

Name: \_\_\_\_\_ Period: \_\_\_\_\_ Date: \_\_\_\_\_

Ms. Randall Marine Science

Continental Drift and Plate Tectonics Web quest

### **Part A: Continental Drift**

Follow the links: Answer the following questions.

<http://www.enchantedlearning.com/subjects/dinosaurs/glossary/Contdrift.shtml>

<http://www.divediscover.who.edu/tectonics/pangea-animation.html>

<http://kids.britannica.com/comptons/art-182286/Biological-and-geological-similarities-between-continents-provide-evidence-of-continental>

<http://sciencelearn.org.nz/Contexts/Icy-Ecosystems/Science-Ideas-and-Concepts/Continental-drift>

1. What does the Theory of Continental Drift state?

**Earth's crust slowly drifts atop a liquid core of magma**

2. What is the name of the scientist that proposed the Theory of Continental Drift?

**Alfred Wegener**

3. What was Pangaea?

**Super continent meaning "All-Earth"**

4. What are the names of the two continents that Pangaea separated into?

**Laurasia and Gondwandand**

5. How do the continental coastlines support the Theory of Continental Drift (Pangaea Theory)?

**Fit like puzzle pieces**

6. Explain how fossil distribution supports the Theory of Continental drift.

**Similar fossils such as Trilobites are found on opposite continents**

7. What other evidence supports the Theory of Continental Drift?

- Record records show matching layers, mountain ranges
- Glacial striations match between rock continents
- Magnetic records left in rocks show polar flipping and magnetic reversals

## Part B: Convection Current

Follow the links: Answer the following questions.

<https://www.khanacademy.org/partner-content/amnh/earthquakes-and-volcanoes/plate-tectonics/a/plates-on-the-move>

8. What are convection currents?

Solids, liquids, gases heated will expand and become less dense and rise as it cools causing it to sink

9. In which of Earth's layers do convection currents happen?

Mantle

10. When convection currents flow in the mantle, they also move the \_\_\_\_\_.

Continents and seafloor

## Part C: Plate Tectonics

Watch this: <http://oceanexplorer.noaa.gov/edu/learning/player/lesson01.html>

Follow the links: Answer the following questions <http://pubs.usgs.gov/gip/dynamic/dynamic.html>

11. What is a “plate” in geological terms?

### Large rigid slabs of solid rock

12. What does the Theory of Plate Tectonics state?

Earth’s outermost layer is fragmented into a dozen or more large and small plates that are moving relative to one another on top of the magma below

