**Chaper 1.3: Types of Volcanoes**

Name:

Date:

**Lesson 1.3: True or False**

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

\_\_\_\_\_ 1. A volcano is a vent through which material escapes from a magma chamber.

\_\_\_\_\_ 2. Some volcanoes appear to be little more than cracks in the ground.

\_\_\_\_\_ 3. The shape of a volcano depends mainly on how much material erupts.

\_\_\_\_\_ 4. Composite volcanoes generally have effusive eruptions.

\_\_\_\_\_ 5. The layers of a shield volcano are usually very similar in composition.

\_\_\_\_\_ 6. A cinder cone is typically much larger than other types of volcanoes.

\_\_\_\_\_ 7. The idea of supervolcanoes dates back at least 1000 years.

\_\_\_\_\_ 8. Yellowstone sits atop a hotspot that has had three catastrophic eruptions.

\_\_\_\_\_ 9. Long Valley in California is the second largest supervolcano in North America.

\_\_\_\_\_ 10. Scientists have determined precisely when the next supervolcanic eruption will occur.

**Lesson 1.3: Critical Reading**

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

**Composite and Shield Volcanoes**

Composite volcanoes are created by felsic magma, which is viscous. The viscous lava cannot travel far down the sides of the volcano before it solidifies, forming the steeply sloping sides that are characteristic of composite volcanoes. Viscosity also causes some eruptions to explode as ash and small rocks. As a result, composite volcanoes consist of alternating layers of ash and lava that has solidified to form rock. The layers form the classic cone shape of composite volcanoes.

Shield volcanoes get their name from their shape. They are literally shaped like a shield. The sides of a shield volcano are not steep, but the volcano may cover a very large area. The lava that creates a shield volcano is mafic and not viscous, so it flows easily. The lava can flow over a wide area before it solidifies. This is what creates the broad shield shape. The low viscosity of the lava also means that shield volcano eruptions are effusive rather than explosive. As a result, the layers of shield volcanoes are usually very similar in composition.

**Questions about the Passage**

1. Describe the shape of composite volcanoes. Why do composite volcanoes have this shape?
2. Describe the shape of shield volcanoes. Why do shield volcanoes have this shape?
3. Explain why composite volcanoes, but not shield volcanoes, consist of alternating layers of ash and rock.

**Lesson 1.3: Multiple Choice**

Circle the letter of the correct choice.

1. Composite volcanoes have steep sides because the lava

1. is not viscous.
2. solidifies quickly.
3. has a mafic composition.
4. two of the above

2. You would expect to find alternating layers of rock and ash in a cross section of a(n)

1. cinder cone.
2. shield volcano.
3. effusive volcano.
4. composite volcano.

3. Shield volcanoes are common at

1. convergent plate boundaries.
2. divergent plate boundaries.
3. intraplate hotspots.
4. two of the above

4. The largest shield volcano on Earth is

1. Mount St. Helens.
2. Mount Fuji.
3. Mauna Loa.
4. Paricutín.

5. Cinder cone volcanoes

1. are shaped like shield volcanoes.
2. typically become supervolcanoes.
3. grow slowly from many eruptions.
4. are often found near larger volcanoes.

6. Supervolcanoes

1. have frequent, explosive eruptions.
2. are classified as cinder cone volcanoes.
3. may have contributed to mass extinctions.
4. include Mount Pinatubo in the Philippines.

7. To be classified as a supervolcano, the volume of material in an eruption must be more than

1. 1000 km3.
2. 250 km3.
3. 120 km3.
4. 80 km3.

**Lesson 1.3: Matching**

Match each definition with the correct term.

|  |  |
| --- | --- |
| **Definitions**  \_\_\_\_\_ 1. most common type of volcano  \_\_\_\_\_ 2. huge hole in a volcano into which the surface collapses  \_\_\_\_\_ 3. broad volcano with gently sloping sides  \_\_\_\_\_ 4. example of a composite volcano  \_\_\_\_\_ 5. most dangerous type of volcano  \_\_\_\_\_ 6. example of a supervolcano  \_\_\_\_\_ 7. large volcano with steeply sloping side | **Terms**  a. shield volcano  b. supervolcano  c. composite volcano  d. caldera  e. cinder cone  f. Mount St. Helens  g. Yellowstone |

**Lesson 1.3: Fill in the Blank**

Fill in the blank with the appropriate term.

1. Composite volcanoes are made of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ rock.
2. The type of eruptions that produce shield volcanoes are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ eruptions.
3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_are small volcanoes composed of fragments of rocks such as pumice.
4. Low-viscosity magma produces \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ volcanoes.
5. High-viscosity magma produces \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ volcanoes.
6. Cinder cones usually have a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ at the summit.
7. Scientists think that a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ forms when a very large magma chamber erupts all at once.

**Lesson 1.3: Critical Writing**

Thoroughly answer the question below. Use appropriate academic vocabulary and clear and complete sentences.

***Prompt:*** Explain the possible causes and consequences of supervolcano eruptions.