

CH 4 - VOLCANOES (pp. 96 - 133)

- 4.1
1. Most active volcanoes are located near \_\_\_\_\_.
  2. The two most common gases in magma are \_\_\_\_\_.
  3. Resistance to flow is called \_\_\_\_\_. \_\_\_\_\_ magma has the lowest viscosity. \_\_\_\_\_ and \_\_\_\_\_ magmas have high viscosities, and also more dissolved \_\_\_\_\_. Because of their high viscosities and gas content, these magmas are especially \_\_\_\_\_.
  - 4.

| <b>VOLCANO TYPES &amp; FEATURES</b> |              |                  |                    |                  |                 |
|-------------------------------------|--------------|------------------|--------------------|------------------|-----------------|
| <b>TYPE</b>                         | <b>SHAPE</b> | <b>VISCOSITY</b> | <b>COMPOSITION</b> | <b>ERUPTIONS</b> | <b>EXAMPLES</b> |
| <b>Shield Volcano</b>               |              |                  |                    |                  |                 |
| <b>Composite or Stratovolcano</b>   |              |                  |                    |                  |                 |
| <b>Volcanic Dome</b>                |              |                  |                    |                  |                 |
| <b>Cinder Cone</b>                  |              |                  |                    |                  |                 |

5. The largest, tallest mountains on Earth (measured from the sea floor) are \_\_\_\_\_ volcanoes such as \_\_\_\_\_ in Hawaii.
6. Solid rock and dust that is explosively ejected from a volcano is called \_\_\_\_\_.
7. Magma can move quickly underground through \_\_\_\_\_.
8. Mount St. Helens and Mount Rainier are \_\_\_\_\_ or stratovolcanoes, composed of layers of \_\_\_\_\_ and \_\_\_\_\_.
9. The Southwest U.S. has many \_\_\_\_\_ volcanoes, such as SP Crater.
10. Depressions at the tops of volcanoes are called \_\_\_\_\_. Gigantic depressions formed when the upper cone collapses are called \_\_\_\_\_, and can be more than \_\_\_\_\_ km in diameter.
11. Lava erupts through volcanic \_\_\_\_\_, which when elongated are called \_\_\_\_\_. These can produce huge lava flow plateaus called \_\_\_\_\_, such as the \_\_\_\_\_ Plateau in Washington and Oregon.
12. When groundwater contacts hot rock, it can discharge at the surface as a \_\_\_\_\_ spring. A periodic release of boiling steam is called a \_\_\_\_\_.
13. \_\_\_\_\_ eruptions such as Tambora, Krakatoa and Lake Taupo have led the media to coin the term \_\_\_\_\_. The most recent ones on North America were at \_\_\_\_\_ National Park and \_\_\_\_\_ California. When Mount Mazama erupted around 7700 years ago, it produced the now famous \_\_\_\_\_ Lake in Oregon.
14. Though Yellowstone and Long Valley have domed upward recently, both are considered \_\_\_\_\_ calderas, though eruptions there are extremely \_\_\_\_\_.

15. The Juan De Fuca Plate is \_\_\_\_\_ beneath North America, producing the \_\_\_\_\_ Mountain chain of volcanoes that stretch from northern \_\_\_\_\_ in the south to northern \_\_\_\_\_ in the north.

16. At Hawaii, magma wells up from great depths at what is called a \_\_\_\_\_.  
A similar one occurs beneath North America at \_\_\_\_\_ National Park.

4.2 17. The highest risk in the contiguous United States is in the mountains of the \_\_\_\_\_, at \_\_\_\_\_ and isolated areas of the Southwest. In contrast, the Eastern U.S. is considered \_\_\_\_\_.

4.3 18. Worldwide, \_\_\_\_\_ volcanoes erupt each year, with \_\_\_\_\_ occurring in the U.S. In the past 100 years \_\_\_\_\_ people have been killed worldwide.

19. Explosive volcanism is called \_\_\_\_\_ activity.

20. When an explosion blasts horizontally across the land, it is called a \_\_\_\_\_.

21. A fast-moving avalanche of hot gas, ash and rock is called a \_\_\_\_\_.

22. Ash eruptions can destroy \_\_\_\_\_, contaminate \_\_\_\_\_, damage or destroy \_\_\_\_\_, irritate the \_\_\_\_\_ system and \_\_\_\_\_, and cause \_\_\_\_\_ crashes.

23. \_\_\_\_\_ have killed more people than any other volcanic hazard in the last 2,000 years.

