

Name _____

Weather Wonders: Exploring the Causes of Different Types of Weather

Open-Ended Response Answer Key

1. The windward side of the mountains is likely to experience more precipitation because as moist air rises over the mountains, it cools and condenses, leading to cloud formation and rain or snow. The leeward side, or the rain shadow side, tends to be drier because the air has already released its moisture on the windward side.
2. Global warming can disrupt weather patterns by increasing temperatures and altering ocean currents. This can lead to more frequent and severe weather events, such as hurricanes, heatwaves, and droughts, with consequences for ecosystems and communities.
3. Understanding the causes of different types of weather helps us prepare for and respond to weather events, such as storms or extreme heat. It also informs decisions about agriculture, transportation, and urban planning, making our lives safer and more resilient.
4. Answers may vary, but a sample forecast could include predictions like "Sunny with a high of 80°F and light winds from the southwest, with no precipitation expected due to a high-pressure system in the region." The reasoning would be based on the understanding of weather causes, including air pressure and wind patterns.

