Curiosity Guide #208
Plate Tectonics

Accompanies Curious Crew, Season 2, Episode 8 (#208)

Plate Tectonics with an Orange

Investigation #4

Description

Find out more about the earth's plates and how they move.

Materials

- Orange
- Paring knife
- Black permanent marker

Procedure

1) Carve large puzzle pieces through the orange peel around the surface of the orange (be careful not to pull them off entirely).
2) Use the black marker to trace over all of the precut seams on the orange to make them more visible.
3) Push two sections of the peel toward each other, as well as sliding them away from one another.

My Results

Explanation

The orange peel represents the surface of the earth and the different tectonic plates that cover it. The fruit under the peel represents the mantle layer. The model demonstrates how the plates fit together.

Sometimes two plates will move away from each other. This movement leaves rifts or cracks in the crust. Sometimes two plates will collide or converge. If these plates are oceanic or continental, this movement creates subduction zones. If the pieces are land plates, the contact with each other will create mountains.

Tectonic plate edges are rough and are under constant stress and pressure. When the plates move, parts of their boundaries get caught. Eventually the plates break free, the energy that has built up from the colliding edges is released, and this causes an intense vibration, or earthquake.

Something more to explore: It is surprising to discover that the entire surface of the earth is covered with moving plates! Some of the plates are land and others are under ocean water. On the internet, search for "world map of plate tectonics." See if you can find the North American Plate that the United States rides on. Can you find the Pacific Plate that carries most of the Pacific Ocean? The Pacific Plate is pushing against the North American Plate, and the boundary between them runs right through southern California. With those two plates colliding, it's no wonder there are so many earthquakes there!

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