

Plate Tectonic Drawings

Name: _____ Date: _____

Trial #1: Divergence

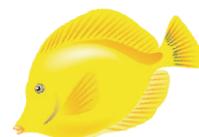
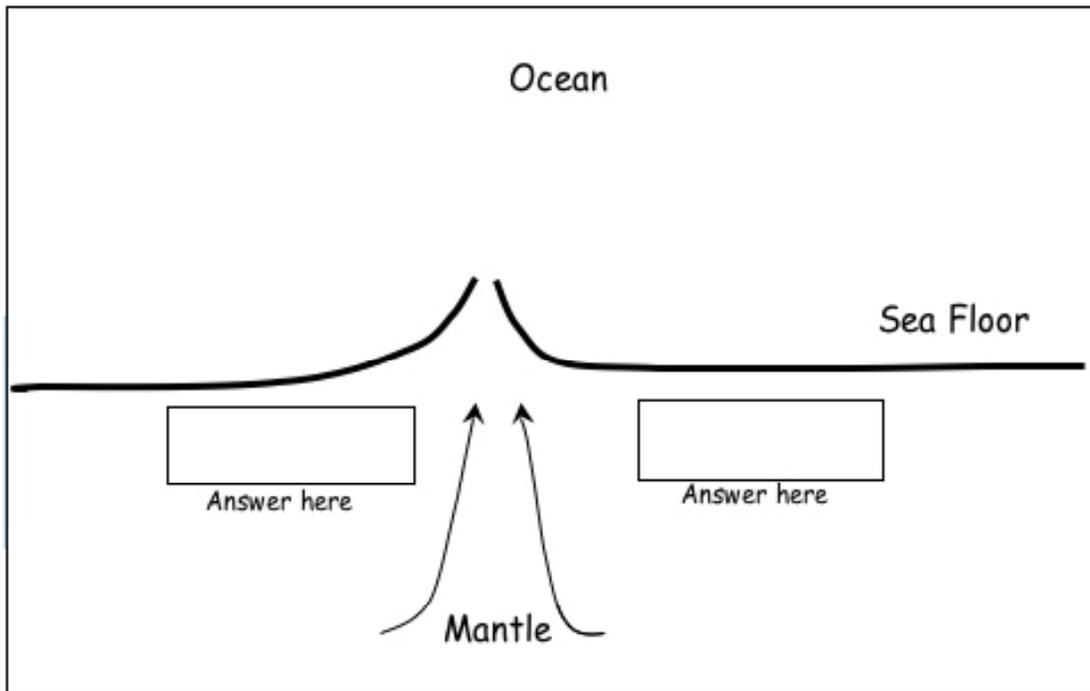


1. Gather your supplies; shaving cream can, tub, cards, spoon, mesh screen, and towels. The shaving cream is magma and the cards and mesh screen are Earth's plates.
2. Create your model by squirting a layer of magma into the bottom of the pan or tub.
3. Use your spoon to flatten the magma so it's evenly distributed.
4. Gently place two of your plates on top of the magma so that they form a rectangle.
5. What do you think will happen when you pull the plates apart?

