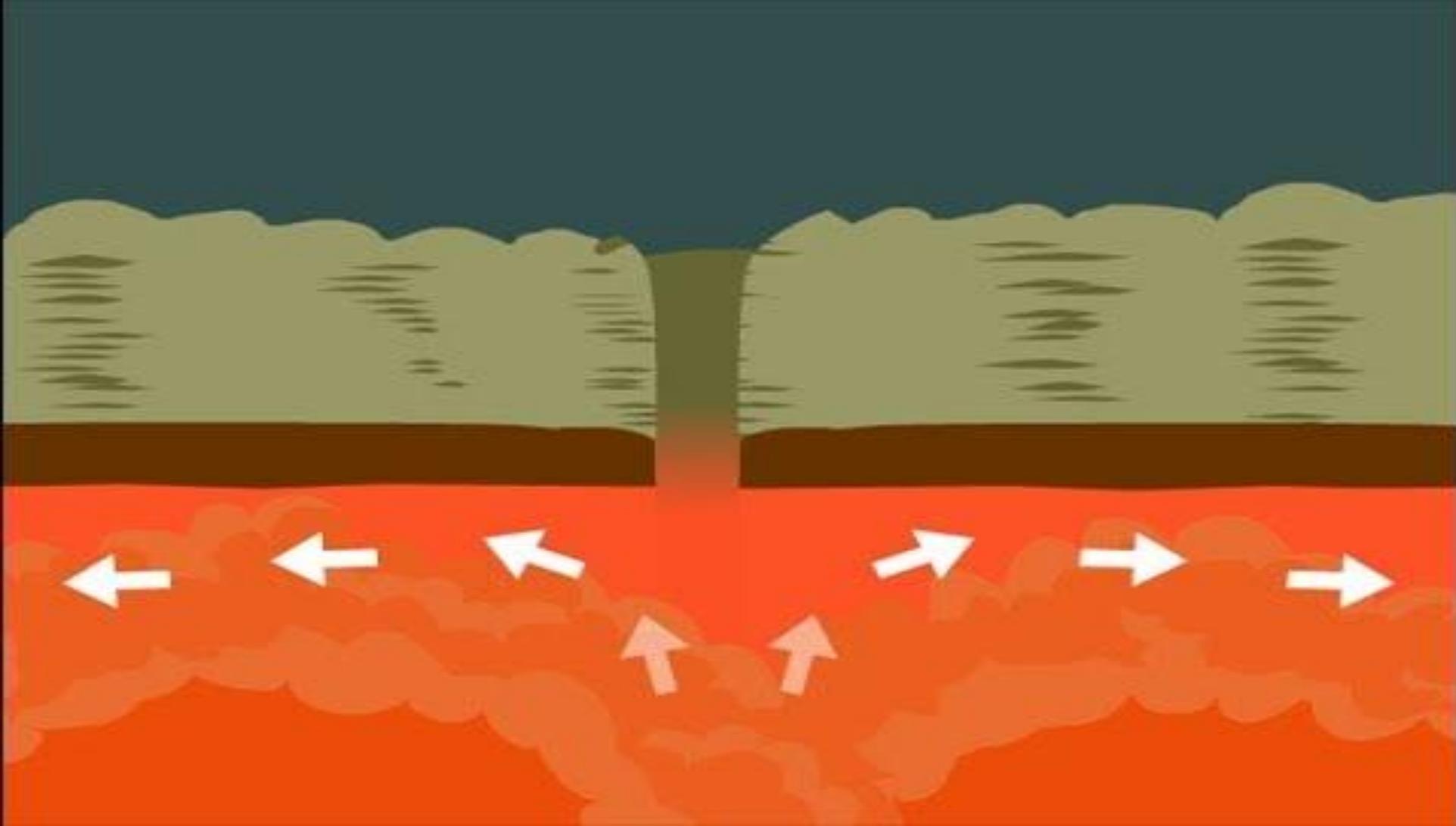




Module F  
Lesson 3  
Exploration 3  
Modeling Earth's Surface

# Earth's Broken Surface

- Tectonic plates
  - Earth's entire surface, including the ocean floor and the continents, is broken into large moving pieces
  - a block of lithosphere that consists of the crust and the rigid, outermost part of the mantle
  - form Earth's outer shell



Get onto online science book and  
complete the activity

A dark blue, solid-colored shape that starts as a thin line at the bottom left and expands diagonally upwards to the right, filling the bottom half of the page.

