https://en.wiki2.org/wiki/Rodinia

How has all of this affected the history of the Earth?

When these plates move around over time, they bring the continents together to form **supercontinents**. Above is a diagram of the supercontinent called **Rodinia**, which is believed to have formed about 1.2 billion years ago. **Laurentia**, which can be seen in the middle, is present day North America. This supercontinent broke up about 750 million years ago. The continents continued to move apart, then back together again about 250 million years ago, creating the supercontinent **Pangaea**, seen below, which broke up around 65 million years ago.

https://heavenawaits.wordpress.com/no-more-sea-pangea/

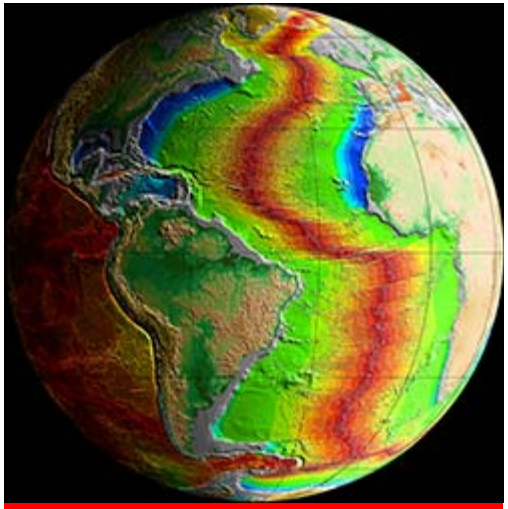
Thanks for visiting the Dunn-Seiler Museum located the Department of Geosciences at Mississippi State University!

About Us

The Dunn-Seiler museum houses everything from mineral and rock collections to fossils, quite a few of which are from right here in Mississippi.

Use your smartphone to scan the QR code to visit our website!

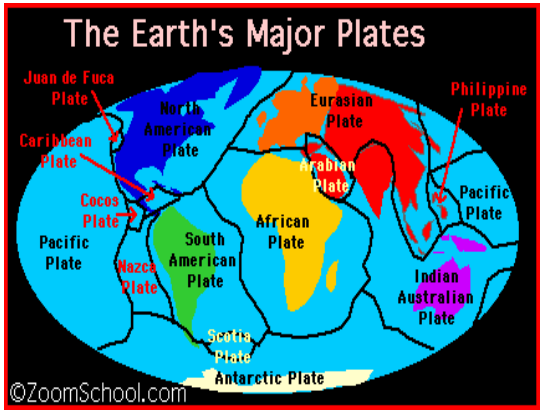
PLATE TECTONICS – A BRIEF HISTORY OF THE EARTH



http://www.soest.hawaii.edu/wessel/podcasts/

PLATE TECTONICS – A BRIEF HISTORY OF THE EARTH

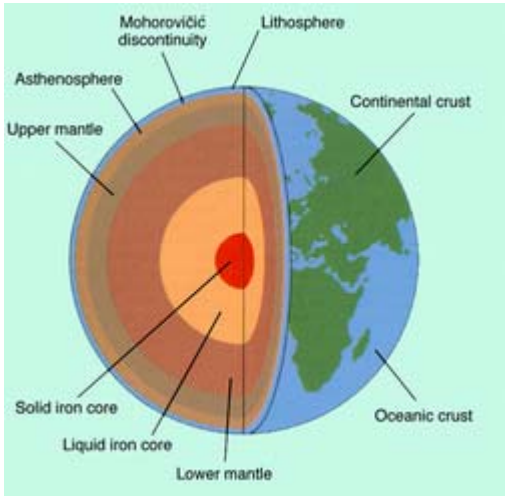
Dunn-Seiler Museum, Mississippi State University



What are plate tectonics?

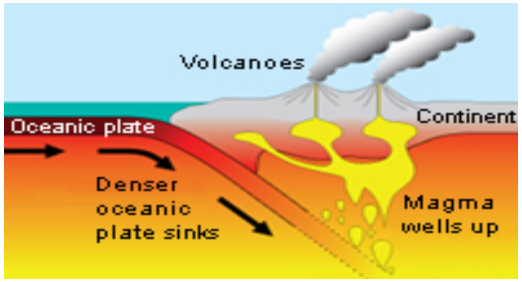
The study of plate tectonics involves a thorough understanding of this dynamic Earth. One must know the composition of the entire planet, from the solid inner core to the top of mountains on the surface. It all starts with the heat from within the Earth, how that heat moves to the surface, and how that heat causes the plates of the planet to move around. Depending on the type of crust and the type of plate boundary, effects of plate tectonics may differ. Everything from lakes, mountains, volcanoes, and earthquakes form because of this movement of plates on the Earth's surface! This brochure will give you some information about how this dynamic Earth is composed, how plates work together, and how all of this has changed the appearance of our Earth over millions and billions of years! The picture above illustrates the different plates of Earth.

How do plate tectonics work?



http://poohdiv4.weebly.com/asthenosphere.html

The Earth has two types of crust: **oceanic** and **continental**. The crust you live on is the continental crust, and the crust below the oceans is the oceanic crust. These two crustal types are split into numerous **plates**. Where these plates meet are called **plate boundaries**. Right underneath these plates lies the **lithosphere**, which is the rocky upper part of the Earth's mantle. The lithosphere sits on top of another layer of the mantle which is made up of very hot flowing rock, called the **asthenosphere**. The heat from the center of the earth is what keeps these layers hot and molten. Keeping that in mind, you can see how these plates move around on top of the mantle! The scientific name for this movement is **continental drift**.



http://www.nhm.ac.uk/nature-online/earth/volcanoes-earthquakes/plate-tectonics/

More about plate boundaries…

The place where two (or even three!) plates meet is called a **plate boundary**. There are three types of plate boundaries:

1. **Convergent boundaries**: This is where two plates move toward one another. When an oceanic and continental crust meet, the oceanic crust moves underneath the continental crust because it is denser (see the above diagram). As the plate gets deeper into the Earth, it begins to melt and magma wells up to the surface, creating volcanoes! Here, oceanic crust is recycled into the mantle. Japan is an example of what forms at this type of boundary. Effects of convergence may be deep earthquakes, a trench in the ocean, or a chain of volcanic islands.

2. **Divergent boundaries**: This is where two plates are moving away from each other. This is very common with oceanic plates, and often occurs in the middle of the ocean. As the plates spread, new lithosphere is brought to the surface and creates more oceanic crust. The most famous example of this is the Mid-Atlantic Ridge. Effects of divergence may be underwater mountains or volcanoes and shallow earthquakes.

3. **Transform boundaries**: This is where two plates simply slide past one another. No new crust is created, nor is any destroyed. The most famous example of this is the San Andreas Fault Zone in California. Earthquakes are the most common effect of transform boundaries.