



# BUBBLES

August 2025

## *POP Quiz: What's a Soap Bubble Made Of?*

If you guessed soap, water, and air, you're absolutely right! A bubble is basically a thin film of soap and water wrapped around air. But believe it or not, there's a lot more to bubbles than just that.

## How Do Bubbles Form?

Soap molecules are very flexible, and water molecules are naturally stretchy. When they mix together, they form a thin, stretchy film called soap film. When you blow air into that film using a wand, a straw, or even your hands, the film stretches around the air and forms a bubble.

## Why Are Bubbles Round?

Ever wonder why bubbles aren't square or star-shaped? Here's the deal: when you blow a bubble, you're adding volume (air) to a thin, flat layer of soap film. The soap and water molecules stretch around the air and create surface tension, which is the invisible "pull" that tries to make the bubble as small and strong as possible. A **sphere** is the most efficient shape in nature, it uses the least surface area to hold the most volume. So no matter what shape the bubble starts out as, surface tension always pulls it into a round shape.

## Why Are Bubbles Rainbow-Colored?

Bubbles may be made of clear materials—soap, water, and air—but they often look like shimmering rainbow orbs. That's because of **light**.

Light waves bounce off both the outside and inside surfaces of the bubble. These waves interfere with each other, which either cancels them out or combines them, creating bright, shifting colors. These are called **interference colors**, and they change depending on how thick or thin the bubble film is at different spots.

## Do Bubbles Really Fly?

Technically, **bubbles don't fly—they float**. The air trapped inside the bubble is lighter than the air outside. That lighter air (mostly oxygen from your breath) "rides" on the denser air around it, including heavier **carbon dioxide (CO<sub>2</sub>)** molecules in the atmosphere.

It's the same reason a **helium balloon** floats. Helium is even lighter than the air we breathe, so a helium balloon floats higher than a regular air-filled one. The same principle helps soap bubbles glide through the air.



Now, dip your finger into the solution and gently poke the bubble.

### **What happens?**

If you did it right, the bubble won't pop!

### **Why?**

The corn syrup makes the bubble film **stronger** and slows down **evaporation**, so the water doesn't disappear as quickly. Plus, when your finger is **wet** with the solution, it doesn't break the surface tension. The bubble just stretches around it instead of popping.

### **Final Thoughts**

Bubbles might seem simple, but they're packed with science—light, chemistry, air pressure, geometry, and more. So next time you blow a bubble, take a closer look. You're not just making something fun—you're learning about the world in a pretty amazing way.

**Your challenge is to make a bubble solution and find different items that can make bubbles. What is the most unusual item you used to make bubbles? What made the largest bubble? Remember to take photos of you and your bubble making!**

Deadline to submit your Bubbles Monthly Challenge:

Sunday, August 31, 2025, at 5:00 PM MST.

Submit report at: [https://bit.ly/Bubbles\\_Aug25](https://bit.ly/Bubbles_Aug25)

You will receive your patch in 3 - 4 weeks after the end of challenge.

If you have any questions, please email [info@gsdsw.org](mailto:info@gsdsw.org).