Plate Boundaries

**Two Types of Plates**

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Plate:
   * More Dense and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   * Made of a specific rock called BASALT
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Plate:
   * Less dense and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   * Made of a specific rock called GRANITE

When these two types of plates interact, the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Plate ALWAYS \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ below the continental plate.

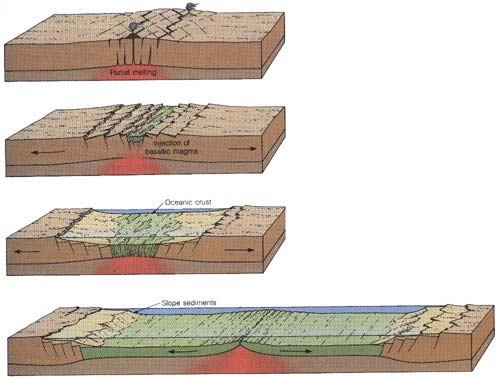
**Plate Boundaries…**

At the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the plates is where all the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ occurs

When Plates move – there are only \_\_\_\_\_ choices they have…

1) Separate from each other (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)

2) Crash directly into each other and one goes under the other (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)

3) Slide past/along one another (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)

***The 3 Types of Plate Boundaries***

**#1-DIVERGENT boundaries**

Two plates \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_from each other opening a gap called a spreading center

There are 2 types:

1. Oceanic-Oceanic
2. Continental- Continental

As molten rock comes up through the trench created by the diverging plates, it pushes the old crust aside causing it to buckle. This process is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. ***Diverging Over Water… (Oceanic-Oceanic)***

When tectonic plates diverge, pull part, over water, the spreading center is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Because the magma rises up through the crack and pushes the old crust aside, new sea floor is created. This is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The Mid Atlantic Ridge is formed by Diverging Oceanic Plates

It is an area in the middle of the Atlantic Ocean that is forming an ocean ridge

during sea floor spreading

1. ***Divergent plates over land… (Continental-Continental)***

When tectonic plates diverge, pull apart, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, the spreading center is called a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

This is less common than spreading over water

Diverging plates in eastern Africa are slowly breaking Africa into pieces creating rift valleys at the spreading centers

**#2- CONVERGENT Boundaries**

When 2 plates \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_each other

The plates will do 1 of 2 things:

1. One plate will \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ underneath of the other plate, this is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. The two plates will \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ with one another without the sinking of plates

There are \_\_\_\_\_\_\_\_\_ types of Convergence:

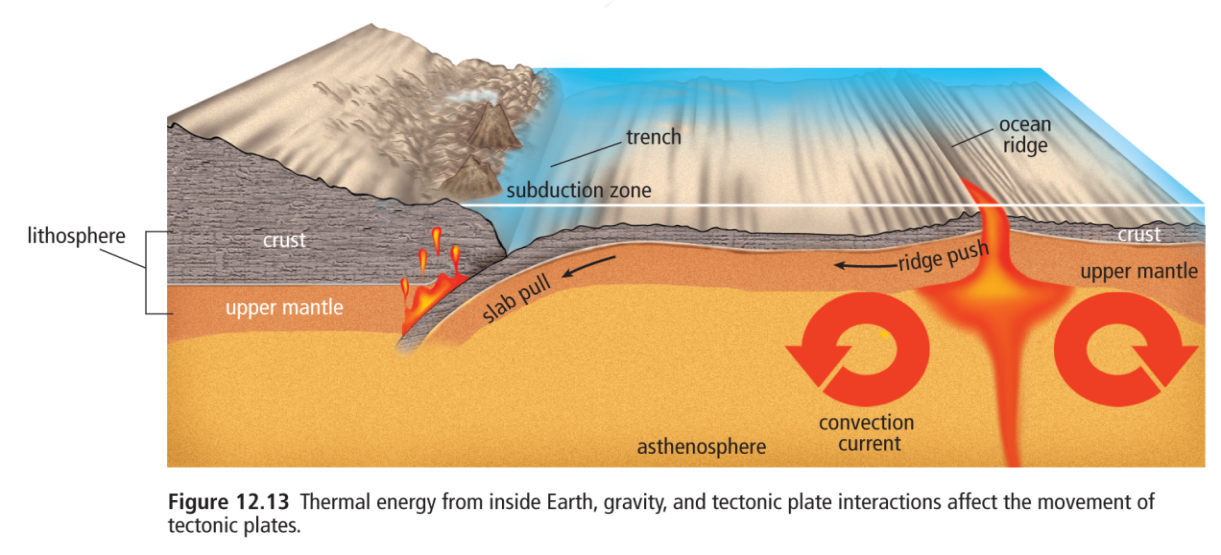
* 1. Oceanic- Continental
  2. Oceanic-Oceanic
  3. Continental-Continental

