Name _____
Date _____ Period ____

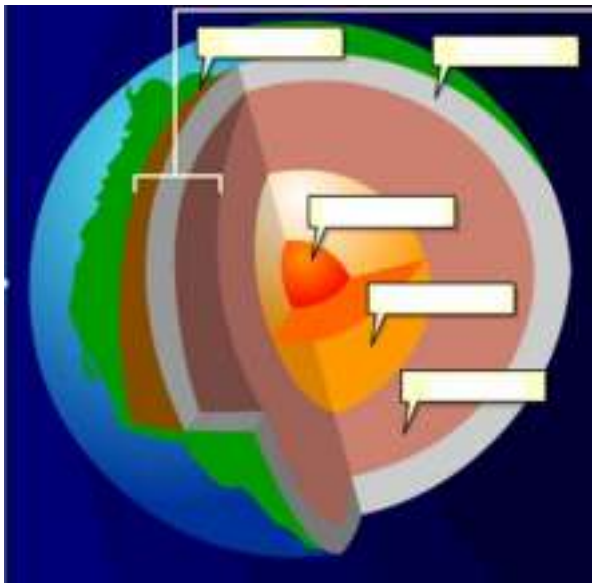
Plate Tectonics

Use the following link to find these answers:

Dynamic Earth Interactive - Annenberg Learner

Part I : Introduction and Earth's Structure

1. Label the layers of Earth in the diagram below.



2. The lithosphere is made up of the _____ and a tiny bit of the _____ _____. We

3. The plates of the lithosphere move (or float) on this hot, malleable _____ _____ zone in the upper mantle, directly underneath the lithosphere. This is known as the _____.

4. The layer of Earth that is the only liquid layer is the _____ _____.

Part II. Plate Tectonics.

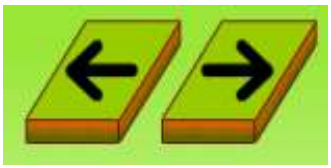
1. True or False? Image A depicts what Earth looks like today. (circle the correct answer)

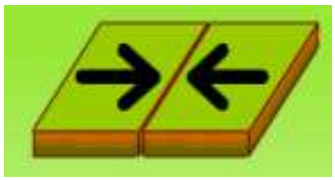
2. What did Earth look like 250 million years ago? The continents of Earth were clustered together in formation that scientists named _____. The scientist that named the landmass “Pangaea” was a German scientist by the name of _____ _____ . He theorized that “Pangaea" split apart and the different landmasses, or continents, drifted to their current locations on the globe. Wegener’s theories of plate movement became the basis for the development of the theory of _____ _____.

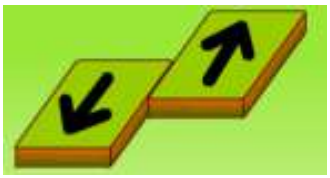
3. Order the images of Earth’s plates in order from oldest or earliest (1) to most recent (5).

Part III. Plates and Boundaries.

1. The place where the two plates meet is called a _____.
2. Boundaries have different names depending on how the two plates are moving in relationship to each other.
3. If two plates are pushing towards each other it is called a _____.
4. If two plates are moving apart from each other it is called a _____.
5. If two plates are sliding past each other it is called a _____.
6. Label the type of boundary depicted in each image below.

_____ 

_____ 

_____ 

Plates and Boundaries Challenge. Follow directions for the challenge.

Record your results below:

Part I. Number of correctly placed plates = _____

Part II. Number of boundary types correctly labeled = _____

Part IV. Slip, Slide, and Collide.

1. At **convergent boundaries**, tectonic plates _____ with each other. The events that occur at these boundaries are linked to the types of plates (oceanic or _____) that are interacting.

