

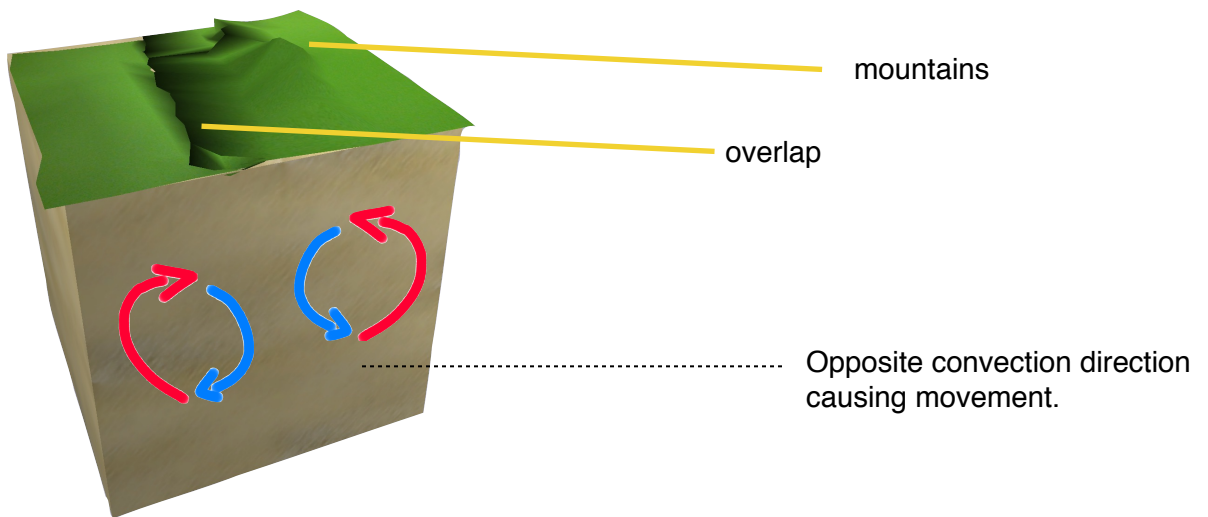
Using Key Terms

Plate Tectonics-

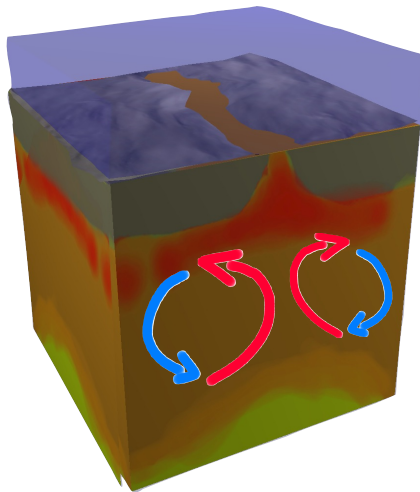
Plate tectonics is a theory that tectonic plates can move around on the asthenosphere. Plate tectonic movement can cause Earthquakes and movements.

Plate tectonic movement

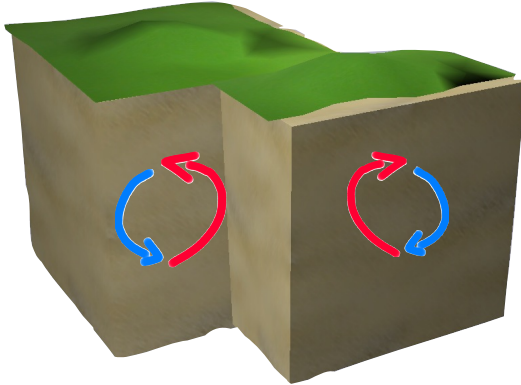
A) Convergent Boundaries - two tectonic plates collide which can form a mountain or overlap



B) Divergent Boundaries - opposite direction



C) Transform Boundaries



Understanding Key Ideas

2. The speed a tectonic plate moves per year is best measured in centimeters per year.

- a. kilometers per year.
- b. centimeters per year.**
- c. meters per year.
- d. millimeters per year.

3. Briefly describe three possible driving forces of tectonic plate movement.

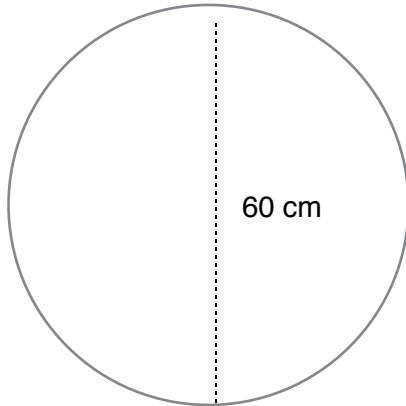
The three possible driving forces of tectonic plate movement includes ridge push, slab pull, and convection. Since mid-ocean ridges have higher oceanic lithosphere, it causes a downhill motion to outside oceanic lithosphere which is called ridge push. A slab pull is a downward pulling motion since oceanic crust is denser than the asthenosphere and the oceanic crust will sink into the asthenosphere, causing a motion to the whole tectonic plate. Convection is when two hot and cold air circulation are going the opposite direction, causing either convergent, divergent or transform movements to happen.

4. Explain how scientists use GPS to measure the rate of tectonic plate movement.

GPS satellites connect with ground stations, the GPS system can track very small movements of the ground stations which means the tectonic plate under the ground station is moving.

Math Skills

5. If an orbiting satellite has a diameter of 60 cm, what is the total surface area of the satellite? (Hint: surface area = $4\pi r^2$)



60cm = diameter
30cm = radius

$$4\pi 30^2 = 4\pi 30 \times 30$$
$$= 11309.73355 \text{ cm}^2$$

Critical Thinking

6. When convection takes place in the mantle, why does cool rock material sink and warm rock material rise?

I think that the reason cool rock material sinks and warm rock material rises while in convection is because molten rock (warm rock) is less dense than cool, solid rock. Usually the less dense molten rock would cover the denser solid (cool) rock, and after many times, the cool denser rock will be pushed down into the hot, subduction zone and melt again. Another reason might be because of the rock cycle when weathering, erosion, and deposition occurs and the sediments sink.

7. Why does oceanic crust sink beneath continental crust at convergent boundaries?

Since oceanic crust is denser because of the pressure of sea water pressing against it, the continental crust that is less dense would break apart easier and cover oceanic crust, and the pressure the continental crust gives can push oceanic crust even lower since oceanic crust is denser than the asthenosphere.