

Sticky Ice

Everything has a freezing point, and for water it is 32°F or 0°C. Find out how we can use this information and a chemical reaction to pick up an ice cube with just a piece of string!



Materials:

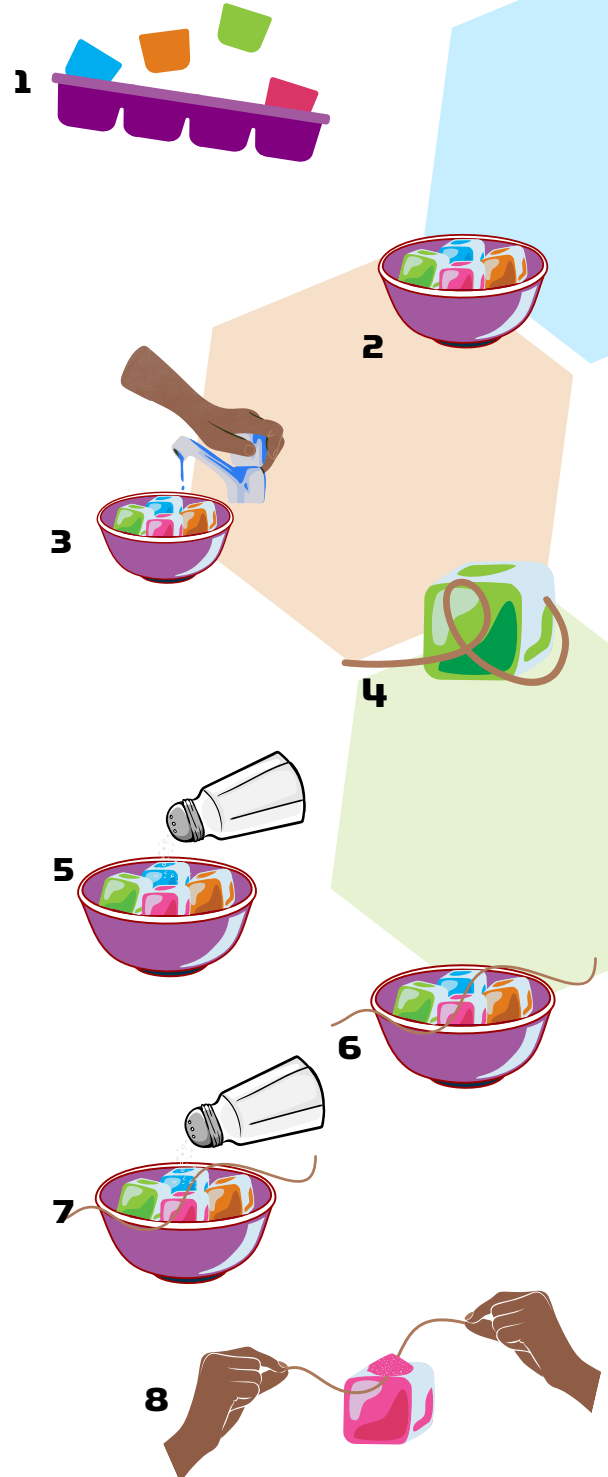
- String
- Salt
- Ice Cube Tray
- Water
- Bowl

Optional Materials:

- Food Coloring

Procedure:

1. Fill the ice cube tray with water and place it in the freezer. Add food coloring to make colorful ice cubes which will help you see the experiment a little more clearly. This may take some time, so be patient or try freezing them the night before you want to do the experiment!
2. Place a few ice cubes in the bowl.
3. Fill the bowl with just enough cold water to cover the ice cubes.
4. Use the string and try to pick up some ice out of the water. Did it work? Why?
5. Sprinkle some salt on the ice cubes. What happens? Do they melt?
6. Next, lay the string across the bowl with the water and ice cubes. Make sure the string is laying across an ice cube.
7. Sprinkle some salt on top of the string and ice. Wait for at least 1 minute.
8. Now try pulling the string up. What happens?

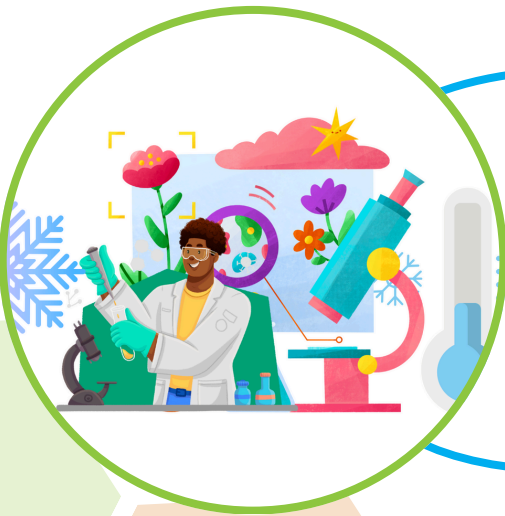
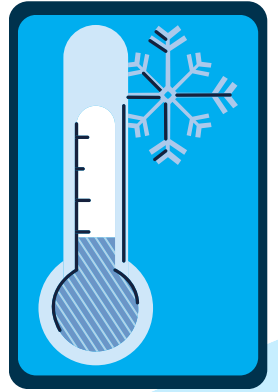


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WHAT'S HAPPENING?

Water has a freezing point of 32°F or 0°C, however when salt is added, it lowers the freezing point below 32°F. This is why the ice cube starts to melt. At the same time, the salt is also lowering the freezing point of the surrounding water.

This means some of the water that has just come from the melting ice cube will refreeze instantly. When we place the string on the ice cube and then sprinkle salt on top, the melting water from the ice refreezes right on top of the string, and you can pick up the ice with just the string!



DID YOU KNOW?

A **cryobiologist** is someone who studies how low temperatures effect living things! If you liked exploring this activity, maybe cryobiology is for you!