A STEM in the Park Take Home Activity

STEM in the PARK

Science, Technology, Engineering, and Mathematics

The Never-ending Bubble

What You Need

- 1/2 (500 ml) cup dishwashing detergent
- 4-1/2 (4.5 liter) cup water
- 4 tablespoons (60 ml) glycerin (available in pharmacies or chemical supply houses)
- A wand (if you don't have a wand, you can make your own with a pipe cleaner)
- Pickle jar or other wide-mouth glass jar
- Boiling water
- Pot holder

What To Do

1. Measure out the water, detergent, and glycerin into container with a cover and stir gently. The longer you let the mixture set, the larger the bubbles are and the longer they seem to last.
2. Dip your wand in the bubble solution and blow a bubble into the air.
3. Catch the bubble on your wand and see how long you can keep it there before it pops. Practice a few times until you can hold the bubble there for at least thirty seconds.
4. Have your mom or dad boil some water on the stove.
5. Using a potholder, have your parent hold your jar over the boiling water for a few seconds to catch some water vapor. (Be careful, the hot water will heat the jar)
6. Dip your wand in the solution again.

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What To Do cont.

7. Set the bubble carefully on the inside of your pickle jar lid. (You can wet the lid beforehand to ensure an easier landing)
8. Carefully set the jar on top of the lid and screw it on. (It's fine to leave the jar upside down)

Observe...

How long did your bubble last in the jar? Decide how and how often you want to record any changes in the bubble and record those changes. ***(Hint: you may need a calendar to keep track of the time. Eiffel Plasterer of Huntington, Indiana blew a bubble that lasted for 341 days!)***

Learn...

A bubble is a sphere of air, surrounded by a layer of water trapped between soap molecules. If a bubble doesn't come into contact with something that pops it, it can last a very long time. The greasy film of the soap protects the bubble from evaporating too fast. Because a closed container (especially one filled with water vapor) slows evaporation even more, this environment allows bubbles to last even longer.

Investigate...

What would happen if you used different sized jars, types of containers, or different sized bubbles? Choose a variable to test and investigate further into how long bubbles can last in a closed environment.

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