

Tsunami in a Bottle

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Lab Demo

ES 210

Murry

Materials needed:

- Large clear plastic bottle (preferably 2-liter)
- Small gravel
- Water source

Procedure:

1. Fill the plastic bottle with small gravel until there is about a 2-inch layer on the bottom.
2. Go to the sink and fill the plastic bottle about $\frac{1}{2}$ - $\frac{3}{4}$ full of water.
3. Place the cap on the bottle.
4. Tilt the bottle on its side.
5. Place one hand under the mouth part of the bottle, with that hand, tilt the bottle up, repeat this step as needed to fully understand the experiment.

Potential observations:

Through this experiment we should be able to see the effects of a tsunami on Earth's surface. We should be able to see what happens when the water is pushed to one side of the bottle, and how it affects the gravel.

Conclusion:

After doing this experiment you can clearly see how a tsunami is made. Your hand that tilts the mouth of the bottle upward demonstrates an earthquake, which is caused by a tectonic plate subducting under an adjacent plate. Once the earthquake occurs, a tsunami, also known as a seismic sea wave, will be created. If the tsunami was created in deep water or open ocean, no damage will occur. But if it was created in shallow water it can create serious damage to a coastline, and create waves as tall as 100 feet. This experiment should clearly show how a tsunami is created, and the affect it has on a coastline.

Similar experiments:

- Creating plate tectonics using pudding to show how the earthquake was created.
- A very similar experiment to this one, except you use two plastic bottles and duct tape them together and swoosh them back and forth.
- Wave in a bottle.