

# Chapter 10 Lesson 3 Part 2

- I can explain how plate movement relates to earthquakes, mountain building, volcanoes, and sea floor spreading.
- SPI 0707.7.6 Describe the relationship between plate movements and earthquakes, mountain building, volcanoes, and sea floor spreading.

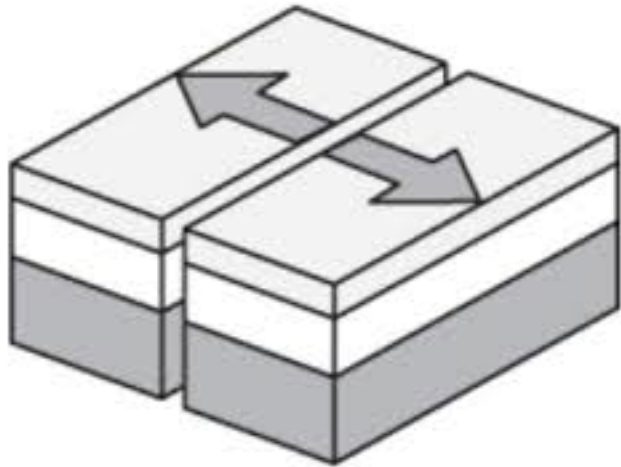
# What Mastery Looks Like

- 36** The Andes Mountains of South America were gradually formed when the Nazca and South American tectonic plates collided. Which of these caused this collision?
- F** convection currents in Earth's mantle
  - G** volcanic activity in Earth's crust
  - H** movement of material within Earth's core
  - J** changes in Earth's magnetic field

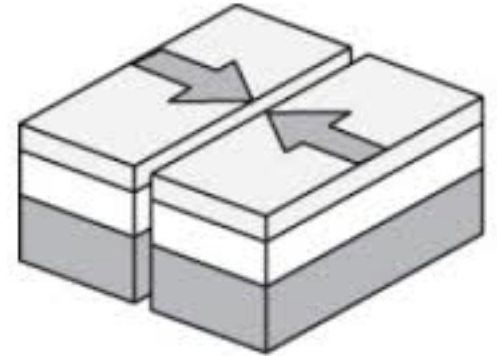
# Plate Boundaries

- Plates can collide. (converge)
- Plates can separate. (diverge)
- Plates can slide past each other. (transform)
  
- With your hands, show what you think each of these would look like.

