Curiosity Guide #208
Plate Tectonics

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

Plate Boundaries

Investigation #5

Description

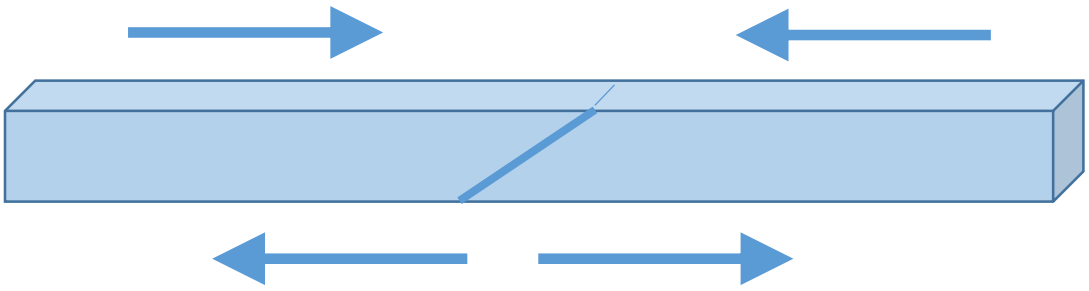
Push together; pull apart. Now side to side, and slide, slide, slide. Let's do the Plate Boundaries Dance!

Materials

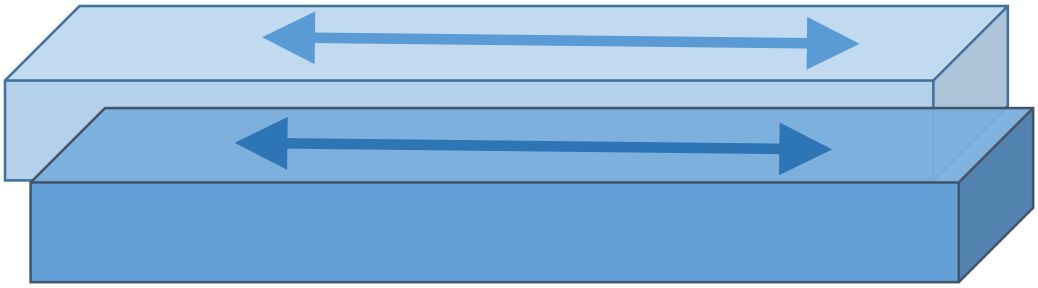
- 1 block of wood, 2 by 4 by 16 inches
- Miter saw
- Measuring tape

Procedure

1) Lay the wooden board on its 2-inch edge.
2) Find the center of the board.
3) Cut a 45 degree angle across the board.
4) Once cut, keep the two pieces of board in line with each other, but lay them on the flat, 4-inch side as shown in the diagram below.
5) The angled edge of the top board should overhang the bottom board.



6) Press the boards toward one another. Does one go up?
7) What if you pull them gently apart?
8) Now turn the board so that the uncut, short sides are beside one another. Slide the boards back and forth, as shown in the diagram below.



My Results

Explanation

The areas that are around plate boundaries are called faults. Faults are where there is a joint between two plates of rock.

When the two pieces of board are laid flat on the 4-inch side and fitted together, the hanging wall is the one overhanging on the top.

The one angling underneath is the footwall. This model represents the two faces of rock that meet at a fault in a plate boundary.

When the two boards are forced together, the hanging wall goes up. This is called a thrust fault. When the boards are pulled apart, the hanging wall slides down the footwall. That kind of fault is referred to as a normal fault. A normal fault has that name simply because we would expect that the hanging wall would normally slip down from gravity.

Transform boundaries, or strike slip faults, are when two sheer faces are sliding against each other, rather than pushing or pulling against each other. Plate edges are rough and under constant stress and pressure, so when the plates move, parts of the boundaries get caught. Eventually the boundaries will break free. The energy that has built up from the colliding edges is released and causes an intense vibration, or earthquake. The vibration ripples in seismic waves away from that boundary. When the ripple arrives at the surface, people can feel the shaking. The majority of the world's earthquakes occur along these plate boundaries.

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