

Name \_\_\_\_\_

## Moon's Gravity: A Tug-of-War With Earth

### Open-Ended Response Answer Key

1. Gravity is the force of attraction between two objects with mass. It is universal and keeps planets in orbit around the Sun, causes the Moon to orbit Earth, and holds objects on the Earth's surface. Gravity's strength depends on an object's mass and the distance between objects.
2. In a journey to Mars, the weaker gravity would affect an astronaut's muscle and bone health due to reduced load-bearing. Tasks like lifting heavy equipment would be easier, but prolonged exposure might lead to muscle atrophy and bone loss. Daily life would require adjustments, and exercise would be essential for physical well-being.
3. Moonwalking on the lunar surface is a unique experience. Astronauts describe it as a sensation of "floating" or taking giant leaps. The challenges include adjusting to the unfamiliar movement and ensuring stability. Scientifically, it allows astronauts to explore more terrain and collect valuable data.
4. One mission on the Moon is the Apollo 11 mission, which collected rock samples. This mission aimed to study the Moon's composition and geological history. The collected rocks provided insights into the Moon's formation and its relation to Earth's history.

