Chapter Nine: Earthquakes and Volcanoes
Lesson 2: Volcanoes

Volcanoes: a vent in Earth's crust through which melted – or molten – rock flows

Magma: molten rock below Earth's surface

How volcanoes form:

- Convergent boundaries at the subduction zone
- Divergent boundaries at mid-ocean ridges
- **Hot spots:** volcanoes that are not associated with plate boundaries
    - The magma that supplies this volcano comes from a plume of magma with rising currents of hot mantle material
    - When the plate moves away from the plume, the volcano becomes dormant (inactive) and a new volcano forms in its place. Younger volcanoes are directly over the plume of magma

Ring of Fire: an area of earthquakes and volcanic activity that surrounds the Pacific Ocean

USGS: United State Geological Survey

4 Types of Volcanoes:

- **Shield Volcanoes:**
    - Occur at divergent boundaries
    - Large with gentle slopes
    - Quiet eruptions of magma/lava
    - Islands of Hawaii

- **Composite Volcanoes:**
    - Occur at convergent boundaries
    - Also known as Stratovolcanoes
    - Large steep sided volcano
    - Most common volcano
    - Explosive eruptions followed by quiet eruptions
    - Mount Saint Helens

- **Cinder-Cone Volcanoes:**
    - Small steep sided volcano
    - Explosive eruptions
    - Erode quickly

- **Super Volcano:**
    - Very large and very explosive
    - Yellowstone

Caldera: large volcanic depression formed when a volcano's summit collapses or is blown away by explosive activity

Pyroclastic material: rock fragments from an explosive eruption

Volcanic ash: tiny particles of volcanic rock and glass

Silica is the main component in magma

Viscosity: fluids resistance to flow

Dissolved gases in magma contribute to how explosive a volcano can be.

Effects of Volcanic Eruptions:

- Lava flows: slow moving lava that is rarely deadly but damaging
- Ash fall: when volcanoes erupt, large amounts of ash go into the air
- Mudflow: when lava mixes with meltwater from the volcano
- Pyroclastic flow: material that erupts from an explosive volcano

Predicting eruptions: scientists look at ground deformation, change in shape of the volcano, and a series of earthquakes

Volcanic eruptions can affect the global climate by decreasing the overall temperature.