24. Poisonous gases emitted by volcanoes include water vapor, \_\_\_\_\_, carbon monoxide, \_\_\_\_\_ and \_\_\_\_\_.

25. Debris flows and mudflows, also called \_\_\_\_\_, form when \_\_\_\_\_ and \_\_\_\_\_ become saturated with \_\_\_\_\_ and move downslope.

26. In the state of Washington, \_\_\_\_\_ of people live on mudflows from Mt. \_\_\_\_\_. South of the \_\_\_\_\_ Sound, such a flow would appear as a 30-foot wall of debris moving \_\_\_\_\_ mph.

27. The United States Geological Survey has developed an automated \_\_\_\_\_-powered lahar-detection system that can sense ground \_\_\_\_\_ and sound a siren.

28. Massive volcanic \_\_\_\_\_ off the coasts of the \_\_\_\_\_ Islands and Hawaii have produced huge \_\_\_\_\_ in the past. Such an event in the Canary Islands could affect the U.S. \_\_\_\_\_ Coast.

29. On Mount St. Helens in 1980, an earthquake triggered the largest \_\_\_\_\_ in recorded history, which in turn triggered a \_\_\_\_\_ blast with a velocity of over \_\_\_\_\_ mph. The blast affected areas more than \_\_\_\_\_ miles away over an area of \_\_\_\_\_ square miles. \_\_\_\_\_ reached New York State.

4.4 30. Volcanoes are linked to other hazards, including fire, \_\_\_\_\_, land slides, and \_\_\_\_\_.

31. In modern times, volcanic eruptions have had the effect of \_\_\_\_\_ world temperatures for periods of many \_\_\_\_\_. This occurs because the \_\_\_\_\_ and acid aerosols scatter \_\_\_\_\_.

4.6 32. There is little humans can do to affect the \_\_\_\_\_ and \_\_\_\_\_ of eruptions. The best we can do is \_\_\_\_\_ the impacts.

4.7 33. An eruption forecast is like a \_\_\_\_\_ report. It is not as precise as a \_\_\_\_\_.

34. In the near future, it is \_\_\_\_\_ we will be able to \_\_\_\_\_ most volcanic activity, because it requires \_\_\_\_\_ with actual \_\_\_\_\_ before the mechanisms are understood.

35. Where volcanoes occur, we try to monitor 1) \_\_\_\_\_ activity, 2) \_\_\_\_\_ conditions, \_\_\_\_\_ or \_\_\_\_\_ of the volcano, \_\_\_\_\_ emissions, and the \_\_\_\_\_ of the particular volcano.

36. \_\_\_\_\_ may provide the earliest warning of an eruption.

37. Before an eruption, the rise in temperature at the surface can be detected by \_\_\_\_\_ remote sensing or \_\_\_\_\_. Heat may melt \_\_\_\_\_.
38. New magma may also change the \_\_\_\_\_ properties of rocks.
39. Before eruptions, the surface of Kilauea volcano shows \_\_\_\_\_ and \_\_\_\_\_, which can be monitored by tilt meters.
40. We can also monitor changes from the air using satellite-based \_\_\_\_\_ and networks of \_\_\_\_\_ receivers.
41. Increases in carbon dioxide and sulfur dioxide emissions can indicate \_\_\_\_\_ is moving toward the surface.
42. The primary tool for reconstructing geologic history is \_\_\_\_\_ of volcanic \_\_\_\_\_. Hazard \_\_\_\_\_ assist in \_\_\_\_\_ planning and disaster \_\_\_\_\_.
43. Like the National Weather Service, the U.S.G.S. issues watches and warnings. A \_\_\_\_\_ would be issued where there is the potential for a serious eruption, whereas if a hazardous eruption were imminent, a \_\_\_\_\_ would be issued.
44. However, the decisions about when to evacuate and return are made by \_\_\_\_\_.

4.8 45. People live near volcanoes because:

- 1) \_\_\_\_\_;
- 2) \_\_\_\_\_;
- 3) \_\_\_\_\_;
- 4) \_\_\_\_\_.

46. Though the science of volcanoes is well known, science alone is not \_\_\_\_\_, because people are often stubborn, and refuse to believe an eruption is possible when no eruption has occurred during \_\_\_\_\_.

47. Perhaps the greatest hazard reduction will arise during a volcanic \_\_\_\_\_,  
when improved communication between \_\_\_\_\_,  
\_\_\_\_\_ managers, educators, \_\_\_\_\_ and  
\_\_\_\_\_ is important.
48. The goal is to prevent a crisis from becoming a \_\_\_\_\_ or a  
\_\_\_\_\_.



Copyright © 2008 Pearson Prentice Hall, Inc.