

Can Crushing Experiment (ideal for grades: 9-12)

This experiment demonstrates strength of air pressure in the earth's atmosphere. Please note: an adult should be present at all times during experimentation.



MATERIALS:

Aluminum cans (diet soda cans do not work as well; Mountain Dew and Dr Pepper cans work better)

Talboys Basic Mini Hotplate (S14172)

Container for water (big enough for top of can to be immersed)

Ice

Water

Tongs or heat resistant gloves

PREPARATION:

1. Add cold water to the container. Do not completely fill the container; leave room to add ice and not spill.
2. Start the Hotplate early to get best results; turn to high.
3. Add a small amount of water to the cans. The amount of water is not largely important, but there should be enough so that it does not boil away before you begin. 1-2 centimeters is sufficient.
4. Arrange the container and the Hotplate for best flipping (container on left side if right handed and if facing the students with the experiment in between).
5. Space container away from the Hotplate to keep bucket cool.



Let's See Your Experiment in Action!

Procedure

1. Check that the cans are releasing steam and that the water inside is bubbling.
2. Add enough ice to the container to cover water's surface.
3. Move the container closer to the Hotplate to quicken flip speed and reduce spill.
4. Grasp can with tongs or heat resistant glove.
5. QUICKLY move can over to bucket, flip it over, and immerse the top of the can in the ice cold water. Wait for the can to crush (this may take a few seconds).

NOTE: This final step should be completed in one fluid motion. Speed is important to keep the temperature change more immediate. However, if the can is hot enough, you shouldn't have to race to flip it over.

What are your findings?

Experiment Reference

State Climate Office of North Carolina. 2014. Experiments. [ONLINE] Available at: <http://www.nc-climate.ncsu.edu/education/experiments.php>. [Accessed 17 November 14].

