

Name \_\_\_\_\_

## Moons and Planets: Exploring the Universe's Cosmic Partnerships

### Short Answer Key

1. Mercury and Venus do not have any moons. Mercury is the closest planet to the Sun and has no natural satellites. Venus, Earth's "sister" planet, also lacks moons.
2. Moons can influence tides, seasons, and the stability of a planet's axial tilt. For example, Earth's Moon plays a crucial role in creating tides, which impact ocean ecosystems. Mars' moons, Phobos and Deimos, are small and irregularly shaped, with less significant gravitational effects.
3. Gas giant planets like Jupiter and Saturn have larger gravitational fields due to their immense size. This gravitational pull allows them to capture and retain numerous moons from the surrounding space.
4. Astronomers use methods like the transit method and the radial velocity method to detect exoplanets. Detecting exomoons is more challenging because they are smaller and less luminous than planets.
5. Yes, planets can have more than one moon. These moons can interact with each other through gravitational forces, leading to complex orbital dynamics and potential collisions.