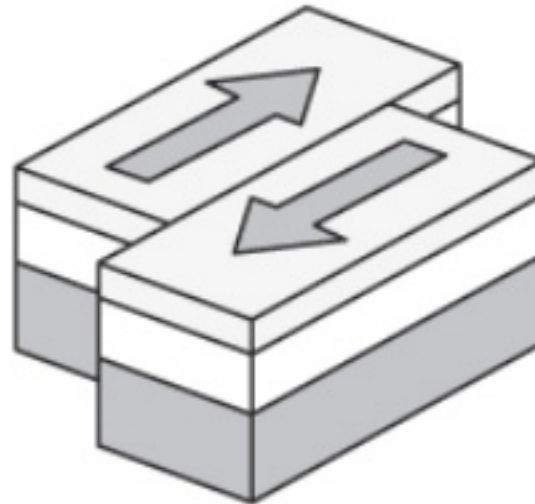
**DIVERGENT**



**CONVERGENT**



**TRANSFORM**

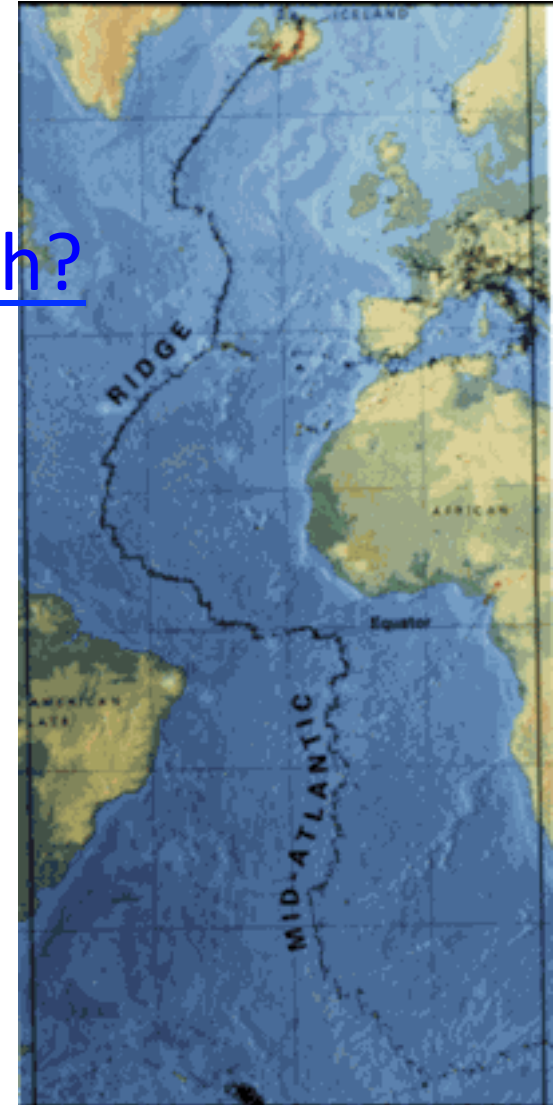
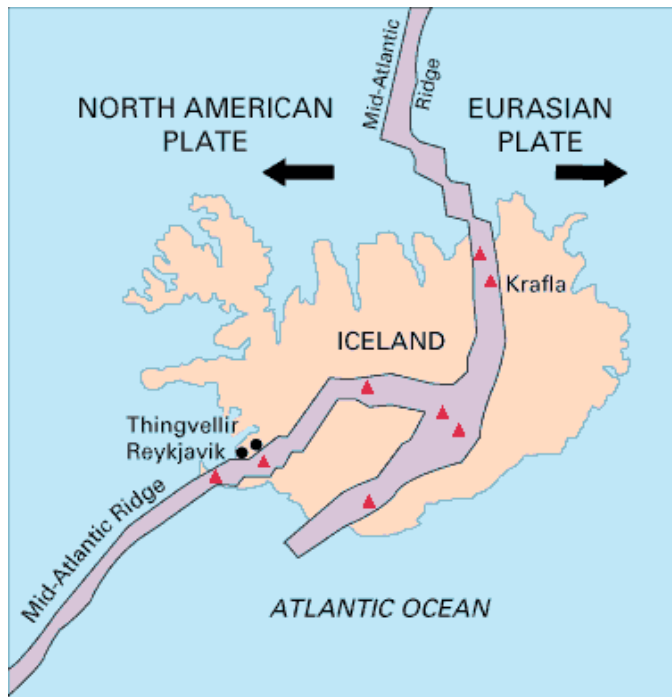


# PREDICT!

- What types of things happen at each type of boundary?
- Talk to your group.

# Divergent Boundary

- This is where plates move apart.
- <https://www.youtube.com/watch?v=2j1UzJulWBk> (until 8:00)

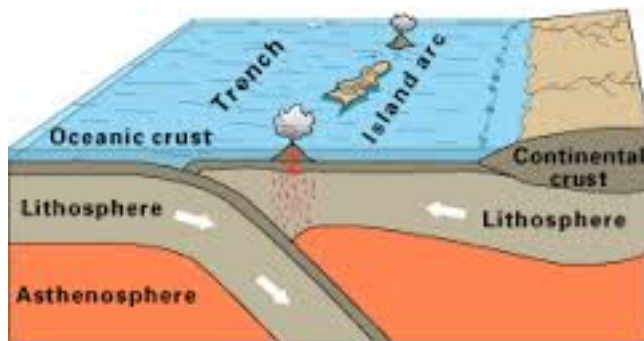


# Convergent Boundaries

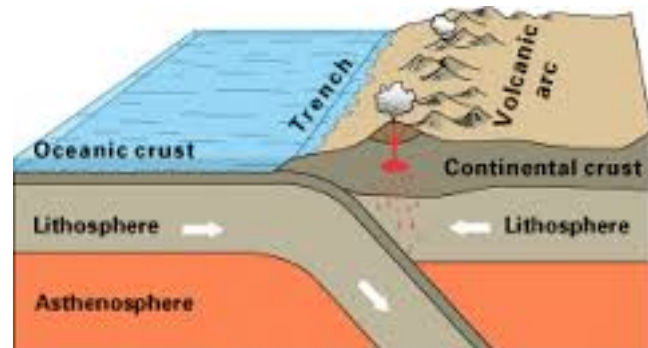
- This is where plates move together.
- Earth's surface does not expand, even with new crust being added at one location.
- As new crust is added at one place, it disappears below the surface at another.
- This disappearance can occur when seafloor cools, becomes denser, and sinks. This occurs at a convergent boundary.

# Subduction Zones

- Subduct means to go down.
- Subduction zones occur in different ways.
  - Oceanic plates (a denser plate), converge underneath (a less denser plate) a continental plate. (Subduction Zones)
  - If two oceanic plates converge the heavier and denser of the two plates subducts into the upper mantle. The Aleutian Islands in Alaska have formed as the Pacific Plate subducts beneath the North American Plate.



