PLATE TECTONICS STUDY GUIDE

Name_____ Class_____

1. Define **plate:**

2. Define **Theory of Plate Tectonics**:

3. Define **lithosphere**:

   The lithosphere is _____ but broken into _____.

   The composition of the lithosphere is like that of _____.

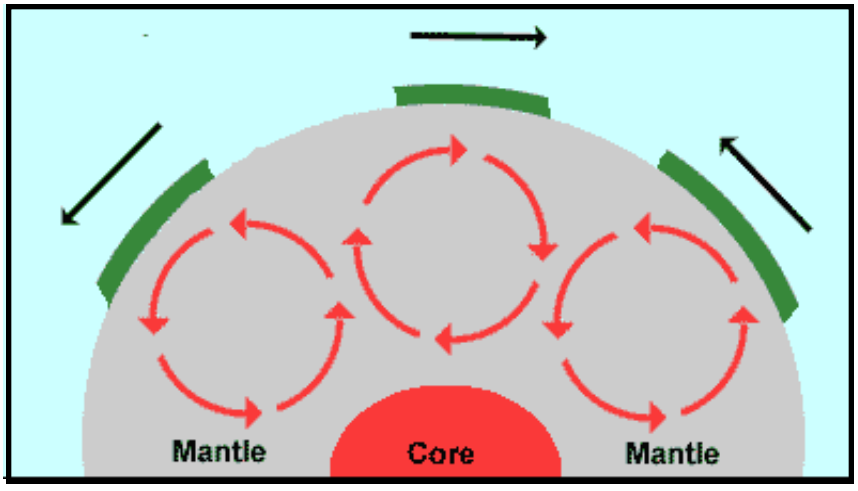
   Because granite is _____ dense than basalt, continents _____ on top of the lithosphere.

4. Define **asthenosphere**:

   Why is the asthenosphere so important to the **Theory of Plate Tectonics**?

5. Label this diagram with these words:

   convection current, moving toward, moving apart, expands and rises, cools and sinks



6. How do plates move where convection currents are rising?

7. How do plates move where convection currents are sinking?

8. Define **Theory of Continental Drift**:

Who proposed this theory?

9. List some of Wegener's evidence:
   a.
   b.
   c.
   d.

10. Why do earthquakes and volcanoes occur at plate boundaries?

11. Where is the largest area of active earthquakes and volcanoes in the world?

12. What is the pattern of magnetic polarity reversal?
    Describe the age of the ocean floor rocks relative to the spreading centers.

13. What does seafloor spreading have to to with the Theory of Continental Drift?

14. How are plates moving at **diverging boundaries**?

What else is this called?

What two features occur at mid-ocean ridges?

15. How are plates moving at **sliding boundaries**?

Give an example of a sliding boundary:

16. How are plates moving at **converging boundaries**?

What are two different convergent boundaries and a feature of each?

Type	Feature
a.	
b.	

Name a feature that occurs at each type of convergent boundary.

17. **How are subduction boundaries related to mid-ocean ridges**?

Answers:

1. Plate: a piece of the crust. 2. Theory of Plate Tectonics - theory that explains the formation/movement of the Earth's crust. 3. Lithosphere: outermost solid part of the crust. solid, pieces, basalt, more dense, float 4. Asthenosphere - the partially melted part of the mantle that contains convection currents that move the crustal plates. 5. circular arrows = convection currents, left 2 surface arrows = moving apart, right 2 surface arrows = moving toward, circular arrows moving toward surface = expands and rises, circular arrows moving away from surface = cools and sinks. 6. Plates move away from each other when currents are rising. 7. and toward each other when currents are sinking. 8. Theory of Continental Drift - Wegener's theory that says all of today's continents were once part on one supercontinent which broke apart and the continents then moved into their present positions. 9. rocks, mountains, glaciers, continental shape, fossils, climate. 10. earthquakes and volcanoes occur on plate boundaries because that's where massive amounts of energy are released where the broken edges move against each other. 11. Pacific Plate edges = Ring of Fire = most active earthquake and volcano region in the world. 12. pattern of magnetic polarity = reversals of polarity "recorded" in the rock, and identical on each side of the rift valley. 13. Seafloor spreading shows how the plates can push away from each other and make one ocean larger each year, moving the continents on the plates farther away from each other. 14. diverging = moving apart; Seafloor Spreading; rift valley, ridge volcanoes. 15. Sliding = moving past each other; San Andreas Fault Zone. 16. converging = moving together; a. subduction = trench, volcanic mtns; b. collision = folded mountains. 17. as the Atlantic Ocean increases in size at mid-ocean ridges, the Pacific Ocean is getting smaller in response as plates subduct under other plates to equalize.

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