Oreo Activity Instructions

1) Pass out 4 Oreo's to each of the students.
2) Tell students not to touch the Oreo's until they are instructed to.
3) Go over that the class will now be learning about the different types of boundaries that exist in our world.
4) Tell students to split the cookie so that one side of the cookie has the entire cream filling and the other is just a cookie.
5) Now instruct/model cracking the cookie with no cream on it in half.
6) The first type of boundary is a Divergent Boundary
    a. Tell students that divergent boundaries are when the two plates are moving *away* from each other.
    b. HAVE STUDENTS: push down on the two broken cookie halves and slide them apart. Notice that the creamy filling between the two broken "plates" may tend to flow upward, similar to the rising, decompression, and partial melting of hot asthenosphere at mid-ocean ridges and continental rift zones. *(Ex: Iceland)*
7) Next tell students they are going to be learning about Convergent Boundaries.
8) Have students take another cookie and do the same as they did fro step 4 and 5.
    a. Tell students that convergent boundaries are when two plates are moving *towards* each other.
    b. HAVE STUDENTS: push one cookie piece beneath the other. 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. *(Ex: Western Oregon)*
9) The last of the boundary types are transform boundaries
    a. Once again repeat steps 4 and 5 with the cookies.
    b. Tell students that Transform boundaries are when two plates slide alongside one another.
    c. HAVE STUDENTS: 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, but rather stick then let go, stick then let go. *(Ex: San Andreas Fault in California)*

Sliding Plate Over Asthenosphere

a) Divergent Plate Boundary

b) Convergent Plate Boundary

c) Transform Plate Boundary