13. What is the name of the theory that led to the development of the Theory of Plate Tectonics?

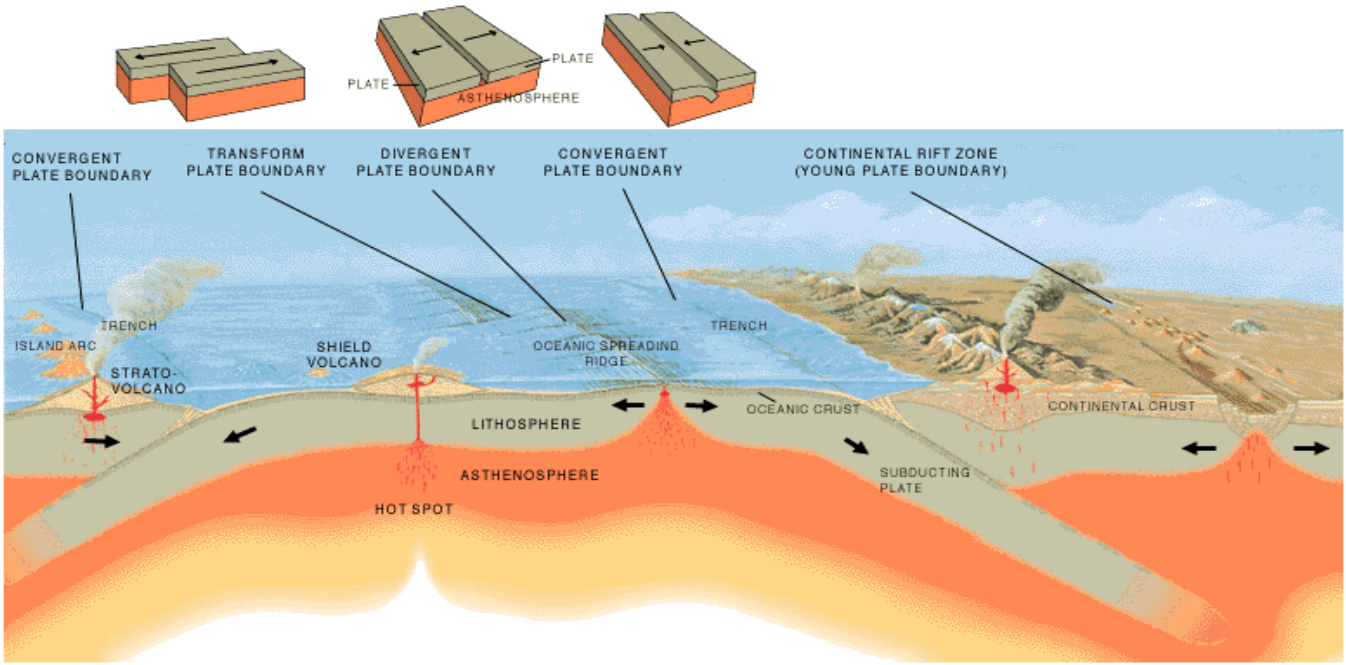
### Theory of continental drift

Click the back arrow of Internet Explorer to return to the homepage of <http://pubs.usgs.gov/gip/dynamic/dynamic.html>. Click on the “[Understanding Plate Motions](#)” icon on this website.

14. What are the four types of plate boundaries?

- Divergent boundaries -- where new crust is generated as the plates pull away from each other.
- Convergent boundaries -- where crust is destroyed as one plate dives under another.
- Transform boundaries -- where crust is neither produced nor destroyed as the plates slide horizontally past each other.
- Plate boundary zones -- broad belts in which boundaries are not well defined and the effects of plate interaction are unclear.

15. Click on Illustration of the Main [Types of Plate Boundaries](#) and label the diagram.17–21



**Part D: Plate Tectonics: Types of Boundaries: Divergent boundaries**

Click the back arrow once on the Internet Explorer screen to move back one page. Scroll down to [Divergent Boundaries](#).

Finish the following sentence:

16. Divergent boundaries occur along spreading centers where

Plates are moving apart and new crust is created by magma pushing up from the mantle.

Click on the link: [Mid-Atlantic Ridge](#)

17. What is shown in this picture?

**Ridge that splits nearly the entire Atlantic Ocean**

18. What type of plate boundary is it?

**Divergent**

19. Where is it located?

**Atlantic ocean basin**

## Part E: Plate Tectonics: Types of Boundaries: Convergent Boundaries

Scroll down to: [Convergent Boundaries](#).

20. What is the location where sinking of a plate occurs is called?

### Subduction zone

21. The type of convergence -- called by some a very slow "collision" -- that takes place between plates depends on the kind of lithosphere involved. Convergence can occur between what types of plates?

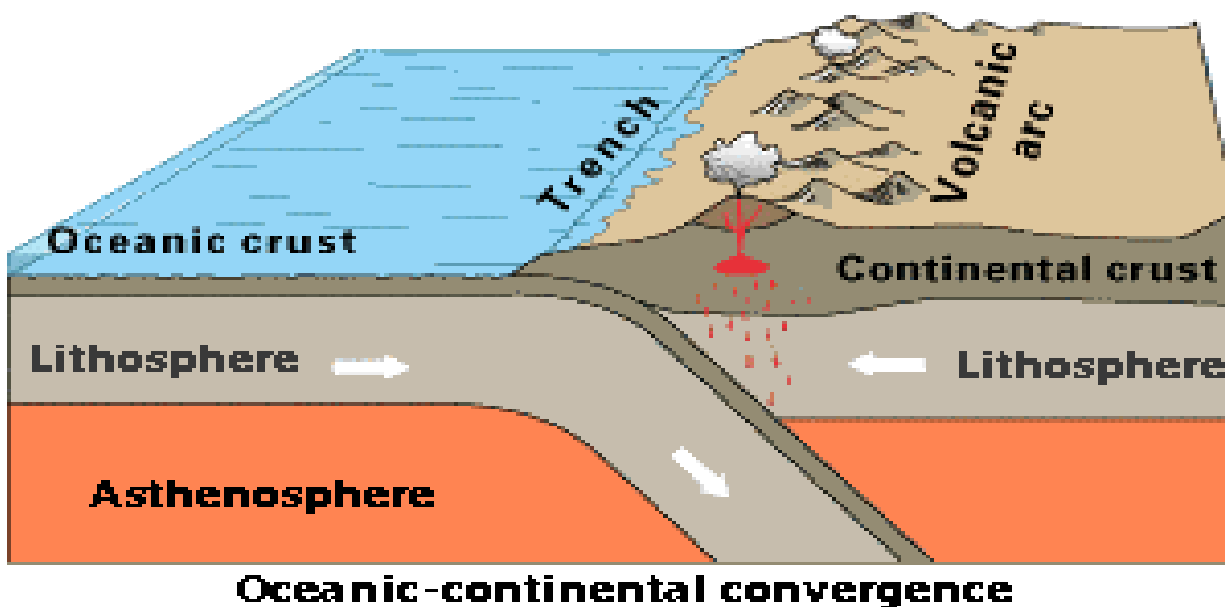
- a. **Oceanic-continental**
- b. **Oceanic-oceanic**
- c. **Continental-continental**