# Plate Motion

## PLATES....

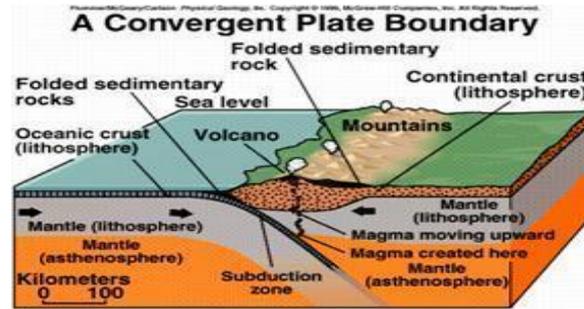
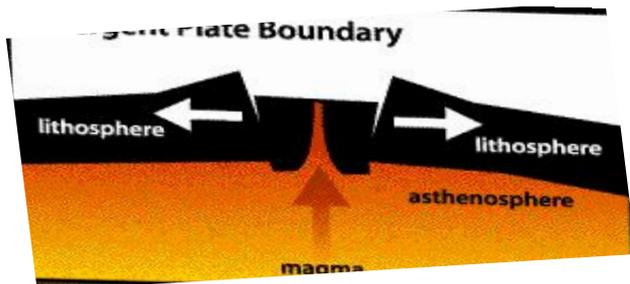
- move just a few centimeters per year.
- move apart, (*divergent*)
  - volcanoes, mid-ocean ridges, and ocean basins may form.
- move toward each other (*convergent*)
  - volcanoes and mountain chains may form.
- move horizontally (*transform*)
  - hills, mountains, and off-set streams may develop.
  - volcanoes **DO NOT** form at these boundaries.

# Plate Boundaries!!!

1. *Divergent Plate Boundary*

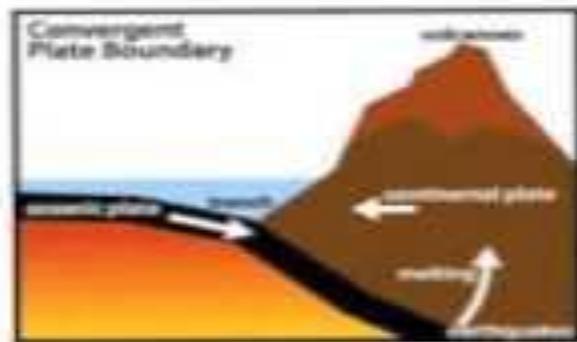
2. Convergent Plate Boundary

3. Transform Fault Boundary



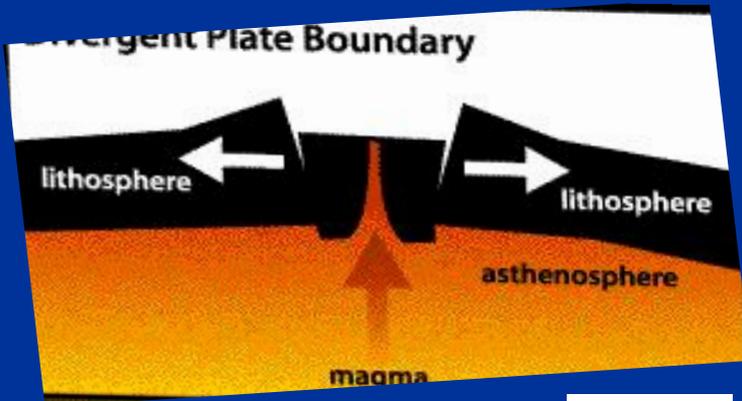
Convergent they come together  
Subduction one plate goes under  
We see fireworks where they touch now  
(Volcanoes can come out soon)

The plates fit the line like a glove  
Side to side they shear and they cut  
'Cause earthquakes along a transform now  
(San Andreas is one too)



# 1. Divergent Plate Boundary

- the boundary between 2 plates that are moving APART or away from one another
- The force associated with this boundary is TENSION.

