

Homemade Ice Cream – Exploring States of Matter

With help from the Oconomowoc (WI) Library

Supplies:

- 2 tablespoons ice cream salt (or Kosher salt)
- pipette
- pint-size freezer bag
- quart-size freezer bag

Ingredients:

- ice (enough to fill the quart-size bag)
- 6 tablespoons heavy cream
- 6 tablespoons half and half
- 2 tablespoons sugar
- 2 drops vanilla

Directions:

- Add the heavy cream, half and half, sugar, and vanilla to the smaller plastic bag. Be careful to add just 2 drops of vanilla!
- Let out as much air as possible before sealing the bag completely.
- Put the smaller plastic bag, the ice, and the salt into the larger plastic bag.
- Seal the larger plastic bag.
- Set a time for 10 minutes, put on some music, and shake the larger plastic bag for 10 minutes.
- Remove the smaller plastic bag from the larger plastic bag. Open, and enjoy your ice cream!

You may wish to add some sprinkles or other ice cream toppings.

To make chocolate ice cream, add 1 tablespoon of cocoa.

The Science:

States of Matter: Objects are composed of matter, which means they have mass and take up space. Matter usually comes in three states: solids, liquids, and gasses. Objects can undergo changes and move from one state to another, often through heating or cooling.

So...what happened inside the bags? Well, the ingredients underwent a physical change. A physical change happens when change occurs, but no new substances form. By introducing movement and a temperature change, the ingredients changed their states from liquid ingredients to a solid. The ingredients are still the ingredients. They just changed into a different state of matter. You could reverse the process by heating the ice cream, and it would change back into a liquid state.

