Name _____ Class _____ Date _____

Skills Worksheet

Directed Reading

Section: Volcanic Eruptions

_____ 1. Lava provides an opportunity for scientists to study
   a. the nature of Earth's inner core.
   b. the nature of Earth's tectonic plates.
   c. temperatures within Earth.
   d. the nature of Earth's crust and mantle.

_____ 2. By analyzing the composition of volcanic rocks, geologists have concluded that there
   a. is only one general type of magma.
   b. are two general types of magma.
   c. are three general types of magma.
   d. are two minerals in magma.

_____ 3. Magma or igneous rock that is rich in feldspars and silica and is generally light in color is described as
   a. felsic.
   b. oceanic.
   c. mantle.
   d. mafic.

_____ 4. Magma or igneous rock that is rich in magnesium and iron and is generally dark in color is described as
   a. felsic.
   b. oceanic.
   c. mantle.
   d. mafic.

_____ 5. Mafic rock commonly makes up
   a. oceanic crust.
   b. continental crust.
   c. Earth's inner core.
   d. tectonic plates.

_____ 6. Felsic rock is common in
   a. oceanic crust.
   b. continental crust.
   c. Earth's inner core.
   d. tectonic plates.

TYPES OF ERUPTIONS

_____ 7. The force of a volcanic eruption is most affected by the
a. temperature of the magma.
b. distance from the top of the volcano to its base.
c. viscosity of the magma.
d. geologic age of the volcano.

_____ 8. Low-viscosity mafic magma results in runny lava and typically causes
a. quiet eruptions.
b. explosive eruptions.
c. continuous eruptions.
d. most volcanic eruptions.

_____ 9. High-viscosity felsic magma results in sticky lava and typically causes
a. quiet eruptions.
b. explosive eruptions.
c. continuous eruptions.
d. most volcanic eruptions.

_____ 10. Explosive eruptions are most likely to be caused by magma with
a. small amounts of dissolved gases.
b. large amounts of trapped, dissolved gases.
c. any amounts of dissolved gases.
d. small amounts of dissolved rock.

_____ 11. Oceanic volcanoes commonly form from
a. mafic magma.
b. felsic magma.
c. mafic or felsic magma.
d. solid magma.

_____ 12. Eruptions from oceanic volcanoes are usually
a. quiet eruptions.
b. explosive eruptions.
c. continuous eruptions.
d. small eruptions.

_____ 13. When mafic lava cools rapidly, it
a. becomes less viscous.
b. becomes explosive.
c. forms a crust.
d. shoots pyroclastic material.

14. How does pahoehoe form? Why is the word *pahoehoe* used to describe this kind of volcanic rock?

_____

_____

_____

In the space provided, write the letter of the description that best matches the term or phrase.

_____ 15. pahoehoe

_____ 16. aa lava

_____ 17. blocky lava

a. forms jagged, sharp chunks as it cools

b. forms a smooth, ropy texture as it cools

c. breaks into large chunks at the surface, while hot lava continues to flow underneath

18. What is pyroclastic material?

_____

_____

_____

_____

Use the terms from the list below to complete the sentences that follow. Each term may be used only once.

volcanic bombs	lapilli	volcanic ash
volcanic blocks	volcanic	dust

19. Pyroclastic particles that are less than 2 mm in diameter are called _____.

20. Pyroclastic particles that are less than 0.25 mm in diameter are called _____.

21. Large pyroclastic particles that are less than 64 mm in diameter are called _____, a name taken from a Latin word meaning "little stones."

22. Large clots of red-hot lava that are thrown out of an erupting volcano and then spun through the air as they cool, developing a round or spindle shape, are called _____.

23. The largest pyroclastic particles, which form from solid rock blasted from the vent of a volcano, are called _____.

TYPES OF VOLCANOES

In the space provided, write the letter of the description that best matches the term or phrase.

_____ 24. volcanic cone

_____ 25. crater

_____ 26. shield volcano

_____ 27. cinder cone

_____ 28. composite volcano

a. volcanic cone that is broad at the base and has gently sloping sides

b. structure that is formed from lava and pyroclastic material ejected during a volcanic eruption

c. volcano that is rarely more than a few hundred meters high and has steep slope angles that can be close to 40°

d. volcano that is made from alternating layers of hardened lava flows and pyroclastic material

e. funnel-shaped pit at the top of a volcanic vent

CALDERAS

29. What is a caldera?

_____

_____

30. What are the three steps that most often occur in the formation of a caldera?

_____

_____

_____

31. How did the caldera on the volcanic island of Krakatau form?

_____

_____

_____

32. How was Crater Lake in Oregon formed?

PREDICTING VOLCANIC ERUPTIONS

_____ 33. One of the most important warning signs of a volcanic eruption is
   a. a change in earthquake activity around the volcano.
   b. a change in air pressure around the volcano.
   c. a change in animal behavior around the volcano.
   d. increased steepness of the volcanic cone.

34. What are three causes of small earthquakes that could signal a volcanic eruption?

35. What may cause the surface of a volcano to bulge outward before an eruption?

36. What three comparisons between a volcano's past behavior and its current behavior do scientists make to help them predict an eruption?

37. What are two problems that scientists face when using a volcano's past behavior to predict a future eruption?