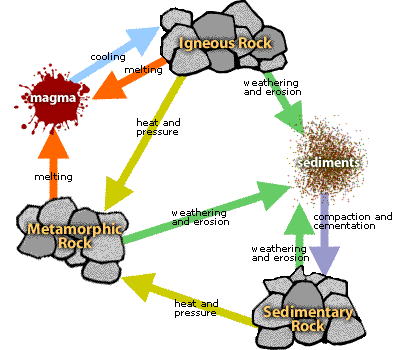
Topic: Geology

|  |  |
| --- | --- |
| Part of the Earth | Facts |
| Crust | * Thin, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_layer of Earth * Oceanic crust is 7 km thick which is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ than \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_plates |
| Mantle | * 82% of the Earth’s volume * Solid rock at the \_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ at the bottom |
| Lithosphere | * The crust and uppermost mantle * Cool, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_shell * 100 km thick |
| Asthenosphere | * Soft, comparatively weak layer * Below the lithosphere * Rock \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ melting |
| Outer Core | * Liquid layer 2260 km thick * Metallic iron generates Earth’s \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ field |
| Inner Core | * Solid layer having a radius of 1220 km * \_\_\_\_\_\_\_\_\_\_\_\_\_\_ temperatures and \_\_\_\_\_\_\_\_\_\_\_\_ pressure * Nickel mostly |

Rock: Any solid mass of mineral or mineral-like matter that occurs naturally as part of our planet  
Three types: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**,**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |
| --- | --- |
| Vocabulary Word | Definition |
| Weathering |  |
| Compaction |  |
| Melting |  |
| Cementation |  |

Rock cycle:

* A continuous process
* Driven by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ energy  
  

Igneous Rock -----------------------------> Sedimentary Rock

Sedimentary Rock ------------------------> Metamorphic Rock  
  
Metamorphic Rock ------------------------> Igneous Rock  
  
Metamorphic Rock -------------------------> Sedimentary Rock

Topic: Continental Drift Theory

**Explanation of the Theory**

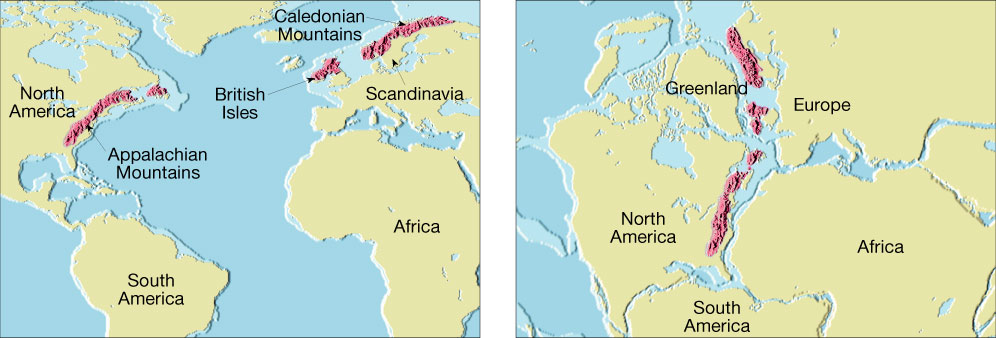
* Proposed by Alfred Wegener
* Stated that the continents had once been joined to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ supercontinent
* Wegener’s Theory
  + Pangaea broke apart 200 MY
  + Continents “drifted”, Continents “broke” through the oceans

**Pangea**:

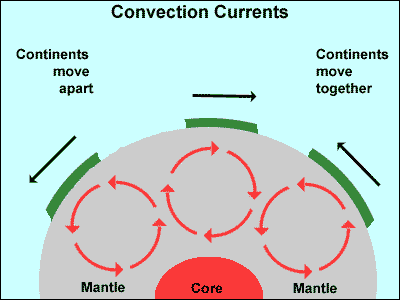
**Evidence of Continental Drift Theory**

1. Shorelines look like they \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Fossil organisms \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_landmasses
3. Mountain Ranges:
4. Glacier Evidence:

Mountain Ranges



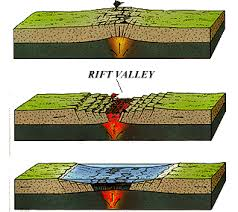
**The Plate Tectonic Theory**:

Proposes that Earth’s outer shell consist of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_plates that \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_in various ways and thereby produce earthquakes, volcanoes, mountains, and the crust itself  


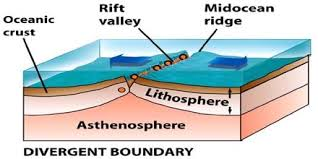
**Mantle Convection**

* Basic \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ for plate movement
* The unequal distribution of heat within Earth causes thermal convection the drives plate motion