6. Very slowly, push down and gently slide the two plates apart.
7. What happened?

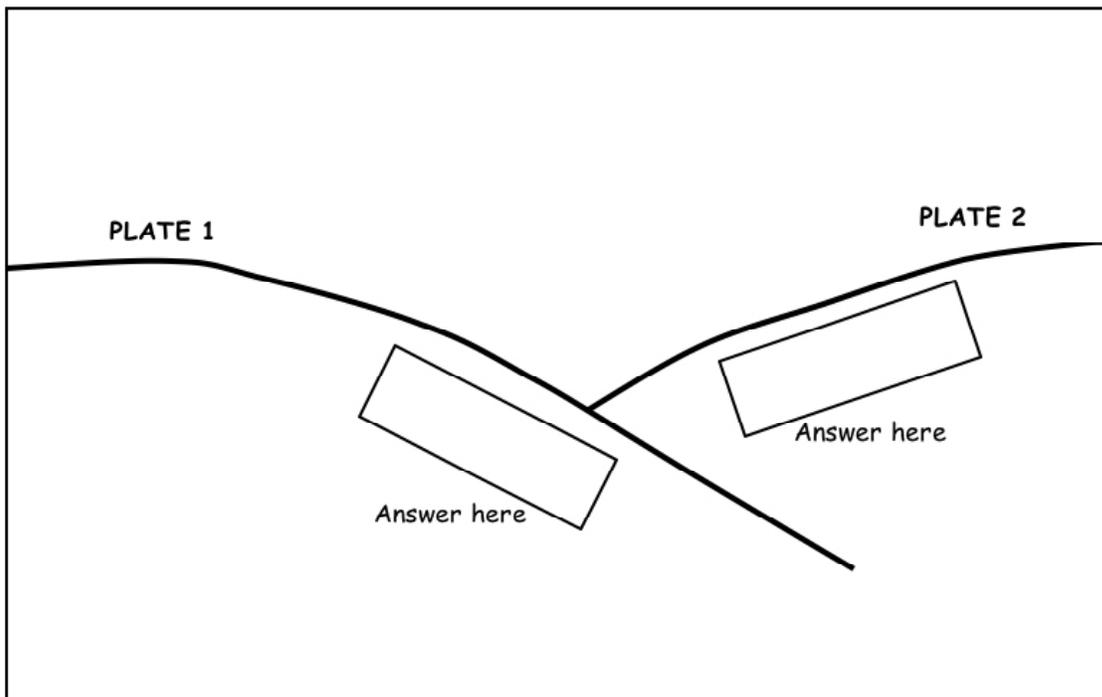


8. On the diagram below, draw arrows in the boxes to indicate the direction of plate movement.



Trial #2: Convergence

1. Wipe your cards clean with a towel to remove excess magma and prepare for the next trial.
2. Use your spoon to flatten the magma again so it's evenly distributed.
3. Put the cards back in place on top of the magma
4. What do you think will happen when you push one plate under the other?
5. This time, push one plate down and under the other plate.
6. What happened?
7. On the diagram below, draw arrows in the boxes to indicate the direction of plate movement.



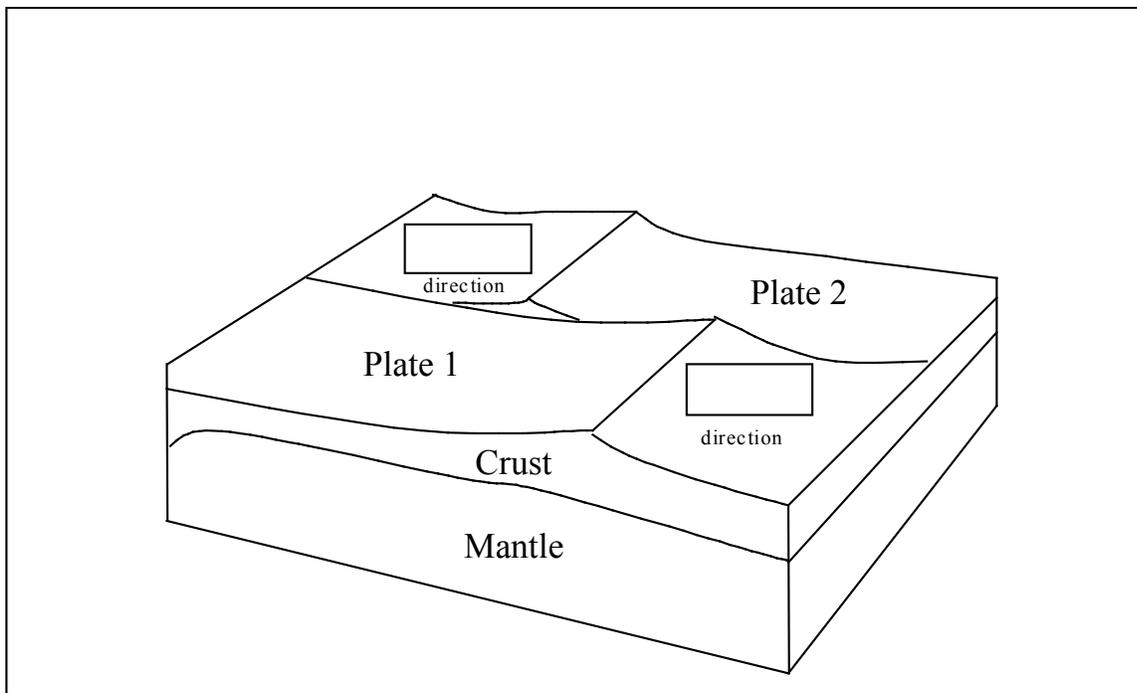
Explain why earthquakes and volcanoes occur along plate boundaries.



Define what a *hot spot* in the Earth's crust is, and describe how a hot spot relates to plate tectonics.



Describe how the formation of the islands in the Hawaiian archipelago took place.



Trial #4: Island Chain Formation

1. Set aside the model of convergent and divergent plates to prepare a new model for island chain formation.
2. Using the mesh material (remember, this also represents one of Earth's plates), hold it flat and free from any surface.
3. With help from another partner, hold the can under the plate and point it upwards.
4. What do you think will happen when magma squirts upwards through the plate?
5. Gently squirt a small amount of magma three times (stay still as you squirt the can!).
6. After each squirt of magma, move the plate slowly.
7. What happened?
8. If you want to do this experiment more than once, scrape the excess magma into the tub.
9. Challenge: see if you can recreate the Hawaiian Island Chain!
10. On the diagram below, draw arrows in the boxes to indicate the direction of plate movement.

