

Earthquakes

Running Time: 26 Minutes

Nifty questions in this episode:

- What causes earthquakes?
- What does the Earth's surface rest on?
- What are faults?

Awesome answers:

- Large pieces of the Earth's crust (plates) move a little.
- The Earth's surface floats on thick molten rock.
- Cracks in the Earth that store energy (like a spring); when released, this energy causes the Earth to move.

Experiments shown on the video:

MAKE A QUAKE

Objective: To demonstrate forces of an earthquake.

- Cut shoe box in half.
- Slide box back together with cut sides overlapping each other.
- Fill with sand and pat down.
- Push ends of box together, then apart.
- Observe land movement with simulated earthquake.

MAKE YOUR OWN SEISMOMETER

Objective: To demonstrate than an object falls toward the force applied.

- Take eraser off the end of a pencil, and stick the other end in small ball of clay.
- Place on tabletop; place about 10 plastic bottle caps around ball of clay.
- Place a marble on top of the pencil. Now, hit the side of the table to simulate a quake.
- Note that the marble falls toward the direction the quake came from.

More interesting stuff to do:

QUAKING ARCHES

Objective: To show how the Earth's crust moves when its plates are moved.

- Place a 3" x 5" or 4" x 6" index card between two blocks of wood or other small weighted objects. Push blocks together, pushing card up to form a high arch of the index card (lift card with finger to aid in forming arch) and leave in this position.
- Repeat this procedure, making 10 or more arches.
- Place rulers or yard/meter sticks across the tops of two or more arches.
- Push together or pull apart blocks of wood to form different heights of arches.
- Observe angle and various levels of rulers.
- Repeat, using string or yarn instead of rulers/sticks. Notice how the plates and surface move when energy is applied.

BOXED-UP WAVES

Objective: To demonstrate how the structure of the Earth affects earthquake waves.

- Use a shoebox with a lid or a box of your design with similar dimensions.
- Cut a 3-1/2" lengthwise piece from the side of the box (side facing you).
- Insulate all sides, including top, of the inside of the box with styrofoam or other material to dampen sound from within box.
- Place a 600-ml beaker or glass into the 3-1/2" opening; tape around beaker and opening.
- Place a portable battery-operated radio inside box and turn on to medium volume.
- Fill the beaker at different times with these substances in the following order: air, sand/dirt; pebbles, rocks, water, vegetable oil, syrup. Cover box with lid and place your ear against the beaker as you test each substance.
- Adjust volume, depending upon area reception; the lower, the better for consistent results. Record in order the substance that produces the clearest, loudest and most sound vibrations.

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closed-captioned



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