



Curiosity Guide #602

Bubble Science

Accompanies Curious Crew, Season 6, Episode 2 (#602)

Bubble Dome

Investigation #5

Description

Bubbles are always round. Or are they?

Materials

- Plastic lids in various sizes
- Bubble solution
- Straw
- Paper Towels
- Pipette
- Scissors
- Knitting needle

Procedure

- 1) Place the plastic lids on the table so the lips are facing up.
- 2) Use the pipette to carefully fill the lids with bubble solution.
- 3) Dip one end of the straw into the bubble solution and blow.
- 4) Try to create a bubble dome that clings to the lid.
- 5) How big can you make the bubble dome?
- 6) Slowly pull the straw out.
- 7) Can you slide the straw back in again?
- 8) What happens if you touch the bubble with your finger, knitting needle, or point of the scissors?

9) What happens if you dip the end of your finger, knitting needle, or scissors in the bubble-solution container and then touch the bubble's surface?

10) Try this: Wet the straw. Place the straw through the bubble and blow additional bubble domes inside the first bubble.

11) Try carefully putting your lid bubble in the freezer for 5 minutes.

12) What did you notice?

My Results

Explanation

Because the bubble is attached to the lid as its base, the bubble will create a dome or half circle to limit the surface area around the trapped air blown inside.

When a dry finger, knitting needle, or scissors touches the bubble, the dry object opens the soapy water layer, releases the trapped air, and pops the bubble. The water molecules in the bubble will attract to whatever the dry object is.

However, if the object is wet, particularly if the object is covered with soapy solution, the object pierces the bubble but fills in the opening with the soap solution and keeps the bubble intact. Blowing additional bubbles inside the first into a series of smaller and smaller bubble domes becomes possible.

This investigation can also work directly on a table as long as the table has been sprayed with water first. Freezing a bubble is also possible. After several minutes in the freezer, the water layer starts to crystalize.

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