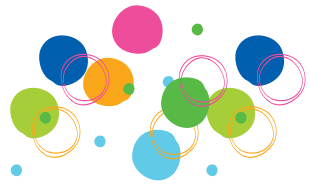


# Bubble Prints

Air is all around us, even when we can't taste, touch, smell, see, or hear it! But is there a way to trap air? And can we make something with it?



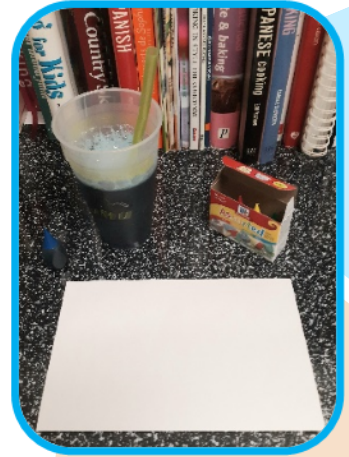
## Materials:

- Small Bowl or Cup
- Straw
- Bubble Solution or Dish Soap and Water
- White Construction Paper
- Food Coloring

## Procedure:

1. Pour some bubble solution into your cup. You do not need a lot.

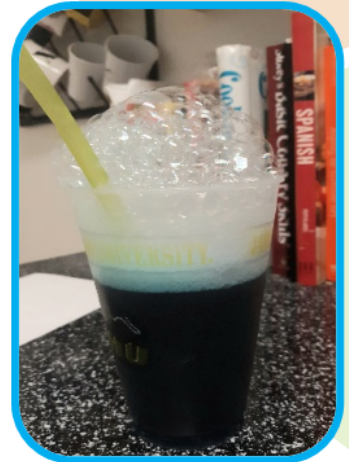
1, 2



2. Add food coloring to your bubble solution and mix it.

3. Place one end of your straw into the bubble solution. Blow through the straw to create tons of bubbles in your cup. You want the bubbles to come up above the top of the cup, but not overflow.

3



4. Press your construction paper down on top of the bubbles so they pop. Remove your paper and look at the print!

4



*If the print isn't showing as much as you would like, add more food coloring to your bubble solution and try again!*

# Bubble Prints

## WHAT'S HAPPENING?

Bubbles are formed by trapping air between a thin sheet of water. But to make this sheet of water, you need soap molecules! Soap molecules consist of a hydrophobic end and a hydrophilic end. The hydrophobic end stays away from water while the hydrophilic end stays close to water.

Hydrophobic

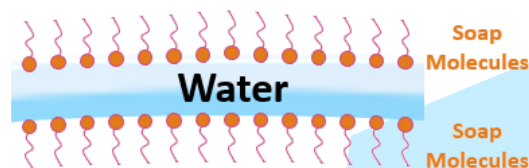


Hydrophilic



The hydrophilic ends of the soap molecules press the water into a thin sheet trapping air inside. But why are bubbles round?

Bubbles are referred to as "minimal surface structures" meaning they use the least amount of surface area needed to hold any volume of gas - or air. Spheres are the best at doing this, making bubbles round when they are floating through the air.



## DID YOU KNOW?

A **materials scientist** is someone who studies structures and chemical properties of different materials! If you liked exploring this activity, maybe materials science is for you!