Science Face-Off

Grade 6 Name: _____

Read the science passage comparing two topics. Then use evidence from the text to answer the questions.

Science facts: use exact numbers, names, and examples from the passage as your evidence.

Volcanoes vs Earthquakes: Earth's Shifting Power

Imagine feeling the ground rumble beneath your feet. Was it a volcano erupting or an earthquake shaking the land? **Both** volcanoes and earthquakes are powerful geological events that reshape our planet, often occurring along the boundaries of tectonic plates. **However**, their mechanisms and immediate effects are quite distinct.

Volcanoes are vents in the Earth's crust through which molten rock, ash, and gases escape. They act as Earth's pressure release valves. The 1980 eruption of Mount St. Helens dramatically altered the landscape. Scientists monitor volcanoes using seismometers, GPS, and gas sensors, often predicting eruptions with increasing accuracy. A common misconception is that all volcanoes are cone-shaped; **in contrast**, some are flat shield volcanoes, like those in Hawaii.

Earthquakes, **while** also caused by plate tectonics, result from the sudden release of energy in the Earth's crust. This energy builds up as plates grind past each other until the stress becomes too great. The 2011 Tohoku earthquake in Japan, for example, caused a devastating tsunami and slightly shifted the Earth's axis. Predicting earthquakes remains a significant challenge for scientists, an unresolved scientific question that continues to drive research.

Similarly, both phenomena can cause widespread destruction, from collapsing buildings to tsunamis. They also have long-term impacts, such as creating fertile soil around

volcanoes or revealing new mineral deposits after earthquakes. **Unlike** the slow build-up of magma often preceding a volcanic eruption, earthquakes can strike with little to no warning, making preparedness crucial.

Current research explores how these events might influence each other. Some studies suggest that large earthquakes can sometimes trigger distant volcanic activity, and vice-versa, though the exact relationship is still being investigated. Understanding these forces is vital for developing safer infrastructure and early warning systems, protecting communities worldwide.

COMPREHENSION QUESTIONS

(1) Which geological event releases molten rock, ash, and gases?

(A) Volcanoes (B) Earthquakes (C) Both (D) Neither

(2) Which geological event is caused by the sudden release of energy from grinding tectonic plates?

(A) Volcanoes (B) Earthquakes (C) Both (D) Neither

(3) "Both volcanoes and earthquakes occur along the boundaries of tectonic plates." Is this a SIMILARITY or DIFFERENCE?

(A) Similarity (B) Difference

(4) "Volcanoes can be predicted with increasing accuracy, while predicting earthquakes remains a significant challenge." Is this a SIMILARITY or DIFFERENCE?

(A) Similarity (B) Difference

(5) Use a detail from the passage to explain ONE way volcanoes and earthquakes are similar.

(6) Which concept do you think is more important for life on Earth, volcanoes or earthquakes? Use TWO facts from the passage to support your answer.