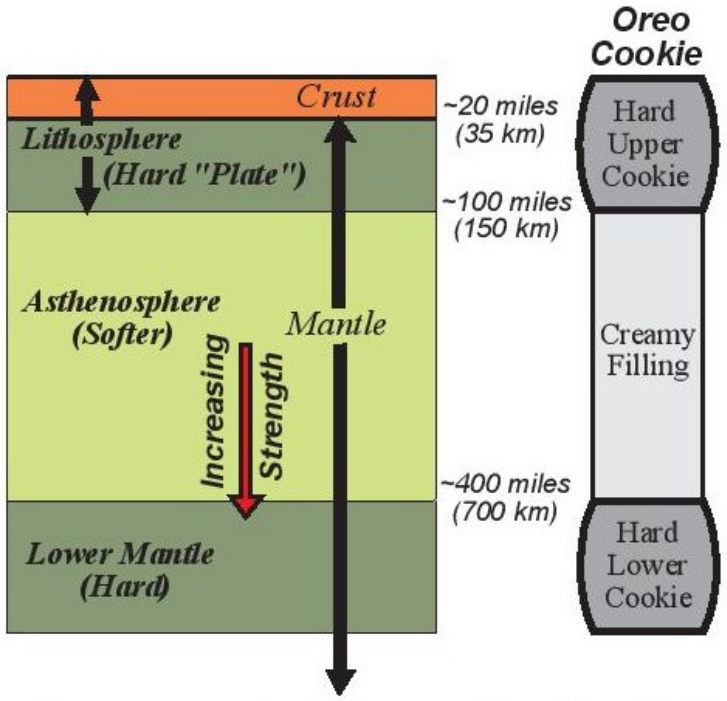
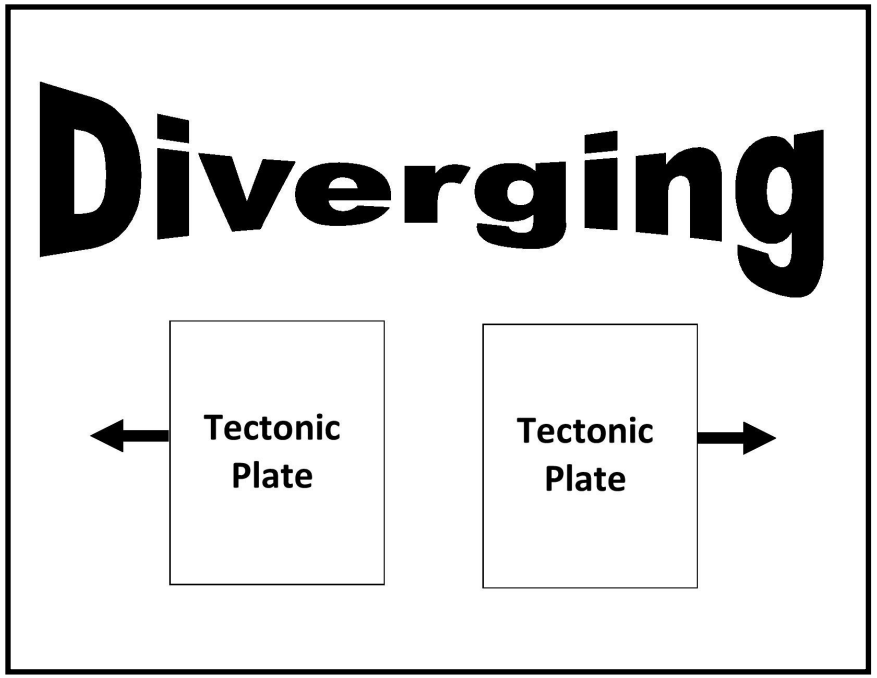
# DIG DEEPER in Southern Illinois: Oreo Earth! Instructions

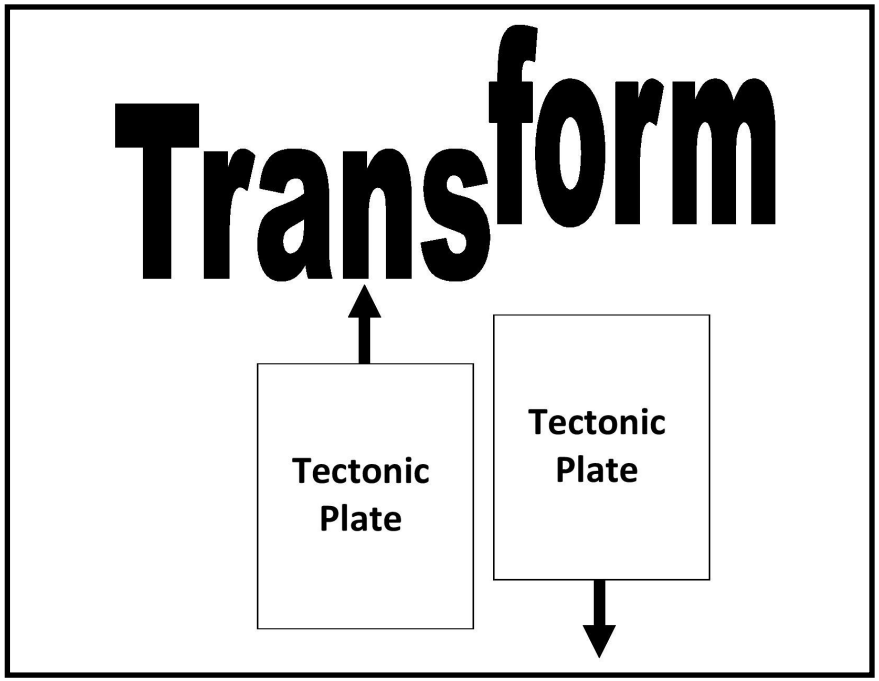
1. Take 3 Oreos and put 1 on each boundary type on the Oreo Earth Plate.
2. For each Oreo: carefully remove the upper cookie with a twisting motion. Then break the crust of the upper cookie into two pieces. Each piece is a tectonic plate to simulate different boundaries!
3. **Cookie #1, DIVERGENT BOUNDARY**: Push down on the two broken cookie halves and slide them apart. The creamy filling between the two broken "plates" tends to flow upward, similar to the rising of hot asthenosphere (divergent boundaries are also called constructive boundaries!)
4. **Cookie #2, TRANSFORM BOUNDARY**: Slide the two cookie pieces laterally past one another, over the creamy filling. You can feel and hear that the "plates" do not slide smoothly past one another. The cracking sound you hear each time is like an earthquake occurring.
5. **Cookie #3, CONVERGE BOUNDARY**: Push one cookie piece beneath the other. Note that this is the only situation where the cold, brittle lithosphere extends to great depths, and hence the only place where deep earthquakes occur. The very largest earthquakes are at subduction zones where two plates get stuck together for centuries, then suddenly let go.

*The upper cookie is the lithosphere, the creamy filling the asthenosphere, and the lower cookie the lower mantle.*




Go online for demo video and lots of cool resources on Illinois geology! carbondalepubliclibrary.org/png




OREO EARTH PLATE