



Project Exploration creates transformative learning opportunities for youth underrepresented in the sciences –particularly students of color and girls – by equipping them with the skills, practices, and mindset needed for a lifelong pursuit of learning. STEM@Home makes activities around science, technology, engineering, and math accessible and fun to do at home. This STEMbook activity, resources, and more are available at www.projectexploration.org/stemathome.

In this activity, you will:

learn more about sublimation with dry ice.



Supplies Required:

- Large bowl
- Water
- Dry ice
- Dish soap
- Cotton rope

Video

Learn how to make a bubble of dry ice: <https://tinyurl.com/y6lfgwa4>

Overview

Dry ice is the solid form of carbon dioxide which is the gas under room temperature. The dry ice will sublime (the physical process that solid turns into gas directly) into carbon dioxide under the room temperature. The sublimation process makes the surrounding environment super cold and causes water vapor in the air to condense. That is where the fog comes from. The thin layer of soap film stretches across the rim of the bowl enclose the expanding cloud to create a giant crystal bubble.



Instructions

1. DO NOT TOUCH THE DRY ICE. The dry ice will burn your skin.
2. Pour about 200 ml water into the bowl and add two or three pieces of dry ice in the bowl.
3. Soak the rope in the bubble solution for 3~5 seconds and wet the rim of the bowl with the bubble solution.
4. Stretch the rope between your hands and slowly pull the bubble solution across the rim of the bowl. It is to create a soap film across the entire bowl. before you are master at it, you need to take some practice.
5. Make observations! What happens?

Additional Resources

Think About It! What would happen if you dropped the dry ice into the bubble solution? What would happen if you poured warm water on the dry ice? Try adding food coloring to the bubble solution to make your bubble easy more eerie.

1. Why is dry ice so dangerous? <https://tinyurl.com/yyhevdp3>
2. More dry ice experiments: <https://tinyurl.com/y3jff6th>

Share It Out

Share on social media: Take a video of your bubble and share it with family and friends. Explain what is happening with the dry ice! Use the hashtags:

#HalloweenScience
#ProjectExploration
#StemAtHome

For more activities like this one, go to www.projectexploration.org/stemhome. If you're interested in learning more about Project Exploration and our free events, programs, and activities, please complete our interest form and a staff member will be in touch with you: www.projectexploration.org/interest.

