

Nova's Galactic Fact-File: Our Solar System

Learning objective: To describe the movement of the Earth and other planets relative to the Sun in the solar system, and to explain how this movement creates day, night, and the seasons.

Join Nova the owl for a night of stargazing! Use this fact-file to organise your research about our solar system. Ensure you use precise scientific vocabulary and justify your findings with evidence from your learning.

Word bank: Orbit · Rotate · Axis · Geocentric · Heliocentric · Spherical · Celestial · Gravity

1. The Sun's Position: Explain why the model of the solar system changed from geocentric (Earth-centred) to heliocentric (Sun-centred). (3 marks)

2. Planetary Motion: Compare and contrast how a planet rotates on its axis versus how it orbits the Sun. What is the result of these two different movements? (4 marks)

3. Day and Night: Justify the statement: 'The Sun does not move across the sky; the Earth is simply spinning.' (3 marks)

4. The Four Seasons: What might happen to the length of our seasons if the Earth's axis were not tilted? (3 marks)

5. Gravity's Role: Explain why all the planets in our solar system remain in a stable orbit around the Sun rather than drifting away into deep space. (3 marks)

6. Creative Extension: Imagine you are Nova the owl observing a distant, newly discovered planet. Describe its orbit and rotation, and explain how its day-night cycle would differ from Earth's. (5 marks)

Extension challenge: Design a diagram showing the tilt of the Earth as it orbits the Sun. Label the Northern and Southern Hemispheres and explain why one experiences summer while the other experiences winter.