

Nova's Cosmic Quest: A Space Exploration Quiz

Learning objective: To consolidate understanding of the Earth and space, including the solar system, planetary orbits, and the Earth's rotation.

Join Nova the barn owl on an astronomical adventure! Use your knowledge of the solar system to answer these 10 quick-fire questions. Aim for full marks to earn your 'Junior Astronomer' badge.

1. C) The Sun; 2. True; 3. Rotation; 4. B) Mercury; 5. False (It takes 365.25 days); 6. Axis; 7. Gravity; 8. B) Jupiter; 9. True; 10. True. Explanation: The Earth spins on its axis once every 24 hours to create day and night, while orbiting the Sun over the course of a year.

Word bank: Axis · Orbit · Gravity · Solar System · Sphere · Rotation · Sun · Geocentric · Heliocentric · Planet

1. 1. What is the name of the star at the centre of our Solar System? A) The Moon, B) Polaris, C) The Sun*, D) Alpha Centauri (1 mark)

2. 2. True or False: All planets in our solar system are spherical in shape. (1 mark)

3. 3. What movement of the Earth is responsible for the cycle of day and night? (1 word) (1 mark)

4. 4. Which planet is closest to the Sun? A) Venus, B) Mercury*, C) Mars, D) Neptune (1 mark)

5. 5. True or False: It takes the Earth exactly 360 days to complete one full orbit around the Sun. (1 mark)

6. 6. The Earth is tilted on an invisible line called an _____. (1 word) (1 mark)

7. 7. What invisible force keeps the planets in orbit around the Sun? (1 word) (1 mark)

8. 8. Which is the largest planet in our solar system? A) Saturn, B) Jupiter*, C) Neptune, D) Earth (1 mark)

9. 9. True or False: The Moon does not produce its own light; it reflects light from the Sun. (1 mark)

10. 10. True or False: The Sun is a star, not a planet. (1 mark)

Draw: Draw a diagram of the solar system showing the Sun and at least four planets in their correct relative order from the Sun. Label your diagram clearly.



Extension challenge: 1. Explain why we experience seasons on Earth, relating your answer to the Earth's tilt and orbit. 2. Compare and contrast the characteristics of rocky inner planets versus gas giants. 3. Justify why the Sun appears larger and brighter than other stars in the night sky. 4. What might happen if the Earth stopped rotating on its axis? 5. If you were designing a mission to Mars, what three scientific instruments would you include to detect signs of life? 6. Propose a theory for why ancient civilisations used the stars for navigation and agriculture.