**Convergent Plates with Subduction**

When \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ occurs – the edge of the plate subducts deep into the mantle and starts to melt creating \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

When the plate subducts, it “pulls” the rest of the plate with it - This is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (the whole slab is pulled under the other slab)

This slab pull helps keep the tectonic plates in motion.

**Subduction, Ridge push, and Slab pull**

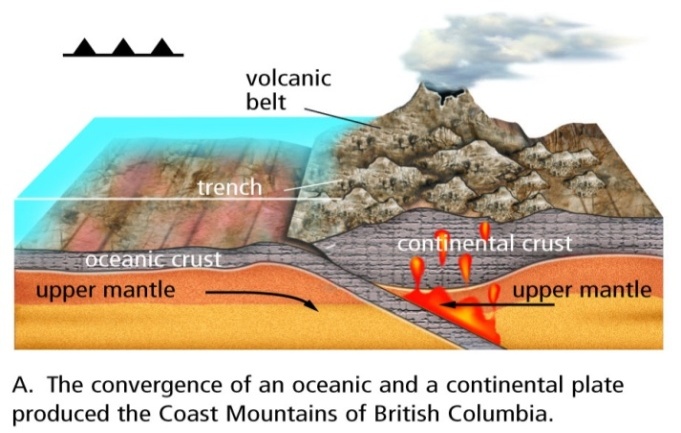
1. **Oceanic-Continental Plate Convergence…**

When a dense (heavier) oceanic plate collides with a less-dense (lighter) continental plate, the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

This creates a deep underwater valley called a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

As the subducting plate moves deeper, magma can work its way to the surface forming cone-shaped Volcanoes

A chain of volcanoes = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

This force of collision between the 2 plates creates \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_as the continental rock crumbles and folds

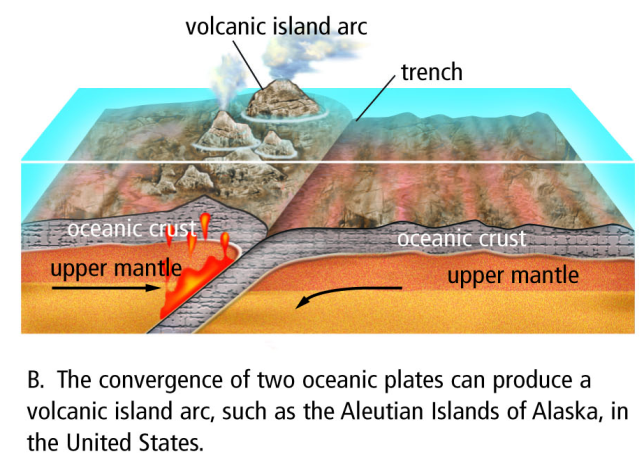
Oceanic – Continental Convergence

Symbol for convergence on maps

1. **Oceanic - Oceanic Plate Convergence…**

Subduction occurs when 2 oceanic plates converge/collide.

The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_under the other, and the subducting plate sinks deep into the mantle

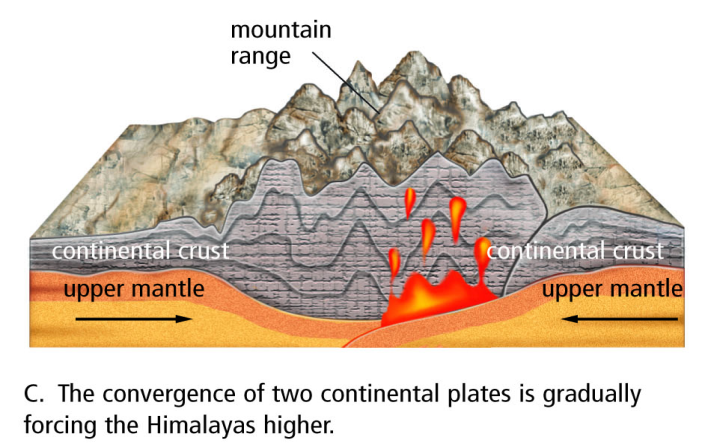
This interaction may produce a long chain of volcanic islands known as a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_( ie. Japan islands)

Oceanic – Oceanic Convergence

1. **Continental - Continental Plate Convergence…**

When continental plates collide, subduction\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ occur because the plates are the same density.

