DIY Snake Bubbles

FUN FACT

Some fish use bubbles as a nest for their baby fish eggs. These fish blow lots of tiny bubbles that float to the top of the water, creating a "hidden" spot for the baby fish eggs to hide from predators until they can hatch.

MATERIALS

- Bowl
- Water
- Dish soap
- Scissors
- Plastic water bottle
- Craft stick
- Sock

DIFFICULTY

SURFACE TENSION

Surface tension allows liquids to be strong. The strength is from cohesion, where a liquid's molecules are attracted to each other. Water is made of many tiny H2O molecules that are attracted to each other especially at the surface. Soaps and detergents decrease surface tension, breaking down dirt and grime. This decrease in surface tension allows bubbles to be made.

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What is a bubble's favorite snack?

*answer on the next page

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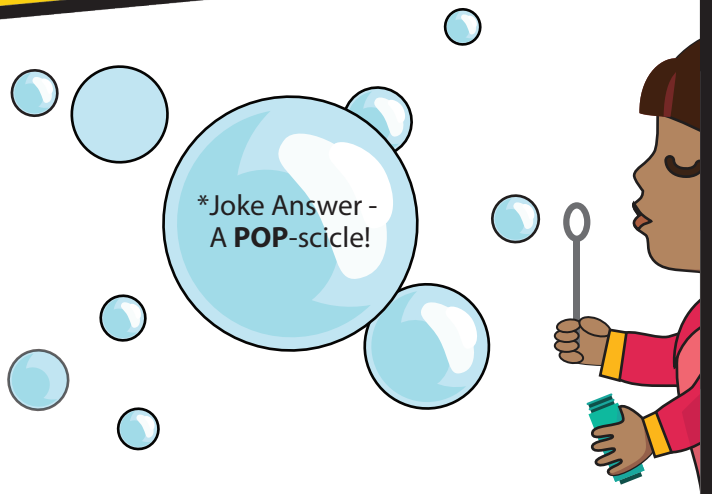


EXPERIMENT

Step 1: Gather your materials.

Step 2: Pour 2 cups of water into the bowl.

Step 3: Add 1/4 cup dish soap to 2 cups of water, and stir with a craft stick.

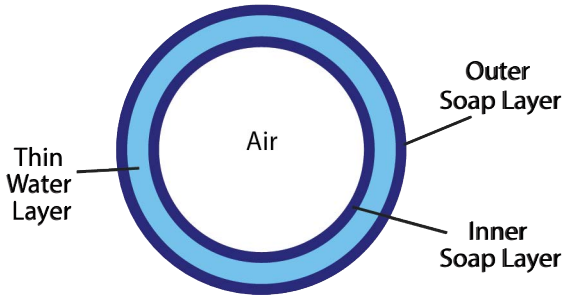
Step 4: Use scissors to carefully cut off the bottom of the water bottle.

Step 5: Put a sock over the bigger end of the bottle.

Step 6: Dip the sock into the soapy solution.

Step 7: Blow air into the smaller end of the bottle.

Bubble Diagram



WHY IT WORKS

Water mixed with soap decreases the water's surface tension and allows the water to become "flexible". A soap bubble filled with air is made of three very thin layers: soap, water, and another layer of soap. This sandwiches the water, allowing a bubble to form. As you blow the soapy water mixture through the holes in the sock material, tiny bubbles are formed very close together making the shape of a snake.

EXTEND YOUR LEARNING

- Do the bubbles look different if you use socks made of different materials? Try a dress sock or tights?
- What other bubble makers or bubble wands can you design?
- What happens if you change the amount of soap or water in your bubble solution?
- What might happen to the strength of your bubble if you were to add glycerin or corn syrup?

WORKFORCE CONNECTION

Chemists work with soaps and detergents to make the best cleaner. They need to understand the chemistry of the soap molecules and how they reduce the surface tension of water as well as grabbing onto the oils and dirt.