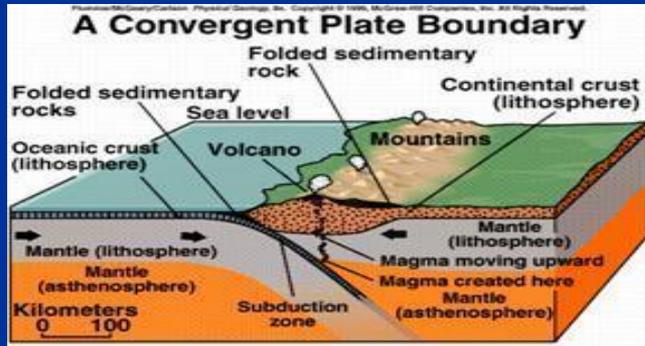


Examples:

*Mid-Atlantic Ridge*  
Great Rift Valley

# 2. Convergent Plate Boundary

- the boundary between 2 plates that are moving TOWARDS each other
- The force associated with this boundary is COMPRESSION
- Mountains and Volcanoes form at these boundaries
- There are 3 kinds of convergent plate boundaries:



ocean – continental

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ocean – ocean

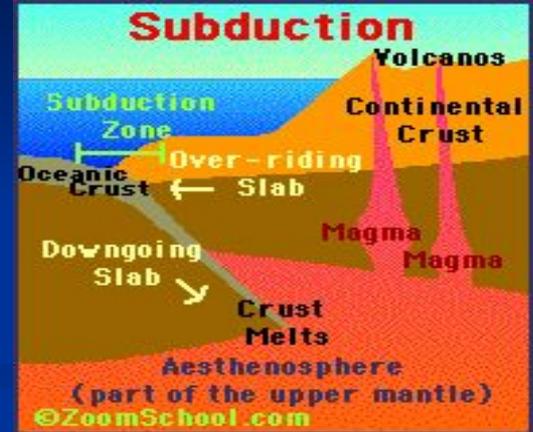
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continental - continental

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# Ocean - Continental

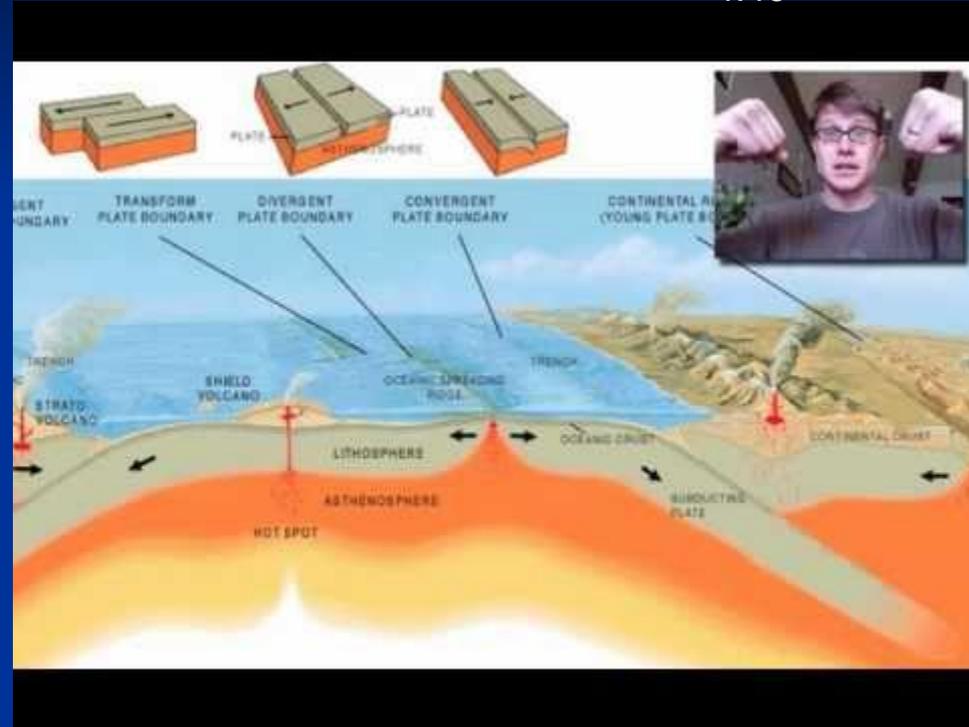
- subduction zone the area where an oceanic plate descends into the upper mantle in this kind of collision
- volcanoes occur above subduction zones



# Ocean - Ocean

Start on  
4:43

One oceanic plate (the denser one) will slide under the other oceanic plate, which can create a volcano.



