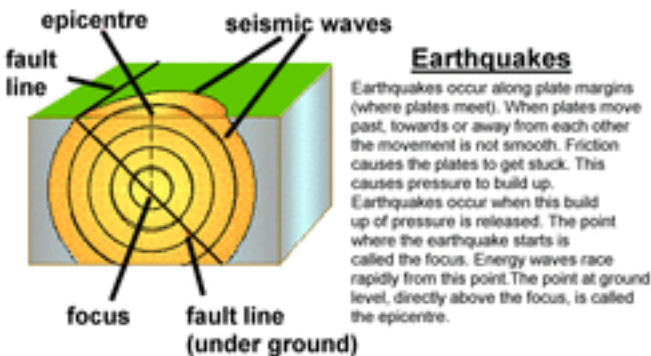


Earthquakes & Volcanoes

[taken from Weather Kids](#)

What is an Earthquake?



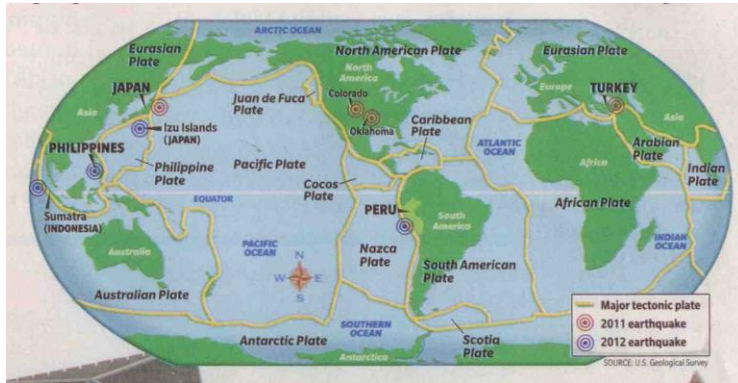
Earthquakes begin in the Earth's crust along **Faults**. Earthquakes are the sudden shaking and rolling of the Earth's **surface**. They are one of the

Earth's natural methods of releasing energy. More than a million earthquakes shake the world each year. In the United States, cities like San Francisco in California are most at risk of having an earthquake because they are on **the San Andreas Fault**. However, earthquakes happen in many other places all over the world. Earthquakes can be felt over large areas although they usually last less than one minute. Earthquakes cannot be predicted - although scientists are working on it!

What is a Fault?

A **Fault** is an area of stress in the earth where **tectonic plates** slide past each other, causing a crack in the Earth's surface. There are the major types of faults: dip-slip, dip-slip reverse, and strike-slip.

What Causes an Earthquake?



There are about 20 **tectonic plates** along the surface of the earth that move continuously and slowly. When the plates in

the Earth's crust move against each other, huge rocks shift with great force, causing an earthquake.

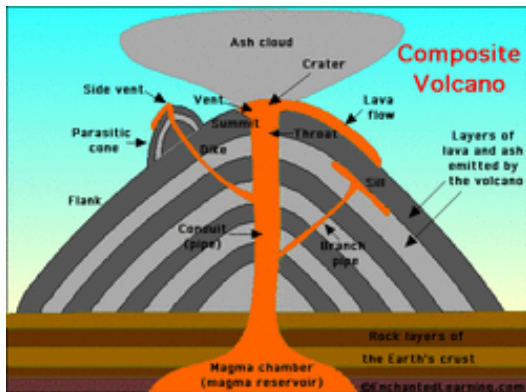
Think of it this way: Imagine holding a pencil horizontally. If you were to apply a force to both ends of the pencil by pushing down on them, you would see the pencil bend. After enough force was applied, the pencil would break in the middle, releasing the stress you have put on it. The Earth's crust acts in the same way.

As the plates move they put forces on each other. When the force is large enough, the crust breaks. When the break occurs, the stress is released as energy, which moves through the Earth in the form of waves, which we feel and call an earthquake.

What are Plate Tectonics?

The theory of plate tectonics is how continents slowly move from place to place. The moving plates break apart, collide, and grind against each other. The Earth's crust and upper mantle are made of several large, rigid plates that move against each other. The plates are all moving in different directions and at different speeds. Sometimes the plates crash together, sometimes they pull apart. They can also rub against each other. When this happens, the results could be earthquakes.

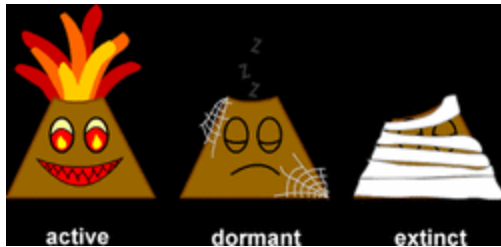
What is a Volcano?



A volcano is a mountain that opens downward to a pool of molten rock called magma. The pool of rock is below the surface of the Earth. When pressure builds up inside the volcano, eruptions occur. Gases and rock shoot up through

the opening and spill over or fill the air with lava fragments. Eruptions can cause, lava flows, hot ash flows, mudslides, avalanches, and falling ash. Volcano eruptions have been known to knock down entire forests. An erupting volcano can trigger dangerous events like tsunamis, flash floods, and earthquakes.

What are the Different Stages of Volcanoes?



Scientists have categorized volcanoes into three main categories: **active**, **dormant**, and **extinct**. An active volcano is one which has recently erupted and there is a

possibility that it may erupt soon. A dormant volcano is one which has not erupted in a long time but there is a possibility it can erupt in the future. An extinct volcano is one which has erupted thousands of years ago and there's no possibility of eruption.

Why do Volcanoes Erupt?

The Earth's crust is made up of huge slabs called plates, which fit together like a jigsaw puzzle. These plates sometimes move. The friction causes earthquakes and volcanic eruptions near the edges of the plates.

What is the Ring of Fire?



The Pacific **Ring of Fire** is an area of frequent earthquakes and volcanic eruptions encircling the basin of the Pacific Ocean. The Ring of Fire has 452 volcanoes and is home to over 50% of the world's

active and dormant volcanoes. 90% of the world's earthquakes and 81% of the world's largest earthquakes occur along the Ring of Fire.

What are the Different Types of Volcanoes?

Cinder Cones	Cinder cones are circular or oval cones made up of small fragments of lava from a single vent that have been blown into the air, cooled and fallen around the vent.
Composite Volcanoes	Composite volcanoes are steep-sided volcanoes composed of many layers of volcanic rocks, usually made from high-viscosity lava, ash and rock debris. Mt. Rainier and Mount St. Helens are examples of this type of volcano.
Shield Volcanoes	Shield volcanoes are volcanoes shaped like a bowl or shield in the middle with long gentle slopes made by basaltic lava flows. Basalt lava flows from these volcanoes are called flood basalts. The volcanoes that formed the basalt of the Columbia Plateau were shield volcanoes.
Lava Volcanoes	Lava domes are formed when erupting lava is too thick to flow and makes a steep-sided mound as the lava piles up near the volcanic vent. The eruption of Mount St. Helens in 1980 was caused in part by a lava dome shifting to allow explosive gas and steam to escape from inside the mountain.