

Lab: Breaking Up-Modeling Earth's Crust

Introduction: Earth's crust is like a cracker. When pressure is placed on Earth's crust, it cracks and releases the energy in waves that we call an earthquake. Earth's crust has pressure placed on it from forces deep within the Mantle. The forces can **push the crust together** (compression), **pull it apart** (tension) or **shear** it sideways. In this activity you will use a cracker to model an earthquake.

Materials: 3 cracker halves per partnership, 3 paper towels

Directions:

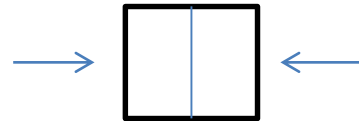
- 1. Tension-** Place the cracker on the paper towel. Carefully apply **tension** to the cracker (try to pull it apart). Observe where it breaks and draw it in the data table.

Set aside while completing next steps.



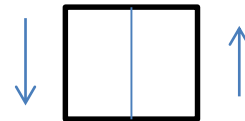
- 2. Compression-** Place the cracker on the paper towel. Carefully apply **compression** to the cracker (try to push it together). Observe where it breaks and draw it in the data table.

Set aside while completing next steps.



- 3. Shear-** Place the cracker on the paper towel. Carefully apply **shear** to the cracker (try to push one side up and the other side down). Observe where it breaks and draw it in the data table.

Set aside while completing next steps.



Type of Pressure	Tension (pulling apart)	Compression (pushing together)	Shear (push one side up and the other side down)
Picture of Crackers after pressure applied			
Describe the shape of broken crackers			
Type of Fault caused by Pressure			

Questions:

1. What layer of the earth is the cracker compared to?
2. Where does the energy come from to break Earth's crust?
3. Which type of pressure seemed easier to break?
4. Which type of pressure seemed harder to break?
5. How did applying stress affect Earth's surface?
6. When a fault breaks, what catastrophic event happens?