**Chaper 1.4: Volcanic Landforms and Geothermal Activity**

Name:

Date:

**Lesson 1.4: True or False**

Write true if the statement is true or false if the statement is false.

\_\_\_\_\_ 1. Hot springs are surface features associated with volcanic activity.

\_\_\_\_\_ 2. The more viscous lava is, the more quickly it flows over the surface.

\_\_\_\_\_ 3. A magma dome typically forms during an explosive volcanic eruption.

\_\_\_\_\_ 4. Lava plateaus consist of sheets of lava that solidified below the surface.

\_\_\_\_\_ 5. Lava creates new land as it flows into the ocean.

\_\_\_\_\_ 6. Geysers are found in many places on Earth’s surface.

\_\_\_\_\_ 7. Underground water heated by magma may be hot enough to boil.

\_\_\_\_\_ 8. Extreme pressure causes a geyser to erupt onto the surface.

\_\_\_\_\_ 9. All geysers erupt as predictably as Old Faithful in Yellowstone National Park.

\_\_\_\_\_ 10. Flowing lava created the Hawaiian Islands.

**Lesson 1.4: Critical Reading**

Read this passage based on the text and answer the questions that follow.

**Landforms from Lava**

The most obvious landforms created by lava are volcanoes. These may be relatively small cinder cones or huge

composite or shield volcano mountains. Sometimes lava erupts through a long crack, or fissure, instead through the vent of a volcano. The entire ocean floor is the result of fissure eruptions.

When lava is viscous, it flows slowly. Viscous lava typically causes explosive volcanic eruptions that form shield

volcanoes. However, if there is not enough magma or enough pressure to cause an explosive eruption, the magma may form a lava dome instead. A lava dome is a large, rounded landform that forms when viscous lava cools and hardens before it can travel far from a vent. Lava domes often form in the middle of craters at the top of composite volcanoes. For example, there is a lava dome in the crater of Mount St. Helens.

When lava is not viscous, it flows quickly. It can flow over an extensive area before it cools and hardens. This type of lava flow may form a lava plateau. This is a wide, flat surface of igneous rock that forms when thin lava solidifies. The Columbia Plateau in the Pacific Northwest is a lava plateau. It covers more than 161,000 square kilometers (63,000 square miles) in Washington State, Oregon, and Idaho.

Lava may create new land by forming or expanding islands in the ocean. This occurs when lava solidifies on the

coast or emerges from beneath the water. The Hawaiian Islands are formed from shield volcano eruptions and have grown over the last 5 million years.

**Questions about the Passage**

1. List landforms created by lava.
2. How and why does a lava dome form?
3. What type of lava forms a lava plateau? Why?
4. Explain how the Hawaiian islands formed.

**Lesson 1.4: Multiple Choice**

Circle the letter of the correct choice.

1. Surface features related to volcanic activity include

1. geysers.
2. lava domes.
3. cinder cones.
4. all of the above

2. A lava dome may form if lava is

1. thin.
2. mafic.
3. viscous.
4. under great pressure.

3. Where is a lava dome most likely to form?

1. on the side of a shield volcano
2. in the middle of a crater
3. on the ocean floor
4. on a lava plateau

4. A lava plateau

1. forms from thin lava.
2. consists of sedimentary rock.
3. forms from the weathering of a volcanic mountain.
4. results when hot lava cools beneath ocean water.

5. An example of a landform created from a magma intrusion is

1. the Big Island of Hawaii.
2. Shiprock in New Mexico.
3. Mount St. Helens in Washington State.
4. none of the above

6. Conditions necessary for a geyser to occur include

1. water superheated by magma beneath Earth’s surface.
2. buildup of pressure on underground water.
3. trapping of water in a narrow passageway underground.
4. all of the above

7. About how many geysers are there worldwide?

1. 10
2. 100
3. 1000
4. 10,000

**Lesson 1.4: Matching**

Match each definition with the correct term.

|  |  |
| --- | --- |
| **Definitions**  \_\_\_\_\_ 1. large, flat surface of igneous rock that forms when lava flows over a wide area  \_\_\_\_\_ 2. location of rock formed solely by fissure eruptions  \_\_\_\_\_ 3. hot water that bubbles onto the surface  \_\_\_\_\_ 4. large, rounded landform created by lava  \_\_\_\_\_ 5. hot water that erupts onto the surface | **Terms**  a. lava dome  b. hot spring  c. lava plateau  d. geyser  e. seafloor |

**Lesson 1.4: Fill in the Blank**

Fill in the blank with the appropriate term.

* 1. Volcanic landforms vary with the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the magma that created them.
  2. Viscous lava flows \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ slowly than non-viscous lava.
  3. The Columbia Plateau in the Pacific Northwest is a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
  4. The Hawaiian Islands are formed from the eruptions of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ volcanoes.
  5. Water in a hot spring or geyser is heated by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
  6. About half of all the geysers in the world are found in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
  7. The most obvious landforms created by lava are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Lesson 1.4: Critical Writing**

Thoroughly respond to the prompt below. Use appropriate academic vocabulary and clear and complete sentences.

***Prompt:*** Compare and contrast hot springs and geysers. Why do you think there are fewer geysers than hot

springs in the world?