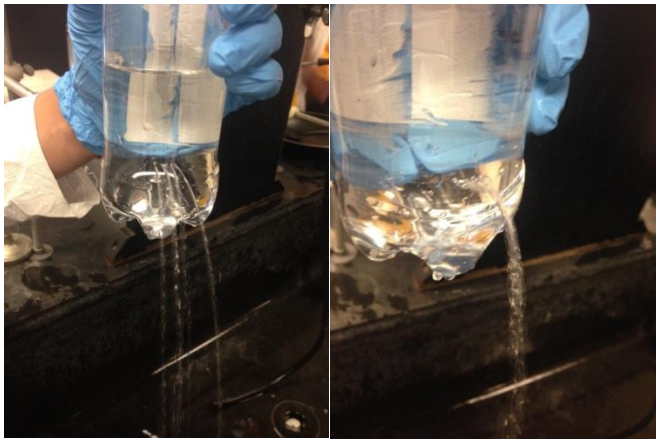
California State University of Bakersfield, Department of Chemistry

Water Twist



Standards:

HS-PS1-1. Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.

HS-PS1-3. Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

Introduction:

Have you ever wondered about the magic of cohesion? There's a simple yet exciting way to recreate this phenomenon. Using everyday products such as a 20-fl oz. Pepsi bottle, a thumbtack, and water, it is easy to see why many people are fascinated by the wonders of cohesion (the attraction between water molecules).

Materials:

- 20-fl oz. Pepsi bottle
- Thumbtack
- Water

Safety:

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

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.

Procedure:

1. Fill the bottle with water.
2. Using a thumbtack, make five evenly spaced holes on the bottle near the bottom.
3. Loosen the cap to release the water.
4. Run your fingers along the streams of water that are coming from the bottle. What happens each time you run your fingers through the stream?
5. Empty the water to just above the holes. What happens now?

Data and Observations:

Record observations for procedures 1-4.

Record observations for procedure 5.

Why is there a difference?

References:

1. Steve Spangler Science (Accessed: July 14, 2014).

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