

Study Guide  
Chapter 5 – Volcanoes

**GPS:**

**S6E5.** Students will investigate the scientific view of how the earth's surface is formed.

- d. Describe processes that change rocks and the surface of the Earth.
- e. Recognize that lithospheric plates constantly move and cause major geological events on the earth's surface.
- f. Explain the effects of physical processes (plate tectonics, erosion, deposition, volcanic eruption, gravity) on geological features including oceans (composition, currents, and tides).

1. A volcano is a weak spot in the crust where molten material, or magma, comes to the surface.
2. Magma is a molten mixture of rock-forming substances, gases, and water from the mantle.
3. When magma reaches the surface and leaves the volcano's vent it is called lava.
4. One major volcanic belt is the ring of fire, formed by the many volcanoes that rim the Pacific Ocean.
5. Volcanic belts form along the boundaries of Earth's plates.
6. Many volcanoes form near converging plate boundaries where oceanic plates collide.
7. A hot spot is an area where material from deep within the mantle rises and then melts, forming magma.
8. Molten rock and gas leave the volcano through an opening called a vent.
9. A crater is a bowl-shaped area that may form at the top of a volcano around the central vent.
10. When a volcano erupts, the force of the expanding gases pushes magma from the magma chamber.
11. Viscosity is the resistance of a liquid to flow. The greater the viscosity of a liquid, the slower it flows.
12. The viscosity of magma depends on its silica content and the temperature.
13. A volcano erupts explosively if its magma is high in silica.
14. Obsidian forms when lava cools very quickly, giving it a smooth, glossy surface like glass.
15. Pumice forms when gas bubbles are trapped in fast cooling lava, leaving spaces in the rock.
16. Volcanic ash, which is made of particles about the size of a grain of sand, can bury entire towns, clog jet engines, and become very heavy when it becomes wet and cause great destruction.
17. A dormant, or sleeping, volcano is like a sleeping bear and is expected to awaken in the future and become active and is likely to erupt.
18. Shield volcanoes erupt quietly and makes a gently sloping mountain.
19. If a volcano's lava has high viscosity, it may produce ash, cinders, and bombs and build up around the vent in a steep, cone-shaped hill or small mountain called a cindercone.
20. Composite volcanoes alternate between quiet eruptions and explosive eruptions.
21. Instead of forming mountains, some eruptions of lava form high, level areas called lava plateau.
22. The huge hole left by the collapse of a volcanic mountain is called a caldera.
23. A batholith is a mass of rock formed when a large body of magma cools inside the crust.
24. A dome mountain forms when uplift pushes a batholiths or smaller body of hardened magma toward the surface.
25. In geothermal activity magma a few kilometers beneath Earth's surface heats underground water.
26. A hot spring forms when groundwater is heated by a nearby body of magma or by hot rock deep underground, rises to the surface and collects in a natural pool.
27. A geyser is a fountain of water and steam that erupts from the ground where pressure has built up.