Study Guide: Plate tectonics 2/soil Rocks/Weathering and Erosion Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Plate Tectonics:**

1. What is the lithosphere?
2. What is a tectonic plate?
3. What is a convergent boundary?
4. What is a divergent boundary?
5. What is a transform boundary?
6. What is weathering?
7. What is erosion?
8. The lithosphere is broken into what?
9. What are the theories of Continental Drift & Plate Tectonics?
10. Why does subduction occur (you better use the term density)?
11. Where and why do most earthquakes and volcanoes occur?
12. What forms as a result of a divergent boundary?
13. What forms as a result of a transform boundary?
14. What forms as the result of a convergent boundary?
15. What do we find in areas with tectonic activity?

**Really Know & Understand Rocks and Soil:**

1. How are igneous rocks formed?
2. How are sedimentary rocks formed?
3. How are metamorphic rocks formed?
4. What are the characteristics of fertile soil?
5. What makes soil able to hold water?
6. What climate type produces soil the fastest?
7. Describe the four soil conservation methods:

-crop rotation,

-contour plowing,

-terraces,

-conservation tillage.

Study Guide: Plate tectonics 1 /Heat/Earthquakes and volcanoes Name\_\_\_\_\_**KEY\_\_\_\_\_\_\_\_\_\_**

**Know & Understand Heat Energy**:

1. What is heat? How does energy transfer as heat? **Energy hot to cold, conduction, convection, and radiation.**
2. What is density? **The amount of matter in a given space- heavy for its volume**
3. What is equilibrium and what does it have to do with heat? **Temperature is balanced, same. Heat will transfer until the temperature is the same.**
4. What are the three ways that energy moves as heat? **Conduction, convection, radiation**
5. How does convection make our plates move? (include the term density) **Convection occurs in the mantle. As magma heats it becomes less dense and rises. As it cools nears the surface it becomes denser and sinks. This creates a circular convection current. This moving current drags the plates with it.**
6. If you put an ice cube in the refrigerator, it will melt. In which direction is heat moving? **Hot to cold, from the refrigerator to the ice**
7. If you touch a cold metal flagpole, in which direction will heat move? **Hot to cold, from your hand to the flagpole.**

**Plate Tectonics:**

1. What is the lithosphere? **Crust and upper mantle**
2. What is a tectonic plate? **Piece of the lithosphere**
3. What is a volcano? **An opening in the crust where lava, gas, steam, fragments, and ash come out.**
4. What is magma? Molten rock beneath Earth’s surface.
5. What is an earthquake? **The shaking of the earth’s surface caused by the release of tension and stress from within the earth**.
6. What is the epicenter and focus of an earthquake? **Focus is the point underground where the earthquake originates, epicenter is the point at the surface of the earth directly above the focus.**
7. What is a fault? **A crack in the crust where there is movement**
8. What is a seismic wave? The vibrations caused by an earthquake.
9. The lithosphere is broken into what? Tectonic plates
10. Can you list the earth layers and describe each one? **Crust- thin, cooled rock- least dense layer. Lithosphere- layer of hard rigid rock- makes up tectonic plates. Asthenospere- hot rock close to melting. Mantle- thickest layer. Outer core- layer of molten iron and nickel. Inner Core- solid ball of iron and nickel- densest layer.**
11. What are the theories of Continental Drift & Plate Tectonics? **The earth’s crust is cracked into plates that move, the earth was once one supercontinent called pangaea**.
12. List 3 pieces of evidence that prove our tectonic plates move. **Fossils-similar fossils in Africa and South America, geology- same rocks in Scotland and Appalachian Mountains, climate- scratches on rocks in South Africa from glaciers and they found fossils of tropical plants in Greenland, age of seafloor**
13. Who was Wegener? **German scientist who proposed the theory of continental drift**
14. Where and why do most earthquakes and volcanoes occur? **They occur at plate boundaries because that is where stress builds up.**
15. What are smaller earthquakes that occur shortly after a larger earthquake? **Aftershocks**
16. What do we find in areas with tectonic activity? **Earthquakes**
17. Which kind of earthquake wave causes the most damage? **Surface wave**
18. How do scientists know what the inside of the Earth looks like? **They examine how seismic** **waves move through the earth.**

**In each situation, choose which of the three types of heat transfer is being illustrated.**

1. Getting sunburn while playing volleyball at the beach**.- radiation**
2. The circling current of heat in a pot of boiling water.- **convection**
3. Placing a shovel in a pile of red hot coals.- **conduction**