Scroll down to: [Oceanic-continental convergence](#)

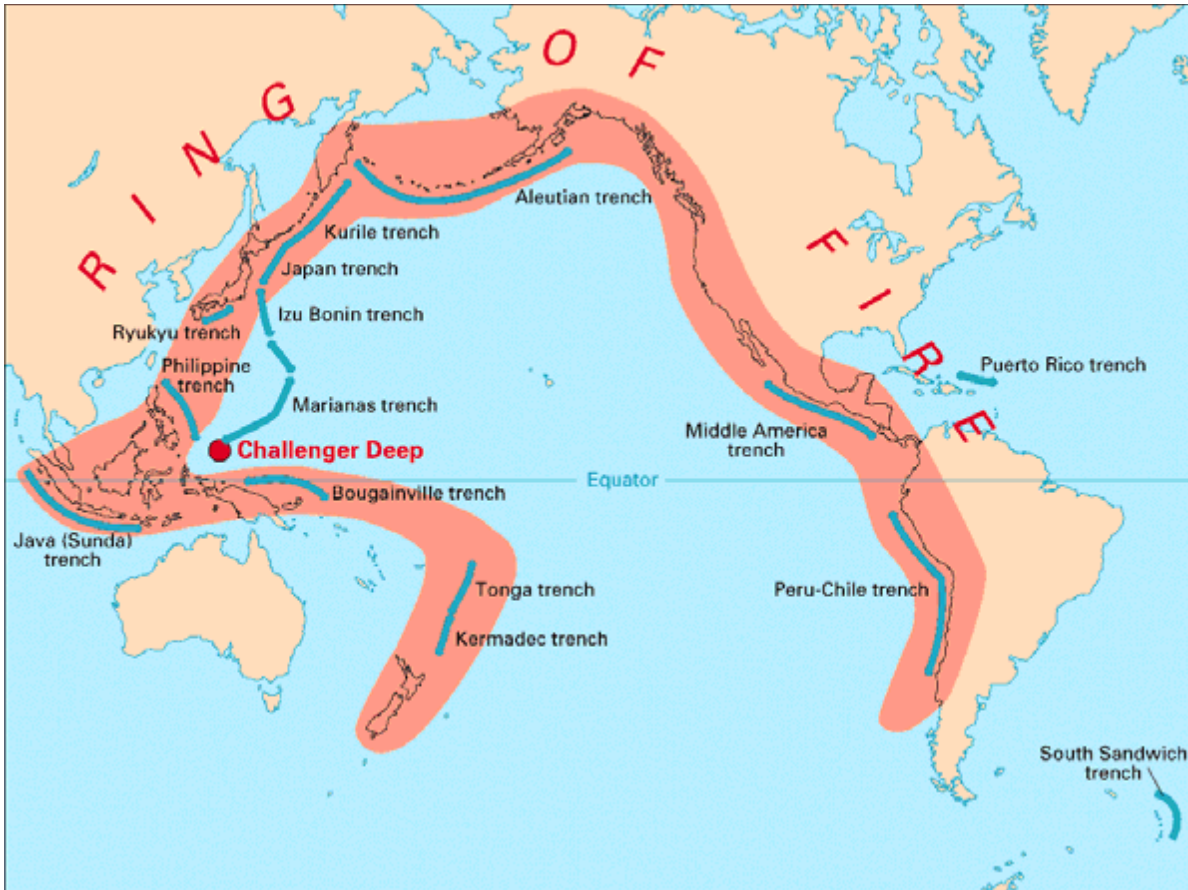
22. Off the coast of South America along the Peru-Chile trench, the oceanic Nazca Plate is pushing into and being subducted under the continental part of the South American Plate creating what?