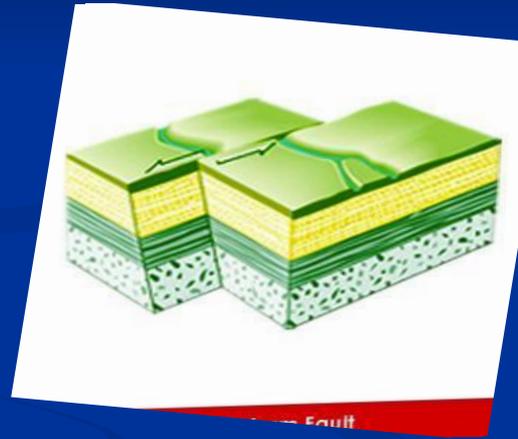
# Continental to Continental

Mountain ranges  
form - Himalayas

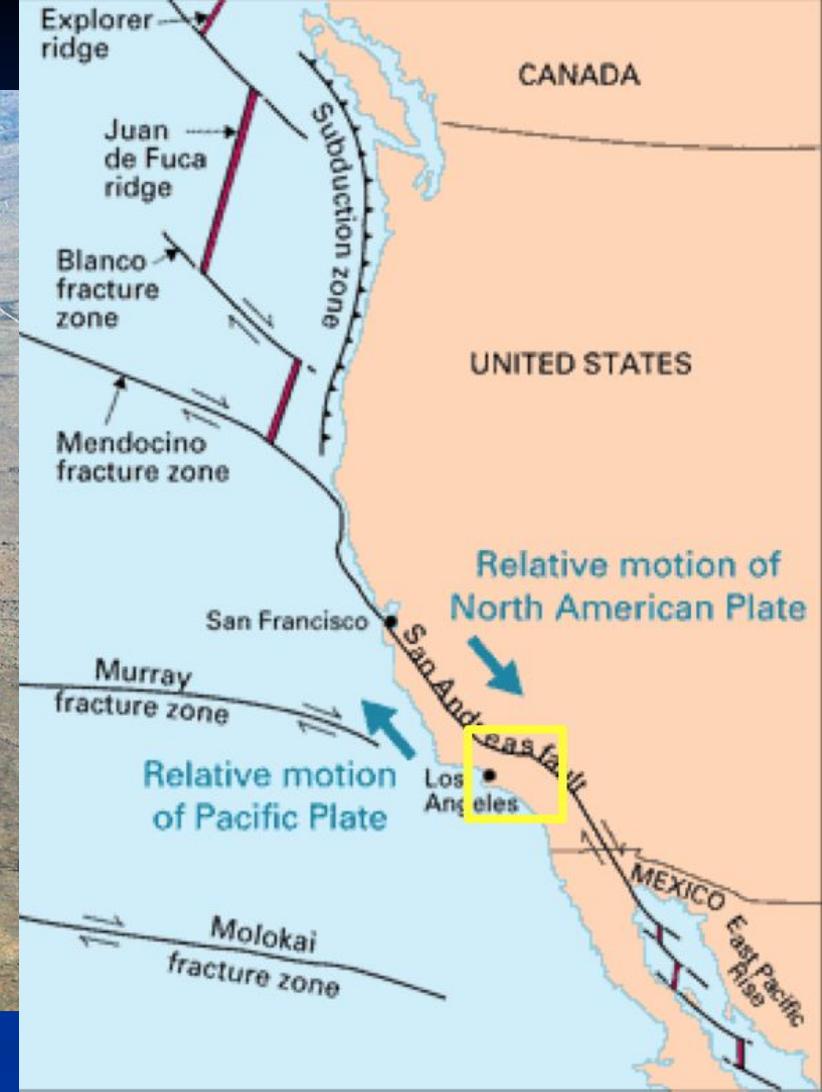


# 3. Transform Fault Boundary

- the boundary between 2 plates that SLIDE past one another and are moving in opposite directions or in the same direction at different Rates
- The force associated with this type of boundary is SHEAR
- Earthquakes are a result of transform fault boundaries



