

Name _____

How Many Moons Are There in Our Solar System?

Open-Ended Response Answer Key

1. Comparison of the number of moons for each of the four inner planets:

- Mercury and Venus have no moons.
- Earth has one moon.
- Mars has two moons, Phobos and Deimos.

This difference in moon count is due to various factors, including the planet's size, gravitational influence, and the possibility of moon capture or loss.

2. Studying moons provides insights into the formation and evolution of planetary systems. Moons can have diverse characteristics, such as atmospheres, subsurface oceans, and unique surface features, which help scientists understand the history and dynamics of our solar system.

3. Discovering a new moon around a distant planet would involve using advanced telescopes and observatories. The process would include careful observation of the planet's surroundings, looking for irregularities or small objects in orbit, and confirming their status as moons through repeated observations.

4. Unique features of a moon in our solar system: One example is Saturn's moon Titan. It has a thick atmosphere, making it the only moon with a significant atmosphere. Titan's surface is covered in lakes and rivers of liquid methane and ethane, and it has been explored by the Cassini-Huygens mission.

