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| **Science 8**  **Earth Science Unit Review** | **Name: Date: Block:** |

1. List the five pieces of evidence that support Continental Drift Theory.

* Similar fossils on separate continents
* Continents fit together like puzzle pieces
* Age & types of rocks on separate continents
* Mountain chains continue between continents
* Matching Glacial deposits

1. What land mass does Pangaea refer to?

The last super continent that existed approximately 270 million years ago.

1. Complete the following table with the layers of the Earth:

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| --- | --- |
| **Layer** | **State** |
| Crust | Solid |
| Mantle | Solid |
| Outer Core | Liquid |
| Inner Core | Solid |

1. What is a tectonic plate and why does Earth have moving plates while Mars does not?

A tectonic plate is large piece of solid rock that floats on the soft plastic of the mantle. Earth has plate tectonic activity because it is still hot at the core, unlike Mars which cooled a solidified and is therefore no longer geologically active.

1. What is the Mid-Atlantic Ridge? Where is it found? Identify the Mid-Atlantic Ridge on the map below.



The Mid-Atlantic ridge is a large plate boundary that spans from the northern Atlantic Ocean to the southern Atlantic Ocean. It is a result of several plates moving in opposite directions (divergent plate boundary)

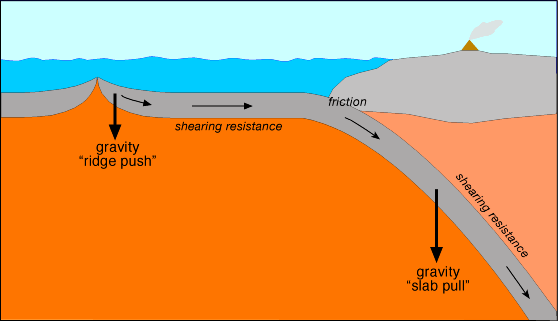
1. Use the diagram of the Mid-Atlantic Ridge below to answer the questions that follow:

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| Macintosh HD:Users:teacher:Dropbox:Screenshots:Screenshot 2016-05-30 16.25.49.png | 1. How does the thickness of the crust at location A compare to the thickness of the crust at location B?   **B** (oceanic crust) is thicker than **A** (continental)   1. Where is the youngest rock located?   **At C** – This is where magma cools and solidifies   1. How does the age of rock at A compare to the age of rock at D?   **About the same age!** Roughly equal distance from the ridge   1. Where is magma most likely to be rising to the surface? |

**At C**! See answer to B

1. What is seafloor spreading? Explain this process using the terms “ridge push” and “slab pull”.

Imagine you are trying to slide a very heavy box across the floor.  It is too heavy to move by yourself, so you enlist the help of a friend.  You tie a rope around the box, which you pull (slab pull) on.  Your friend pushes (ridge push) on the box from behind.  Together, your combined efforts are enough to make the box slide across the floor.  That is all the book is trying to explain, that new ocean floor is "pushing" the old ocean floor from behind, while the old ocean floor is being "pulled" back down into the mantle.  Between the both of them, that section of the ocean floor moves; slowly, mind you, but it does move.



1. What is a geologic hot spot? What happens when a tectonic plate passes over a hot spot?

Random upwelling of magma that pierces a tectonic plate often it will lead to volcanic island arcs like Hawaii.

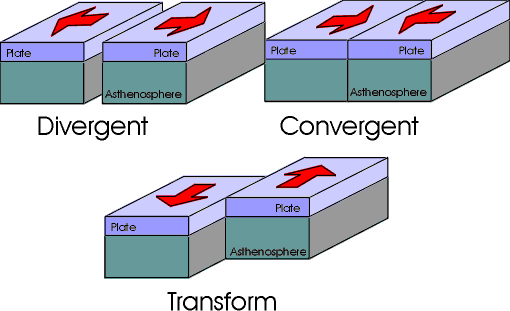
1. Describe the theory of plate tectonics.

The surface of the earth is made up of 7 major (and many more minor) plates that float on the upper mantel. The movement of these plates leads to **geologic features** (Volcanoes, Mountains, Trenches and Ridges) and **geologic events** (Volcanic Eruptions, Earthquakes, Hot Spots).

1. Describe the age of rocks relative to their distance from an ocean ridge at a divergent plate boundary.

As you move AWAY from the boundary the rocks increase in age. This is because the age of a rock starts when it cools and solidifies. As new magma comes up at the ocean ridge it push older rock out and away from the divergent boundary.

1. Name and draw the three main types of tectonic plate boundaries.
   1. Convergent
   2. Divergent
   3. Transform



1. Why does subduction occur at some kinds of tectonic plate boundaries but not at others?

Subduction is a result of converging plate boundaries AND occurs when one plate is more dense than the other.

**Example**: Oceanic Plates (more dense) are subducted beneath a Continental Plate at a convergent boundary

1. Name a mountain range produced by continental-continental plate convergence.

**The Himalaya’s**

1. The diagram below is a cross-section showing different types of tectonic plates and geological features.

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| --- | --- |
| **V** Continental-continental divergence  **S** Trench  **R** Hot spot  **Q** Volcanic island arc  **T** Mid-ocean ridge | Macintosh HD:Users:teacher:Dropbox:Screenshots:Screenshot 2016-05-30 16.16.50.png |

1. Why do earthquakes and volcanoes occur at tectonic plate boundaries?

Earthquakes occur at either a convergent boundary (Oceanic-Oceanic or Oceanic-Continental) or a transform boundary.

At both boundaries the plates attempt to slide pass one another but get caught. Eventually enough energy is stored and the plates violently slip pass one another causing an earthquake.

Volcanoes occur at subduction zones (Oceanic-Oceanic or Oceanic-Continental). As the plates move passed each other the friction causes the denser plate to melt and magma to rise to the surface (through the less dense plate). Ultimately this process creates a volcano.

