

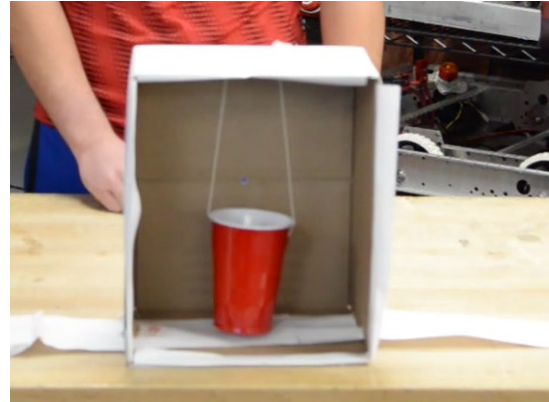
Size Up Your Seismograph

Introduction: Ready to shake things up? Today we're going to create our own seismograph using everyday items.

Approximate Time: 25-30 minutes

Materials:

- Medium-sized cardboard box
- Paper or plastic cup
- String
- Marker
- Pen
- Scissors
- Paper, or a very long printed receipt
- Tape
- Coins, small rocks, or other small objects to use as weights
- Another person to help



Procedure:

1. Cut the lid or flaps off the cardboard box, and then stand it up on one of the small sides.
2. Poke two holes on the opposite of each other on the lip of the cup.
3. Tie the string to each hole. The string should be a bit longer than double the length of the box.
4. Poke two holes in the top of the box. Make sure they are the same distance apart as the holes in the cup.
5. Push the string through the holes and tie them together on the top of the box. The cup should hang down inside the box. The bottom of the cup should be about an inch from the bottom of the box.
6. Poke a hole in the center of the base of the cup. Take the cap off from the bottom of the marker and push the marker through the hole. Its tip barely should touch the bottom of the box.
7. Fill the cup with coins or other small weights. Make sure the marker stays vertical.
8. If you are using a piece of paper, fold the paper in half lengthwise, then fold it in half lengthwise again. Unfold the paper and cut along the folds, then tape together the ends of the strips to form one long piece.
9. Cut two slits on opposite sides of the cardboard box. Try to get as close as possible to the bottom edge. The slits need to be wide enough to pass the paper along the bottom of the box.

10. Make sure the marker is centered on the paper strip. You may need to poke different holes in the top of the box and hang the cup again.
11. Get another person to help you.
12. Have the other person pull the paper strip through the bottom of the box as you shake the box back and forth on a flat surface.
13. Experiment with your seismograph by shaking the box a few more times with different strengths, stopping for a few seconds in between each trial.
14. Pull the paper away and observe the line.

Tips & Tricks:

- If you are having issues seeing your line, check to see whether your marker has dried. If it has, replace with a new one. You may also want to choose a darker-colored marker.
- If you are using paper, make sure to tape the pieces together closely, so they do not get caught when going through the slit in the box.

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