**Divergent Boundaries**

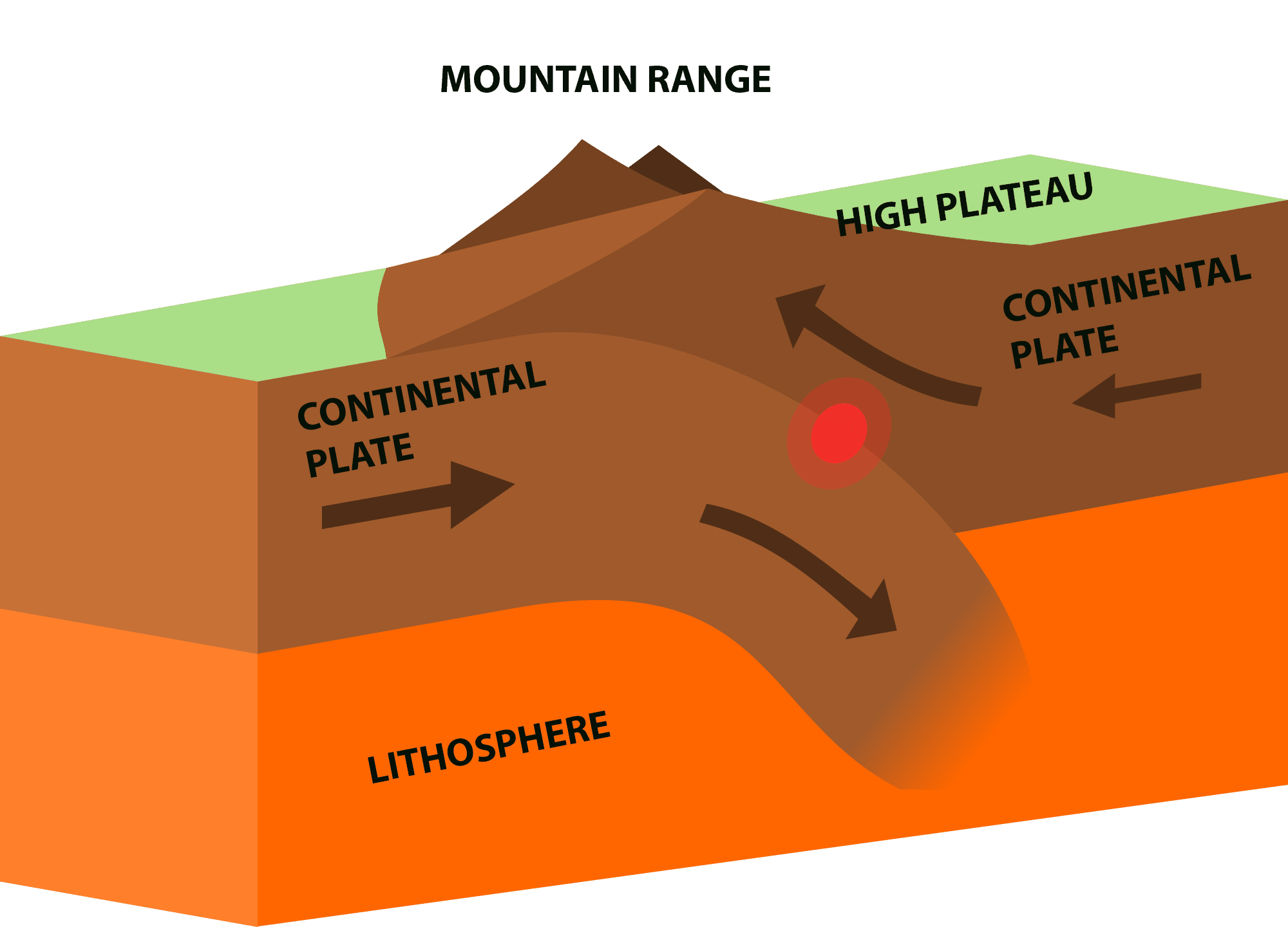
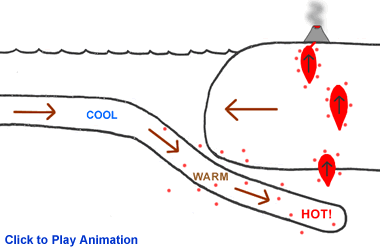
* Also called spreading centers
* When two plates move \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Creates new \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

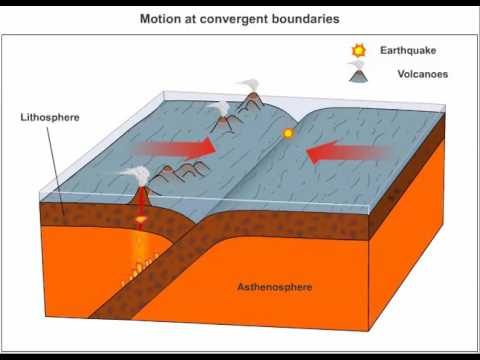
(seafloor spreading)