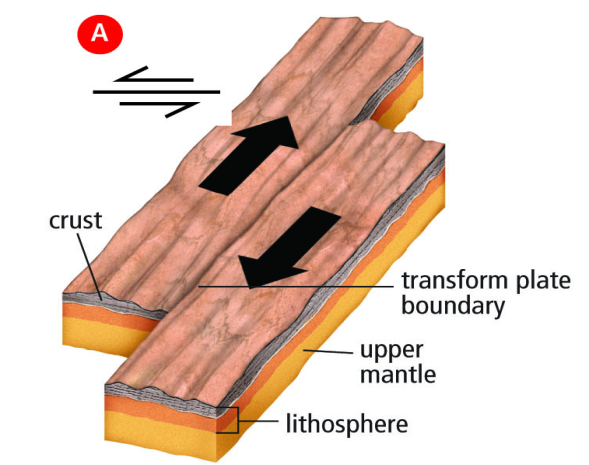
Instead, the plates \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and their edges crumple and fold forming great \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (ie. The Himalayas)

The Himalayas are the highest and youngest mountain range and are increasing in height several cm a year due to continuous convergence of the plates!

Continental- Continental Convergence

**#3- Transformation boundaries**

2 plates \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ one another

Because they are sliding horizontally past each other – \_\_\_\_\_\_\_mountains or volcanoes are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

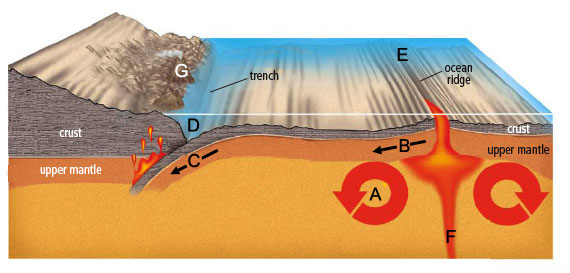
Transform Faults

What do form are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Faults are cracks in the rock due to movement

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_are the name we give to the area where the plates slide



The following illustration depicts the movement of tectonic plates.  
  
  
1. What is the name of the process occurring at C, where one part of a tectonic plate tugs the rest of the plate along as it returns into the lower portions of the mantle?

1. Slab push
2. Slab pull
3. Ridge push
4. Ridge pull

2. Subduction zones are sites of convergent plate interactions. Here, a more dense tectonic plate pushes below a less dense tectonic plate, forming a trench. In the illustration, where is the subduction zone, or trench?

1. E
2. D
3. A
4. F

3. What is the name of divergent boundary found on land that exhibits the same process that occurs at E?

1. Volcano
2. Earthquake
3. Rift valley
4.   Ocean ridge

4. In order, what are the plate boundaries located at A, B and C?

1. Divergent, Convergent and Transform
2. Convergent, Divergent and Transform
3. Transform, Convergent and Divergent
4. Convergent, Transform and Divergent

5. What has formed at the east side of the Caribbean plate?

1. mountains
2. volcanic island arc
3. earthquakes
4. island chains over a hotspot.

6. What is the difference between a volcanic island chain and a volcanic island arc?

7. Draw a large diagram to help you review plate boundaries. Your diagram (or diagrams if you cannot think of how to put everything onto the same picture) must include:

convergent boundary \_\_\_\_\_\_\_ subduction zone \_\_\_\_\_\_\_ trench \_\_\_\_\_\_\_

divergent boundary \_\_\_\_\_\_\_ ocean ridge \_\_\_\_\_\_\_ rising magma \_\_\_\_\_\_\_

rift valley \_\_\_\_\_\_\_ convection current \_\_\_\_\_\_\_ transform fault \_\_\_\_\_\_\_

ridge push \_\_\_\_\_\_\_ slab pull \_\_\_\_\_\_\_ crust \_\_\_\_\_\_\_

tectonic plate ­ \_\_\_\_\_\_\_ asthenosphere \_\_\_\_\_\_\_ lithosphere \_\_\_\_\_\_\_

hot spot \_\_\_\_\_\_\_ volcanic island chain \_\_\_\_\_\_\_

Put a ☺ beside each word after you have put it on your diagram so you know when your diagram is complete.