

## DIY SCI: Ghost Bubble

### What is it?

What could be better than some fog on Halloween? A fun and cool experiment with dry ice! Alright, so I'm sure we've all seen what happens when you add water to dry ice...but now add bubbles - sounds crazy cool right?! The science behind it is just as cool! Keep reading to find out exactly what's happening!

**Caution:** Dry ice is frozen carbon dioxide which can be very dangerous if not handled properly. **Never touch the dry ice with your bare hands. Never place dry ice in a completely enclosed container.**

### What you need

- Medium size bowl / container with a rim
- Small bowl for soap and water mixture
- Liquid dish soap
- Warm water
- Absorbent cloth larger than the diameter of the container (a strip or rolled up t - shirt works perfectly)
- Dry Ice

### Part 1:

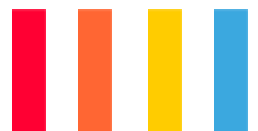
1. Fill the container halfway with water.
2. Slowly pieces of dry ice to the medium sized container and see what happens!

### What do you notice?

What you witness when you combine water and dry ice is called sublimation. Sublimation is the process the dry ice goes through to change from it's solid state straight into its gas phase, skipping over the liquid phase.

### Part 2:

3. In the small bowl, mix together water and liquid soap and dip the cloth into the soapy water to get it wet but not dripping.
4. Wet the rim of the medium sized container
  - a. Repeat steps 1 and 2 if necessary, making sure to use warm water.
5. Take the cloth and pull until it is taut and swipe across the rim of the bowl to create a thin soap film over the rim.
  - a. This may take a few tries



### What do you notice?

Once the soap film is formed the bubble will start to expand. Taking what you know about gases and density, what do you think is making this happen?

Eventually, the coolest part happens, the bubble will burst! The more the dry ice sublimates, the pressure the gas puts onto the thin film of the bubble becomes too strong for the bubble to handle. The bubble's molecules like to be together so they hold on for as long as they can as the gas pushes on it. At some point, the pressure the gas puts on the film is too much that the bubble molecules separate and the bubble pops!

### NGSS

PS1: Matter and its interactions

PS2: Motion and stability: Forces and interactions

5-PS1-3. Make observations and measurements to identify materials based on their properties