* Causes ocean ridges and rift valleys  
  

Convergent Boundaries

|  |  |  |  |
| --- | --- | --- | --- |
| Type of Convergent Boundary | Oceanic-  Continental boundaries | Continental-  Continental Boundaries | Oceanic-  Oceanic boundaries |
| Landform Created | Causes subduction zones,\_\_\_\_\_\_\_\_\_\_\_, continental volcanic arcs | Two plates collide - Forms  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | One oceanic plate goes \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_another oceanic plate Creates volcanic island arcs |





**Volcanoes**:

Definition: A mountain \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and/or pyroclastic material

Difference:

Magma – molten rock \_\_\_\_\_\_\_\_\_\_\_\_\_ Earth  
Lava – molten rock \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Earth’s surface

Gases

* 70% water vapor
* 15% carbon dioxide
* 5% nitrogen
* 5% sulfur

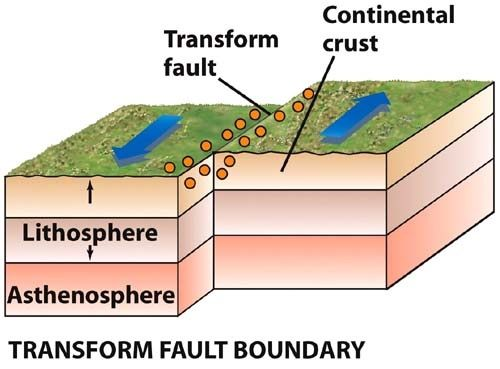
Pyroclastic material

* Fragments\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ during eruptions
* Varies in size from very fine and volcanic ash to pieces that weigh several tons

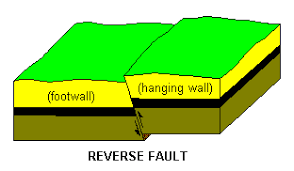
**Hot Spots**:

Small volcanic region a few hundred kilometers across within a plate   
Ex: Hawaiian Island

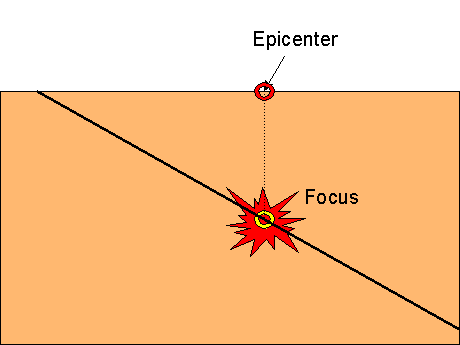
Transform Boundary

* Two plates grind \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ without production and destruction of lithosphere
* Ex: San Andreas Fault in California  
  

**Faults**:

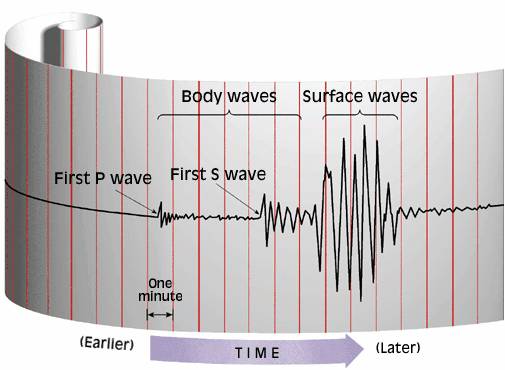
* Faults are formed by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in rocks
* Parts of a Fault
  + Hanging wall: rock above the fault line
  + Foot Wall: rock below the fault line

**Earthquake**:

* Vibration of Earth produced by a sudden release of energy
* Movements along the fault line

|  |  |
| --- | --- |
| Focus | point within the Earth where the Earthquake starts |
| Epicenter | location on the surface of Earth directly  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Fault- | associated with earthquake activity where \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

Waves:

1. Surface
   1. Seismic waves that travel along Earth’s outer layer
   2. Most \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ earthquake waves
   3. Last to arrive at the seismograph
2. P waves
   1. Can travel through solid, liquid, and gas
   2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ waves
3. S waves
   1. Can only travel through \_\_\_\_\_\_\_\_\_\_\_\_\_\_
   2. Slower than P waves but faster than surface waves  
      

Intensity and Magnitude of Earthquakes

**Intensity** - A measure of the amount of earthquake \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ at a given location

**Magnitude**  
the amount of energy released \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of an earthquake  
Scale 0-10, 2.5 is the weakest damage

Tsumani

Seismic sea waves  
Triggered by an earthquake occurring where a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_is displaced vertically along a fault  
  
