



Knowledge and Skills Mind Map (Science) Year 5 Spring Term

Knowledge - 
Skill - 

Earth and Space

1. Can I describe the Sun, Earth and other planets in the solar system?

- **Prior Learning:** N/A
- **Vocab:** solar system, planet, star, Sun, Earth
- Know the Sun is a star at the centre of our solar system and provides light and heat for the planets.
- Know that there are eight planets in our solar system orbiting the Sun, (Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune).
- Know that planets do not produce their own light but reflect light from the Sun.
- Know that models can be used to represent the solar system and help us understand the positions of the Sun and planets.
- **(note for teachers – suggested task:** children to place or label the planets in order from the Sun, then discuss patterns such as size and distance.)
- **Identifying scientific evidence that has been used to support or refute ideas or arguments**

2. Can I describe the movement of the Earth and other planets relative to the Sun?

- **Prior Learning (last lesson):** described the sun, Earth and other planets in solar system
- **Vocab:** orbit, rotate, Sun
- Know that the Earth and other planets move around the Sun in paths called orbits.
- Know that the planets orbit the Sun in the same direction but at different speeds and distances.
- Know that the Earth rotates on its axis while orbiting the Sun.
- Know that models can be used to help explain how planets move in the solar system.
- **(note for teachers – suggested task:** use a simple physical model (e.g. children acting as Sun and planets or using balls) to demonstrate orbiting and rotation, helping children visualise how planets move around the Sun. Children then explain and label diagram in books)
- **Recording data and results of increasing complexity using scientific diagrams and labels**

3. Can I describe the movement of the Moon and explain that the Sun, Earth and Moon are spherical bodies?

- **Prior Learning (last lesson):** described how Earth and planets orbit the Sun.
- **Vocab:** Moon, orbit, spherical, celestial bodies
- Know that the Moon orbits the Earth in a similar way to how Earth orbits the Sun.
- Know that the Sun, Earth and Moon are all approximately spherical in shape.
- Know that the Moon does not produce its own light but reflects light from the Sun.
- Know diagrams and models can represent movement of the Moon and shape of celestial bodies. (natural objects in space)
- **(note for teachers – suggested task:** use balls and a light source to model the Sun, Earth and Moon, asking children to draw and label diagrams showing how the Moon orbits the Earth and how light reflects from it.)
- **Recording data and results of increasing complexity using scientific diagrams and labels**

6. Can I use models and evidence to answer questions about movement in the solar system and explain my findings?

- **Prior Learning (last lesson):** explained how solar system theories changed over time
- **Vocab:** evidence, predict,
- Know that models can be used to represent and explain movement in the solar system, (e.g. showing the Earth's rotation or orbit).
- Know observations (e.g shadows and time of day) give evidence about how the Earth moves.
- Know that predictions can be made using our understanding of the Earth's rotation and orbit, (e.g. predicting where shadows will fall at different times of day).
- Know that presenting findings clearly helps explain scientific ideas and supports conclusions.
- **(note for teachers – suggested task:** children create simple shadow clock or sundial and observe changes over time, recording results and presenting explanations about how this links to Earth's rotation & the movement of the Sun across the sky.)
- **Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations**
- **Using test results to make predictions to set up further comparative and fair tests**



5. Can I use evidence to explain how ideas about the solar system have changed over time?

- **Prior Learning (last lesson):** explained day and night
- **Vocab:** geocentric, heliocentric, evidence
- Know that early scientists believed the Earth was at the centre of the solar system (geocentric model).
- Know that later scientists used evidence to show that the Sun is at the centre of the solar system (heliocentric model), (e.g. the work of Copernicus).
- Know that scientific ideas can change over time as new evidence becomes available.
- Know that evidence is used to support or challenge scientific theories.
- **(note for teachers – suggested task:** present simple models or diagrams of geocentric and heliocentric systems and ask children to compare them, then discuss which model is accepted today and why, using evidence and reasoning. Children record in books)
- **Identifying scientific evidence that has been used to support or refute ideas or arguments**

4. Can I use a model to explain day and night and the apparent movement of the Sun?

- **Prior Learning (last lesson):** described movement of the Moon and the Sun, Earth and Moon are spherical
- **Vocab:** rotation, day, night
- Know that the Earth rotates on its axis once every 24 hours.
- Know that day and night are caused by the rotation of the Earth.
- Know that the apparent movement of the Sun across the sky is due to the Earth rotating, not the Sun moving around the Earth.
- Know that models can be used to explain how the Earth's rotation causes day and night.
- **(note for teachers – suggested task:** use a lamp (Sun) and a globe (Earth) to model rotation, asking children to observe which parts are lit (day) and which are dark (night), then predict what will happen as the Earth continues to turn.)
- **Using test results to make predictions to set up further comparative and fair tests**