Name _____

Gravity Unveiled: The Connection Between Earth's Composition and Gravitational Pull

Open-Ended Response Answer Key

1. As you descend from a mountain's peak to its base, your weight increases. This is because you are getting closer to the Earth's center, where the gravitational pull is stronger. Your weight decreases as you ascend because you are moving away from the Earth's center.
2. Variations in Earth's composition can lead to differences in gravitational strength in different regions. For example, areas with denser rock may have a stronger gravitational pull, affecting the weight of objects. This can impact construction projects, transportation, and even geological studies.
3. Gravitational pull from the Moon and the Sun causes the tides in Earth's oceans. The Moon's gravity pulls water toward it, creating a high tide on the side of the Earth facing the Moon and a high tide on the opposite side due to the centrifugal force. The Sun's gravity also influences tides, leading to spring tides and neap tides.
4. If the Earth's composition had no variations and all regions had the same density of rock, gravitational strength would be consistent across the planet. Objects would have the same weight everywhere, and there would be no variations in gravitational pull. This could simplify calculations but would not reflect the real-world diversity of Earth's composition and geological features.