Name: _____Period: ____

Plate Tectonics Study Guide

This study guide is based on the objectives that you were given at the start of the unit. The objectives appear in a box and are followed by study questions. **Answer each question.** You do not need to use complete sentences, but should write enough details to help you study for the test.

Page: Learning Goal:
____ 1. List characteristics of a model. Tell how they are developed, what makes them useful, and what happens if they are not accurate. Explain the difference between a physical and a mental model: give examples of each.

1. What two things are models based on?

2. What are they useful for?

3. What happens if a model is not accurate? (What do you do 1st? 2nd?)

4. What is the difference between mental and physical models?

5. Give an example of a physical model:

6. Give an example of a mental model:

Page(s): Learning Goal:
____ 2. Describe the Shrinking Earth Theory. Explain how new ideas and technology combined to replace it with the Theory of Plate Tectonics.

7. According to the "Shrinking Earth Theory", why was the Earth's surface "wrinkled".

8. What major predictions did the "Shrinking Earth Theory" make about mountains, earthquakes, and volcanoes?

9. According to Alfred Wegener's theory of Continental Drift, what causes mountains to form on Earth's surface?

10. What evidence did Alfred Wegener use to try to prove the theory of Continental drift was correct? (Name at least 3 types of evidence.)

11. Why didn't other scientists accept the theory of Continental Drift?

12. Describe how technology was used to prove that the predictions of the "Shrinking Earth Theory" were incorrect.

-seismographs:

-GPS:

-Sonar:

Page(s): Learning Goal:
____ 3. Analyze the evidence that lithospheric plate movements occur.

13. What does the theory of Plate Tectonics state?

14. According to the theory, what causes the plates to move?

15. Describe the evidence that was used to prove this theory (6).

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Page(s): Learning Goal:
____ 4. Describe the properties and composition of the crust, mantle, and core.

16. What evidence did scientists use to figure out what the inside of the Earth was like? (2)

Crust:

17. What is its thickness and state of matter?

18. Where is the crust the thickest?

19. Where it the crust the thinnest?

Mantle:

20. What is its total thickness?

21. Tell what forms the lithosphere and what its “state of matter” is.

22. Describe the lithosphere:

23. Describe the asthenosphere:

Core:

24. Tell what the inner and outer cores are made of. Describe the difference between the two layers.

Page(s): Learning Goal:
_____ 5. Tell what convection currents are and where they occur. Explain how they cause lithospheric plates to move across Earth’s surface.

25. Where are convection currents located?

26. Describe how convection currents work. (Begin at the core and tell what happens when the materials heat and then cool).

27. Tell how the currents move the pieces of the crust around on the surface of the Earth.

Page(s): Learning Goal:
_____ 6. Describe plate movement at convergent, divergent, and transform boundaries. Explain how the different plate boundaries form mountains, faults, rift valleys, trenches, and volcanoes.

28. Tell the direction that plates are moving at each of the three types of boundary.

Convergent Divergent Transform

29. What two factors determine the type of landform created at plate boundaries?

30. Describe the two plate types: (Include thickness, density, and what they are made of)

Oceanic-

Continental-

31. Describe how density determines how a plate will behave at a plate boundary. (What will dense plates always do? What will less dense plates do?)

32. What landform and type of event are common along transform boundaries?

33. Draw a diagram that shows what happens at the boundaries for each of the six boundary types. Include the types of crust, direction of movement, and landforms created at each boundary. (See the example.)

Oceanic-oceanic convergence	Oceanic-continental convergence	Continental-continental convergence
Oceanic-oceanic divergence	Continental-continental divergence	Transform boundary