

Name _____

Unveiling the Mysteries of Our Moon's Surface

Open-Ended Response Answer Key

1. The Moon's surface composition, including the presence of rocks like basalt and anorthosite, as well as the abundance of impact craters, offers clues about the early solar system's conditions. These features suggest that the Moon experienced volcanic activity and intense meteorite bombardment, which can help scientists reconstruct the solar system's history.
2. The tiny glass beads in lunar regolith, known as agglutinates, are essential for dating lunar samples and understanding the Moon's history. However, they can pose challenges for future lunar missions by potentially damaging equipment and causing health concerns for astronauts.
3. The Moon's lack of atmosphere means there is no weathering or erosion to gradually erase impact craters. As a result, craters on the Moon remain well-preserved over time. On Earth, weathering processes like wind and water erosion gradually erase craters.
4. Knowledge of the Moon's surface composition is crucial for planning lunar missions, designing spacecraft and spacesuits, and identifying potential resource deposits for future lunar bases. Understanding the terrain and potential hazards helps ensure the safety and success of lunar exploration endeavors.

