

MR. ANDERSEN PLATE TECTONICS WEB TUTORIAL

Background: Our Earth is composed of four layers: crust, mantle, outer core, and inner core. The crust layer and the top part of the mantle is called the **lithosphere**. The lithosphere is broken up into plates that move around on Earth. Los Angeles is currently found on the Pacific plate while Las Vegas, Nevada is on the North American plate. Plates move at different speeds, but move very slowly. Our Earth's geographical features have been shaped by the interactions of these plates through time.

Directions: Go to <http://www.bozemanscience.com/plate-tectonics> and watch Mr. Andersen's tutorial on Plate Tectonics. While watching, answer the questions below using complete sentences.

- 1) Who was the first man to state that the continents were moving and the plates were connected together?

- 2) What is the "best piece of evidence" for plate tectonics?

- 3) What is happening in the middle of the Atlantic ocean?

- 4) Where do earthquakes occur? What is the Ring of Fire?

- 5) The San Andreas fault is a transform fault. Describe the motion occurring at a transform fault.

- 6) What are continental plates made of? Describe their characteristics.

- 7) What are oceanic plates made of? Describe their characteristics.

- 8) What happens when a continental plate hits an ocean plate (AKA **subduction**)?

- 9) How are volcanoes made from this interaction (use #8)?

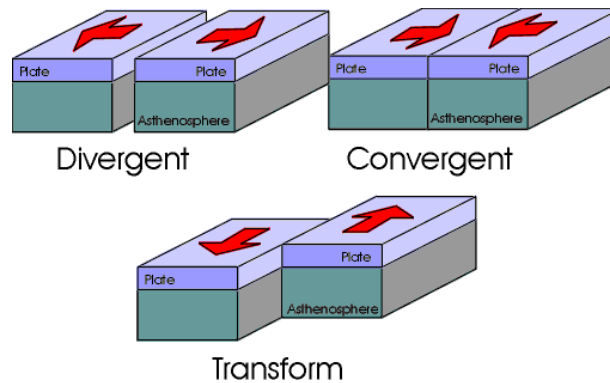
- 10) What is created when two continental plates collide (**convergent plates**)? Give an example where this is occurring on Earth.

11) What is created when two plates pull apart (**divergent plates**). Give an example where this is occurring on Earth.

12) What is sea floor spreading?

13) What causes plates to move?

14) What is a hot spot? Give an example where this is occurring on Earth.



Type of Margin	Divergent	Convergent	Transform
Motion	Spreading	Subduction	Lateral sliding
Effect	Constructive (oceanic lithosphere created)	Destructive (oceanic lithosphere destroyed)	Conservative (lithosphere neither created or destroyed)
Topography	Ridge/Rift	Trench	No major effect
Volcanic activity?	Yes	Yes	No

The bottom part of the image contains three detailed cross-section diagrams labeled (a), (b), and (c). Diagram (a) shows a divergent boundary with a 'Ridge' on the surface, magma rising from the 'Asthenosphere' through the 'Lithosphere'. Diagram (b) shows a convergent boundary with a 'Trench' and a 'Volcanoes (volcanic arc)' on the surface, and 'Earthquakes' indicated by stars along the subduction zone. Diagram (c) shows a transform boundary with 'Earthquakes within crust' indicated by stars along the fault line.