Unit 5 Study Guide

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| Layer of the Earth | State of Matter (Solid, Liquid, or Gas) | Composition (What is it made of) | Thickness | Special Features |
| Crust | Solid | Oxygen, silicon, aluminum, Granite | 5 – 100 km | - All life exists here  - Tectonic plates  - Oceanic and Continental Crust |
| Mantle | Solid that acts like a liquid | Iron and Magnesium | 100 km – 3,000 km | - Largest Layer  - Three sections |
| Outer Core | Liquid | Iron and Nickel | 3,000 – 5,200 km | Liquid |
| Inner Core | Solid | Iron and Nickel | 5,200 km – 6,428 km | Solid  Most dense  Hottest |

1. What three things increase as you move from the crust to the inner core?

\_\_Density\_\_ \_\_\_Temperature\_\_ \_\_\_Pressure\_\_

1. What are the layers of the Earth in order (including the ‘spheres’)?
2. \_\_crust\_\_ 2. \_\_Mantle\_\_ 3. \_\_\_Lithosphere\_\_ 4. \_\_asthenosphere\_\_ 5. \_\_mesosphere\_ 6.\_\_\_Outer core\_\_\_ 7. \_\_Inner Core\_\_
3. Explain what convection currents are including why it happens.

\_Convection currents are the driving force for plate tectonics. They occur in the mantle and they occur because when you heat up they become less dense and rise and when the cool off they become more dense and they sink\_\_.

1. Sea floor spreading happens at the \_\_\_mid-ocean ridge\_\_\_\_\_\_\_.
2. Explain Continental Drift  
   \_\_The continents were once all connected in a super continent called Pangea. Convection currents are causing the lithospheric plates to move.\_
3. Where do most earthquakes and volcanoes form? Along the edges of tectonic plates, more specifically The Ring of Fire
4. Explain sea floor spreading

\_\_The process by which new oceanic lithosphere forms as magma rises to the Earth’s surface and solidifies at the mid-ocean ridge\_.

1. The person responsible for the continental drift theory is \_\_Alfred Wagner\_ and he used the following pieces of evidence to support his theory:
   1. \_Jigsaw\_ b.\_\_Geographical Oddities\_\_ c. \_\_\_Fossil Evidence\_\_ d. geologic rock structures
2. The person responsible for the continental drift theory is \_\_Harry Hess\_ and he used the following pieces of evidence to support his theory:
   1. \_molten material\_ b.\_\_age of rocks\_\_\_ c. \_\_magnetic stripes\_\_
3. The continents were once one single land mass or super continent called \_\_Pangea\_\_.

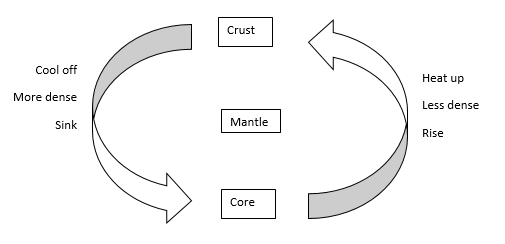
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|  | Describe the Movement of Both Plates and What Occurs When They Interact | What feature is created? |
| **Convergent Boundary** Continental - Continental | The continental plates are running into each other and are folding up on each other. | Mountains |
| **Convergent Boundary** Continental - Oceanic | The oceanic and continental plates are running into each other. The more dense oceanic crust subducts under the less dense continental crust | Volcanoes |
| **Divergent Boundary**  Oceanic - Oceanic | Two oceanic crusts are separating. This specific divergent boundary is called a mid-ocean ridge. This is the location or sea floor spreading | New oceanic crust  Mid-ocean ridge |
| **Transverse Boundary**  Continental - Continental | Two continental crusts are sliding past each other. | Earthquakes  Faults |

9. Explain how fossils could be used as evidence to support continental drift. Fossils can be used to tell what the climate was like in that area in the past. This climate may be different than the current climate, showing that the continent moved closer or further from the equator. Fossils also line up in bands when Pangea is re-connected.

10. Continental crust is \_less\_\_ dense than oceanic crust. This is why \_oceanic\_\_

crust subducts under \_continental\_ crust.

11. The Ring of Fire is an area where a large number of \_\_\_volcanoes\_ and \_\_earthquakes\_ are found. Explain why this is. The Ring of Fire is the direct result of plate tectonics and the movements and collisions of tectonic plates

12. Draw a convection current and label it with less dense, more dense, rise, sink, core, crust, mantle, heat up, and cool off.