that pulls things towards the planet and keeps other celestial objects in orbit.	<b>Spherical</b> - the shape of a sphere (a 3D shape)
<b>Axis</b> - an imaginary line on which something rotates	<b>Orbit</b> - a curved path around a celestial body in space, Object falls as the same rate of the curvature of the object it is orbiting around.	<b>Lunar phases</b> - Phases of the moon across 29.5 days.
<b>Heliocentric</b> - describes a model with the sun in the centre	<b>Planet</b> - a celestial object with an almost spherical shape in orbit around a sun.	<b>Moons</b> - a large natural object that orbits, or travels around, Earth
<b>Asteroids</b> - a small, rocky body orbiting the sun.	<b>Comets</b> - a celestial object consisting of a nucleus of ice and dust and, when near the sun, a 'tail' of gas and dust particles pointing away from the sun.	<b>Star</b> - a large sphere of burning gas in space which planets can orbit around.