### Earthquakes

Look at the diagram under the Oceanic-continental convergence information: Label the following diagram.



Click on the [Ring of Fire](#)



23. What is the ring of fire?

**Volcanic arcs and oceanic trenches partly encircling the Pacific basin**

24. The Ring of fire results in frequent what?

**Earthquakes and volcanic eruptions**

25. The West coast of the United States has frequent volcanoes, use the ring of fire to explain why.

**Trenches in the Pacific Ocean-the Ring of Fire runs along the west coast causing volcanic eruptions**

Scroll down to [Oceanic-Oceanic convergence](#)

26. When two oceanic plates converge, one is usually subducted under the other what is formed?

Trenches and volcanoes create island arcs

Marianas Trench is an example

Scroll down to: [Continental-continental convergence](#)

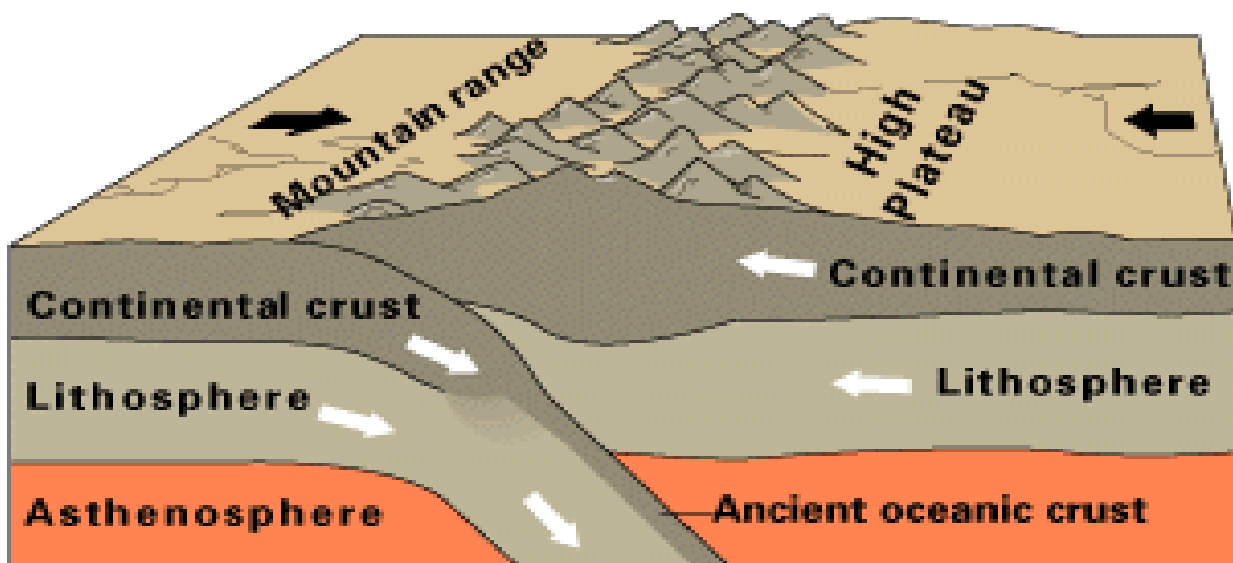
27. What mountain range demonstrates one of the most visible and spectacular consequences of plate tectonics?

Himalayans

28. What happens when two continents meet head-on, meet head-on and neither is subducted?

Crust buckles and pushed upwards or sideways

Look at the diagram under the Continental-continental information: Label diagram.



**Continental-continental convergence**



## Part F: Plate Tectonics: Types of Boundaries: Transform Boundary

Scroll down to: [Transform Boundaries:](#)

48. The zone between two plates sliding horizontally past one another is called a transform-fault boundary, or simply a \_\_\_\_\_ **transform boundary** \_\_\_\_\_  
\_\_\_\_\_.

Click on the diagram San Andreas fault:

49. The picture is an aerial view of what?

**San Andreas fault**

50. Make three observations about the picture

**Answers will vary**

51. What type of boundary does it results from?

**Transform**