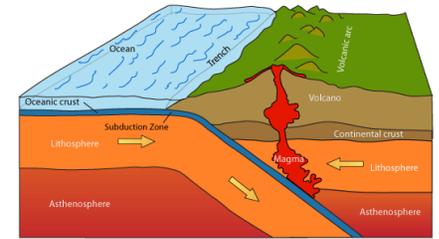


## Study Guide – Tectonic Plates

1. The image to the right shows a

plate boundary that has a **subduction zone** (the oceanic plate subducts).



What is happening to the plate that is going under and deeper into the Earth?

How does that relate to the volcano?

How does this relate to the Ring of Fire on Earth?

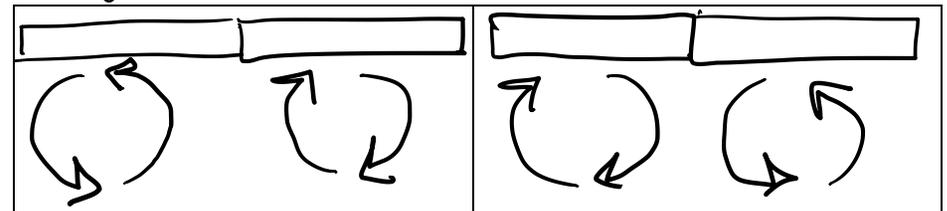


2. Tectonic plate theory includes the idea of convection currents moving the plates around the planet. Convection currents pull plates around the planet. How do they work?

Hot, \_\_\_\_\_ dense magma \_\_\_\_\_ and moves toward the **upper** mantle.

Cold, \_\_\_\_\_ dense magma \_\_\_\_\_ and moves toward the **lower** mantle.

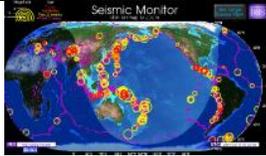
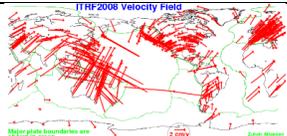
3. Predict which kind of plate boundary (convergent or divergent) is occurring at these two convection currents. Imagine if the magma is pulling the plates toward or away from each other. Draw arrows in **the plates above the convection currents** to show where they are moving.



Glue this side into your notebook



4. The theory of tectonic plates is founded on lots of pieces of evidence. Look at the statements and explain the evidence how it shows that plates exist on the planet and are moving.

What is the fact?	Data	How does the data act as evidence for the fact?
Plates used to be together.		
Plates used to be together.	 The dark areas are where fossils of the same species were found.	
Plates used to be together and had similar climates.	Temperatures in ice cores at the north and south pole have similar patterns.	
Earthquakes occur a lot where plates are moving past each other.	 Each circle shows an earthquake.	
Plates are constantly moving.	 This is a map showing velocities of certain points on the planet from GPS data.	
The plates move apart from each other.	 Pattern created by magnetic stripes along the Mid-Atlantic Ridge south of Iceland.	

5. How is a **hot spot** volcano (like Hawaii) different than what happens at a convergent plate boundary?

6. List the features/events you would see at different plate boundaries. Make sure you understand how convection currents play a role in the movement of the plates and how the features/events happen.

Convergent	Divergent	Transform

7. Draw an image to represent what happens at plate boundaries.

Convergent	Divergent	Transform

8. Sea-floor spreading happens at \_\_\_\_\_ plate boundaries.

- Label on the picture where the oldest and youngest rocks are.
- How does the magnetic reversal show that the sea floor is spreading?

