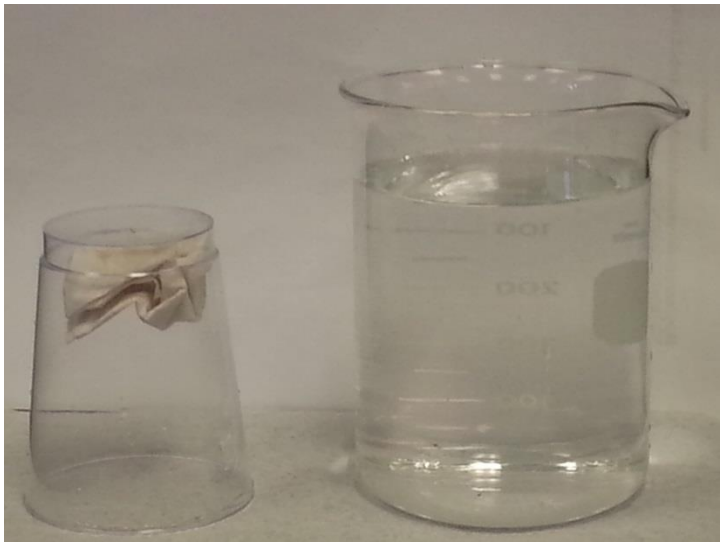
California State University of Bakersfield, Department of Chemistry

Air Takes Up Space



Standards:

2-PS1-1. Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.

2-PS1-2. Analyze data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose.

5-PS1-3. Make observations and measurements to identify materials based on their properties.

Introduction:

Most of us have submerged a container upside-down in water and discovered that it does not fill with water. What is preventing the water from getting in? The air inside the container takes up space and with the only opening being on the bottom, the air has no way of getting out. But what happens if you provide another way for the air to escape?

Materials:

- 2 plastic cups (one should have a ½ inch hole on the bottom)
- 2 paper towels
- Tape
- Large beaker (1000 mL) or large pail

This material is based upon work supported by the CSUB Revitalizing Science University Program (REVS-UP) funded by Chevron Corporation. Opinions or points of view expressed in this document are those of the authors and do not necessarily reflect the official position of the Corporation or CSUB.

Safety:

- Always have an adult with you to help you during your experiment.
- Always wear eye protection and gloves when doing chemistry experiments

Procedure:

1. Fold up and tape the paper towels on the bottom of the inside both cups.
2. Then place the cup without the hole upside down in the beaker of water and pull it out to observe if the towel is wet or dry.
3. Follow up with the cup that has a hole in the bottom. Place the cup upside down in the beaker of water then pull it out to observe the paper towel.

Data and Observations:

1. Record your observations here.

Questions:

2. Why did the paper towel get wet when there was a hole on the bottom of the container?

References:

1. Wonders of Our World. https://wow.osu.edu/experiments/Gases/Air%20Takes%20Up%20Space%20-%20Tissue%20in%20a%20Cup%20%20 (Accessed: July 15, 2014).

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