Name: \_\_\_\_\_\_\_\_\_\_\_\_\_**KEY**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period: \_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Layers and Plates 6.E.2.1-6.E.2.2 Study Guide

1. Draw and Label a Model of the Earth. Include the 4 major layers, their composition, thickest/thinnest and most and least dense

**Crust**: Two types: oceanic and continental. Oceanic: More dense, thinner, made mostly of basalt. Solid. Continental: lease dense, made mostly of granite. Thicker than oceanic crust.

**Mantle:** thickest layer, made mostly of super-heated “plastic-like” silicate rock, more dense than the crust, but less dense than the core

**Outer Core:** thicker than the crust, but thinner than the mantle. 2nd most dense layer. Made of liquid iron and nickel

**Inner Core:** Innermost layer. Made mostly of solid iron and nickel. Most dense layer of the Earth

2. What 2 layers have convection currents and what do they cause:

1. Mantle: The convection currents here cause the motion of the tectonic plates. \_\_\_\_\_\_\_\_\_\_

2. Outer Core: Scientists believe the convection currents here cause Earth’s magnetic field. \_\_

3. Explain each layer in words (clues), 3 clues per layer

Answers may vary!

Crust: \_Lithosphere, Tectonic Plates, “What we see” \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Mantle: \_Convection Currents, Plastic, most of Earth’s mass\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Outer Core: \_\_Liquid, Very Dense, Convection Currents \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Inner Core: \_\_Most dense, Solid Heavy Metals, Center of the Earth \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4. What does subduction mean? \_Subduction is when one tectonic plates is pushed beneath another less dense plate. This occurs at convergent boundaries and can cause volcanic mountains (if oceanic-continental) or island arcs (if oceanic-oceanic).\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5. Why is convergent collision called continental collision? What is created at that boundary?

\_Convergent collision is sometimes referred to as continental collision because in a convergent boundary, two plates are colliding, or coming together. When two continental plates come together, crust is being destroyed. Because both plates have the same density, they get pushed together to form mountains instead of one subducting beneath the other. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

6. At what rate do plates move a year? \_Very slowly- only a few inches per year\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

7. What 2 things cause the Earth’s magnetic field?

1. \_Convection currents in the outer core\_\_\_\_\_\_\_\_\_\_

2. \_Earth spinning on its axis. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

8. Who studies earthquakes? \_seismologists\_\_\_\_\_\_\_\_\_\_\_\_

9. What are the 3 types of seismic waves? \_Primary (P) Waves, Secondary (S) Waves, and Surface Waves

10. As you travel to the center of the Earth, what 3 things would occur?

1. \_The density of the surrounding layers increases.\_

2. \_The pressure will increase. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. \_The temperature will increase. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Complete the Chart

|  |  |  |  |
| --- | --- | --- | --- |
| **Boundary Type** | **Plate Movement** | **Landforms Created** | **Effect on Crust** |
| **Divergent** | Plates are moving apart | Mid-Ocean Ridge, Rift Valley, Ocean Basins, Volcanoes | Crust is being created |
| **Transform** | Plates are moving parallel to each other in opposite directions | N/A, earthquakes are frequent here | Neither |
| **Convergent Collision** | Plates are moving together | Mountains | Crust is being destroyed |
| **Convergent Subduction** | Plates are moving together | Volcanic Mountains, Island Arcs, Deep Ocean Trench | Crust is being destroyed |

\*\*STUDENTS WILL NEED TO BE ABLE TO RECOGNIZE THESE BOUNDARIES IN A PICTURE/DIAGRAM!\*\*