

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Star Wars: The Empire Strikes Back 10th Grade Orbital Quiz

How does the sun stay in the same spot while we move? Identify the mechanics of barycenters, obliquity, and orbital velocity in our solar system.

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**1. Which term describes the slight 'wobble' in Earth's axial direction that takes approximately 26,000 years to complete a full cycle?**

- A. Nutational shifting
- B. Precession
- C. Orbital decay
- D. Retrograde motion

**2. The Earth is physically closer to the Sun during the Northern Hemisphere's winter than it is during the summer.**

- A. True
- B. False

**3. The \_\_\_\_\_ is the common center of mass around which two or more bodies revolve, such as the Earth and the Moon.**

- A. Apogee
- B. Perigee
- C. Barycenter
- D. Falciform

**4. What is the primary reason the Moon lacks an atmosphere compared to Earth's robust gaseous envelope?**

- A. Low surface temperature
- B. Lack of volcanic activity
- C. Insufficient gravitational pull
- D. Presence of maria basins

**5. Earth's orbit is not a perfect circle but an \_\_\_\_\_ shape, a discovery attributed to Kepler's First Law.**

- A. Oblate
- B. Elliptical
- C. Parabolic
- D. Hyperbolic

**6. The side of the Moon that faces away from Earth is always dark.**

- A. True
- B. False

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**7. Which phenomenon refers to the periodic variation in the 'tilt' of Earth's axis between approximately 22.1 and 24.5 degrees?**

- A. Obliquity
- B. Eccentricity
- C. Alignment
- D. Insolation

**8. When the Moon is at its furthest point from Earth in its monthly orbit, it is said to be at \_\_\_\_.**

- A. Perihelion
- B. Perigee
- C. Aphelion
- D. Apogee

**9. The Sun's gravity has a greater influence on Earth's tides than the Moon's gravity because of the Sun's massive size.**

- A. True
- B. False

**10. How many degrees does the Earth rotate on its axis in exactly one hour?**

- A. 10 degrees
- B. 15 degrees
- C. 23.5 degrees
- D. 360 degrees