Oceanic-oceanic convergence



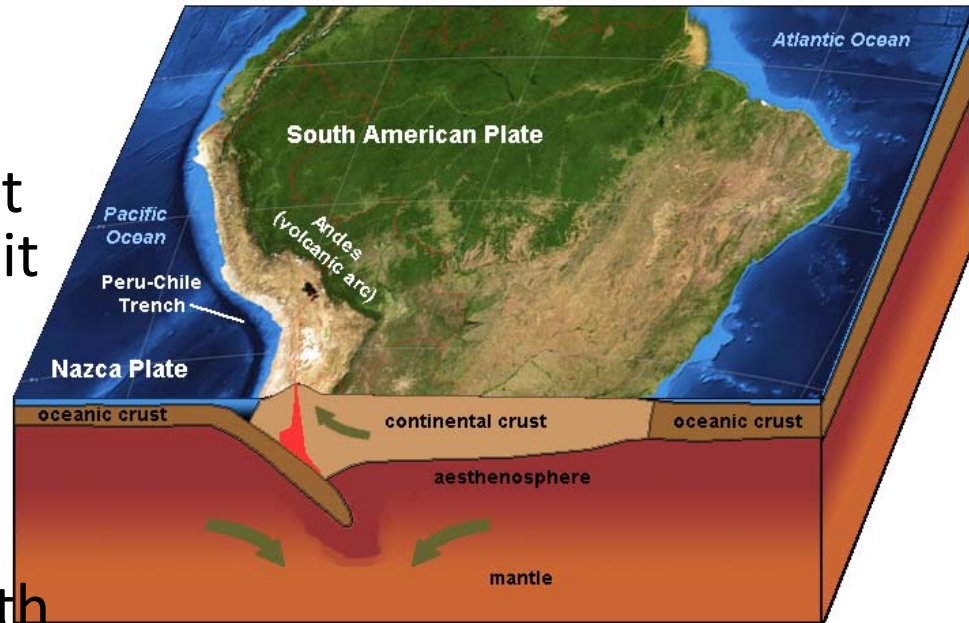
Oceanic-continental convergence

- <https://www.youtube.com/watch?v=NbDqJy28hBw>



# Subduction Zone Volcanoes

- <https://www.youtube.com/watch?v=pq-JVocLiCQ>
- Some Volcanoes form above subduction zones.
- High temps cause rocks to melt around the subducting slab as it goes under the other plate.
- New magma –forced upward along these plates and forms volcanoes.
- Example: Andes Mountains with many volcanoes
  - Formed at convergent boundaries of Nazca and South America Plates.

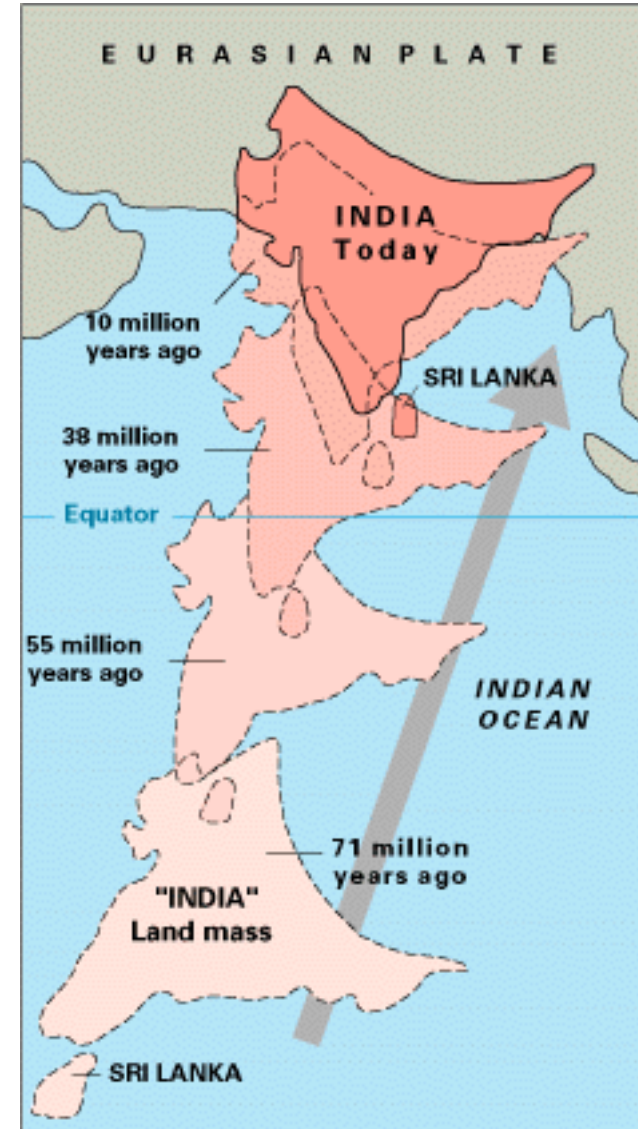


# Visualizing Plate Boundaries

- Examine the picture on p. 311
- How would you predict the size of the Atlantic Ocean will change over 100 million years? Why?
- The Andes mountains are found along the west coast of South America. How did this mountain chain form?

# Continental Plate Collision

- Usually, subduction DOES NOT happen when two continental plates collide.
- Less dense than the asthenosphere, both plates collide and crumple.
- This can form mountain ranges.
- Earthquakes are also common.
- The Himalaya formed because of this.



# Transform Boundary

- Plates slide past one another.
- Move in opposite direction or same directions at different rates. (Earthquakes occur.)
- Ex. Pacific Plate slides past North American Plate.
  - San Andreas Fault has many earthquakes



# Review

- <http://www.youtube.com/watch?v=J6oahtWFRIU>

# Exit Ticket

- Draw a diagram of each plate boundary.
- Put one landform that could be found at each of the boundaries.