

OKLAHOMA ROCKS!

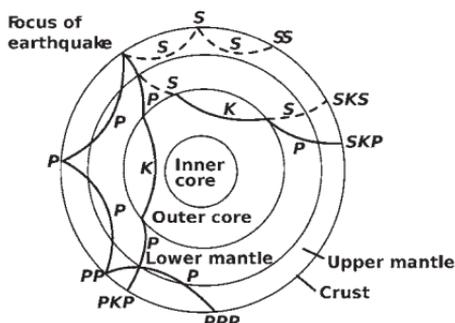
shake, RATTLE & ROLL

Tectonic Plates

The earth's crust is made of tectonic plates that are both brittle and elastic, which means that those rocks can bend and stretch but can also break. The tectonic plates below our feet are constantly shifting, sliding past each other, and getting stuck together. All this movement can cause a buildup of stress at certain parts of the rock and cause the rock to bend and store energy. Eventually the built-up stress is too much for the rock to handle so it breaks and all of the energy that was stored up is released as an earthquake. When the rocks release the stored energy, it causes the ground to vibrate as the seismic waves, created by the earthquake, spread out all around. The seismic waves spread out like giant rings around the earthquake, and when you feel the shaking of the earthquake you are feeling those waves as they spread out across the planet. The bigger the earthquake, the farther and stronger those waves spread out.

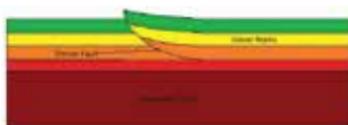


commons.wikimedia.org/wiki/File:Plates_tect2_en.svg



Vocabulary:

- Ductile deformation
- Brittle deformation



https://commons.wikimedia.org/wiki/File:Brittle_deformation.png
Author: DavidMP1, 8 November 2012, 07:27:13

Materials Needed:

- Small cooler with ice
- 2 Big Hunk Candy Bars (one frozen, one warmed by your hands)

First bring out the frozen candy bar and apply stress to the ends trying to bend it. It will break easily. The frozen candy bar has a relatively short elastic limit and deforms brittlely by fracturing when stress is applied to the ends.

Next, produce the second candy bar that has been warmed. Slowly apply bending stress to the ends of the warm candy bar, bending it. This one will bend easily due to ductile deformation, so once the candy bar is bent, it will not go back to its original form.