

Project FOCUS
Best Lessons
MIDDLE SCHOOL

Title of Lesson: Edible Tectonics

Theme: Earth/Space Science

Unit Number: 1 **Unit Title:** Inside the Earth

Performance Standard(s) Covered (enter code):

S6E5. Students will investigate the scientific view of how the earth's surface is formed.

S6CS1. Students will explore the importance of curiosity, honesty, openness, and skepticism in science and will exhibit these traits in their own efforts to understand how the world works.

Enduring Standards (objectives of activity):

Habits of Mind

- Asks questions
- Uses numbers to quantify
- Works in a group
- Uses tools to measure and view
- Looks at how parts of things are needed
- Describes and compares using physical attributes
- Observes using senses
- Draws and describes observations

Content (key terms and topics covered):

Plate tectonics, lithosphere, asthenosphere, convection currents, divergent, convergent, transform

Learning Activity (description in steps)

Abstract (limit 100 characters): The students in this lesson are introduced to the 3 types of plate boundaries and the force that causes these boundaries to form.

Details: Students in this lesson will use Milky Way candy bars to depict the way Earth's crust moves on top of the asthenosphere. We reviewed previously learned standards from Alfred Wegner's Theory of Continental Drift. We then discussed that Wegner's Theory lacked a force to move the plates of the Earth, convection currents in the asthenosphere. Each student then received two candy bars and a paper towel. The students then identified the three layers of the candy bar as the crust (chocolate), upper mantle (caramel) and lower mantle (fluff) of the Earth. All of us pulled the first candy bar apart to depict divergent plate boundaries on the earth's surface. We then discussed what these boundaries would look like on the Earth's crust as a physical feature. Using the same candy bar, we pushed the two pieces back together to show convergent plate boundaries and repeated discussing what Earth's crust looks like when this happens. The kids then ate the first candy bar and removed the second from the wrapper. We repeated depicting divergent, and then convergent but added the plate boundary of transform to this candy bar. We discussed what Earth's crust looks like at a transform boundary and then ate the final candy bar. The kids then had several questions concerning plate boundaries and the forces that cause plate tectonics: 1.) Name the layers of your candy bar and what layers of Earth each would represent. 2.) What type of plate boundary was formed when you pulled the pieces apart? If that same action happened to the plates on Earth, what would you expect? 3.) What type of plate boundary

was formed when you pushed the pieces apart? If that same action happened to the plates on Earth, what would you expect to see? 4.) What type of plate boundary was formed when you slide the pieces past each other? If that same action happened to the plates on Earth, what would you expect to see? 5.) What force in the Earth that is moving the crustal plates along the surface?

Materials Needed (type and quantity): Milky Way bars (2 per student), paper towels, hand sanitizer, review question sheets

Notes and Tips (general changes, alternative methods, cautions): Check for allergies before doing this lesson. Make sure the kids understand that they cannot eat the candy bar until told so. It might be good to have hand sanitizer in the class room to have the children clean up before eating the bars. The bars will melt if they stay in the kids hands too long so make sure and move quickly. The transform boundary is the hardest to depict and so make sure and do divergent and convergent before this boundary.

Sources/References:

- 1) http://www.scec.org/education/k12/eclakit/Edible_Tectonics.pdf
- 2) Click here to enter text.
- 3) Click here to enter text.