**Example:**  
**San Andreas fault**



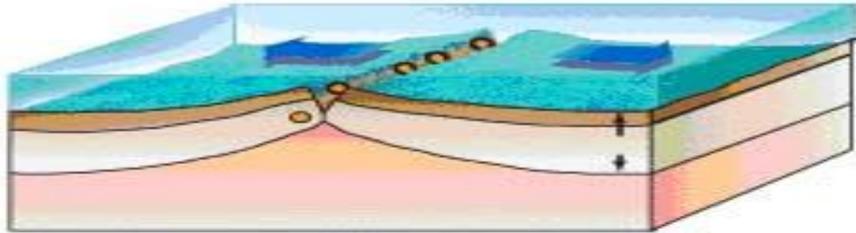


# Effects of Plate Tectonics!!!

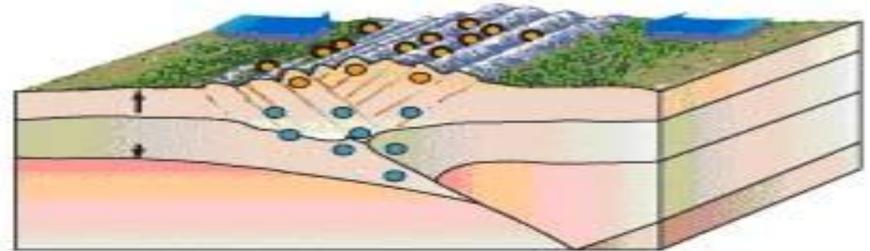
1. mountains
2. rift ocean basins
3. *volcanoes*
4. earthquakes



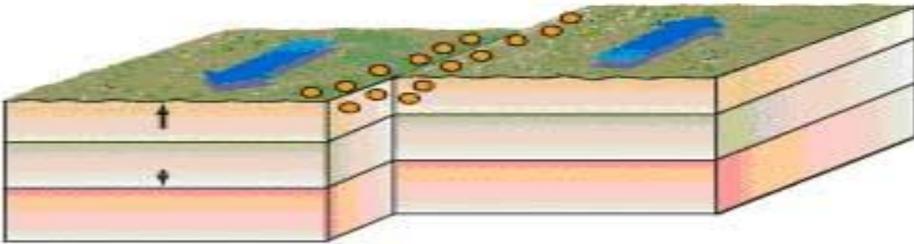
As a left side page, Create your version of the 4 diagrams below, BE SURE to include the type of force associated with each plate boundary



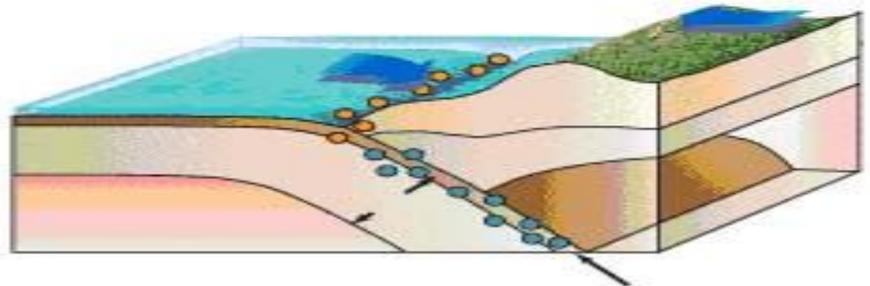
**DIVERGENT BOUNDARY**



**CONTINENTAL COLLISION BOUNDARY**



**TRANSFORM FAULT BOUNDARY**



**SUBDUCTION ZONE BOUNDARY**

# Do Ebook Activity under Plate Motion section

Also do Evidence Notebook Activity

Use the Pangea activity from  
Exploration 2 to answer the  
questions in the hands on  
Lab Section of  
Exploration 3