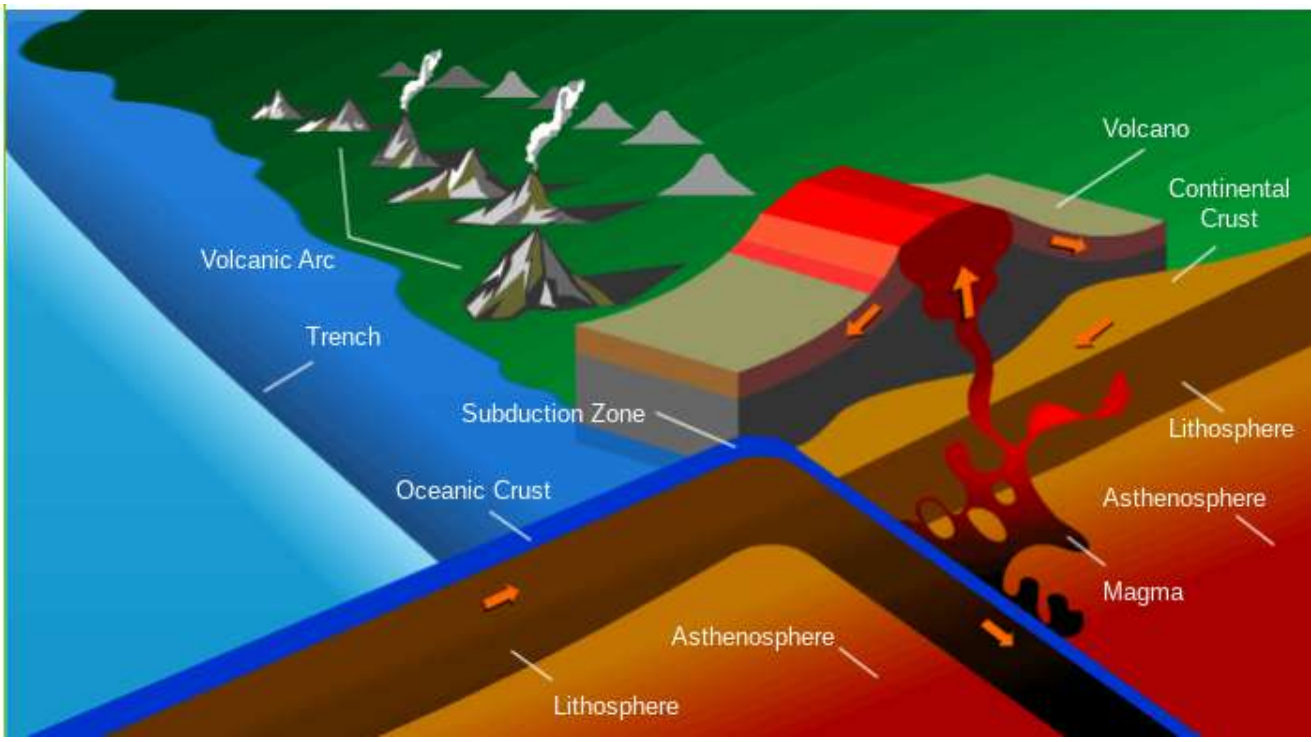
Subduction Zones and Volcanoes

2. At some convergent boundaries, an oceanic plate collides with a continental plate. Oceanic crust tends to be _____ and _____ than continental crust, so the denser oceanic crust gets bent and pulled under, or _____, beneath the lighter and thicker continental crust. This forms what is called a **subduction zone**. As the oceanic crust sinks, a deep oceanic _____, or valley, is formed at the edge of the continent. The crust continues to be forced deeper into the earth, where high heat and pressure cause trapped water and other gasses to be released from it. This, in turn, makes the base of the crust melt, forming _____.
3. The magma formed at a subduction zone rises up toward the earth's surface and builds up

in magma chambers, where it feeds and creates _____ on the overriding plate. When this magma finds its way to the surface through a vent in the crust, the volcano erupts, expelling _____ and _____. An example of this is the band of active volcanoes that encircle the Pacific Ocean, often referred to as the Ring of Fire.

Roll your mouse over the image to find the definitions of the words below:

4. What type of boundary is in the picture? _____



5. Subduction Zone – _____

6. Magma - _____

7. Trench - _____

8. Volcano - _____

9. Volcanic Arc - _____

10. A subduction zone is also generated when two oceanic plates collide — the older plate is

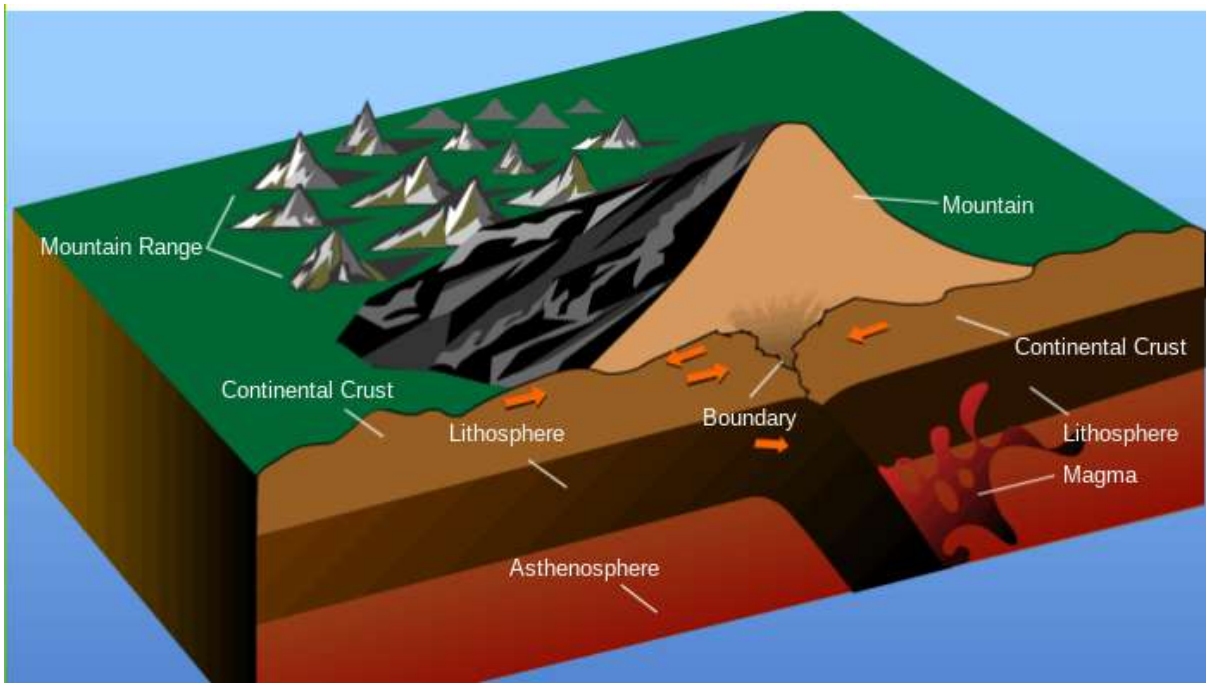
forced under the _____ one, and it leads to the formation of chains of volcanic islands known as _____ _____.

Collision Zones and Mountains

11. What happens when two continental plates collide? Because the rock making up continental plates is generally lighter and less dense than oceanic rock, it is too light to get pulled under the earth and turned into magma. Instead, a collision between two continental plates crunches and folds the rock at the boundary, lifting it up and leading to the formation of _____ .

Roll your mouse over the image to find the definitions of the words below:

12. What type of crust converges in the image below? _____

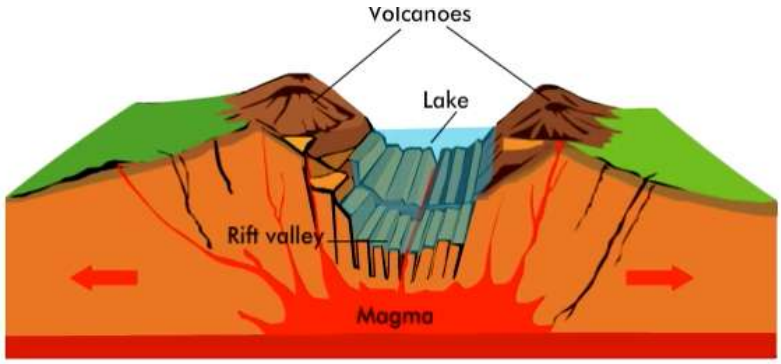


13. Continental Crust - _____

14. Mountain - _____

15. At **divergent boundaries**, tectonic plates are moving _____ from each other. One result of huge masses of crust moving apart is _____ spreading. This occurs when two plates made of oceanic crust pull apart. A crack in the ocean floor appears and then magma oozes up from the mantle to fill in the space between the plates, forming a raised ridge called a _____ _____. The magma also spreads outward, forming _____ocean floor and _____ oceanic crust.

16. When two _____ plates diverge, a valley-like rift develops. This _____ is a dropped zone where the plates are pulling apart. As the crust widens and thins, valleys form in and around the area, as do _____, which may become increasingly active. Early in the rift formation, streams and rivers flow into the low valleys and long, narrow lakes can be created. Eventually, the widening crust along the divergent boundary may become thin enough that a piece of the continent breaks off, forming a new tectonic plate.



17. At **transform boundaries**, tectonic plates are not moving directly toward or directly away from each other. Instead, two tectonic plates _____ past each other in a horizontal direction. This kind of boundary results in a _____. A fault is a crack or _____ in the earth's crust that is associated with this movement.

18. Transform boundaries and the resulting faults produce many _____ because edges of tectonic plates are jagged rather than _____. As the plates grind past each other, the jagged edges strike each other, catch, and stick, "locking" the plates in place for a time. Because the plates are locked together without moving, a lot of _____ builds up at the fault line. This stress is released in quick bursts when the plates suddenly slip into new positions. The sudden movement is what we feel as the shaking and trembling of an earthquake. The motion of the plates at a transform boundary has given this type of fault another name, a _____ _____. The

best-studied strike-slip fault is the San Andreas Fault in _____.

Complete the Plate Interactions Challenge and Test Skills questions.

My score for Plate Interactions Challenge = _____

My score for Test Skills questions = _____out of 30 or ____%____