Name: _____

ERUPTION POLLUTION

In "Buried by Lava" (p. 8), you learned that Kilauea has been gushing lava and spewing ash from new fissures in recent months. In the following passage, you'll learn how gases emitted from the volcano can have far-reaching effects. Read the passage, and then answer the questions that follow.

VOLCANIC SMOG

The Marshall Islands are located more than 3,700 kilometers (2,300 miles) west of Hawaii—about the distance from Los Angeles to Detroit. But when Kilauea began spewing lava last May in its most recent eruption, residents of the Marshall Islands were warned of possible risks to their health from the volcano. *Volcanic smog* (vog) caused the islands' skies to become hazy. People with breathing problems were told to stay inside because of the resulting poor air quality.

When volcanoes erupt, they send fine particles of ash and gases, such as sulfur dioxide (SO_2) and carbon dioxide (CO_2), into the atmosphere. These gases react with oxygen (O) and other molecules in the air (in the presence of sunlight) to form vog, a gray haze similar to smog.

For people who live near volcanoes, vog can cause health problems, including burning eyes, headaches, and sore throats. Vog contains extremely small particles that can end up deep in the lungs. That can cause breathing difficulties, especially for people who already have respiratory problems such as asthma.

People who live far from the volcano can also be affected because clouds of vog can rise high into the atmosphere and be carried long distances by winds. This can affect the environment as well. When molecules in vog react with water in the air, they can create *acid rain*, which damages plants. Vog also scatters sunlight, reducing the amount that reaches Earth's surface. That can affect global temperatures.

QUESTIONS

1. Describe how vog forms in your own words.

2. What piece of evidence did the author include to support the statement that vog can have far-reaching effects?

3. What characteristic of vog makes it particularly dangerous for people with breathing problems?

4. In "Buried by Lava," you learned about some of the actions people in Hawaii have taken to stay safe while Kilauea is erupting. Describe at least two actions that would help protect them from the effects of vog.

5. What can you *infer*, or conclude, about how large amounts of vog may affect global temperatures? Use evidence from the passage to support your answer.

CHECK FOR UNDERSTANDING

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DIRECTIONS: Match each item in the left column with its definition in the right column.

_____ **1.** fissure	**a.** a circular depression formed after a volcanic eruption
_____ **2.** evacuate	**b.** to move from a dangerous area to somewhere safer
_____ **3.** magma	**c.** molten rock that has reached Earth's surface
_____ **4.** lava	**d.** a toxic gas that is emitted during volcanic eruptions
_____ **5.** shield volcano	**e.** an opening in Earth's surface that emits volcanic material
_____ **6.** crater	**f.** the top of a volcano or mountain
_____ **7.** sulfur dioxide	**g.** an area where weakened rock on a volcano is splitting apart, forming cracks
_____ **8.** rift zone	**h.** molten rock that is underground
_____ **9.** volcanic vent	**i.** a crack in the ground
_____ **10.** summit	**j.** a type of volcano with a gentle slope that does not usually violently erupt