



Homemade Ice Cream Recipe and Ice Experiments

Description:

Learn how to make your own ice cream at home with items in your pantry! This activity demonstrates how adding salt to ice (frozen water) lowers its freezing point. This is one reason why the ocean freezes at lower temperatures than freshwater and why we put salt on roads in the winter to prevent ice from forming.

Materials:

- 1 cup half and half
- 2 tablespoons sugar
- ½ teaspoon vanilla
- 3 cups ice
- 1/3 cup kosher or rock salt
- 2 ziplock bags, 1 small, 1 large

Directions

1. Combine the half and half, sugar, and vanilla in the small ziplock bag, squeeze the excess air out, and seal it, making sure that the seal is completely closed
2. Combine the ice and salt into the larger bag and squeeze the bag to mix
3. Put the smaller bag into the larger one and close the larger one.
4. Shake and squeeze the bag for 7-10 minutes, being careful not to break it. You might want to put on gloves or wrap the ziplocks in a towel, because it can get quite cold!
5. Take out your smaller bag and wash off any salt that might have gotten on it, then open and enjoy your ice cream with your favorite toppings!!

Extra Ice Experiments

1. Put out two ice cubes on a plate, sprinkle one with salt. Which one do you predict will melt the fastest? Observe the two ice cubes and see what happens.
2. Freeze a couple hard plastic toys in bowls and race to see who can free their plastic figurine first. What works fastest? Warm water? Salt? Friction?
3. Go "ice fishing" with salt. Put a couple ice cubes in a bowl of cold water. Lay a piece of string on top of the ice cube and sprinkle salt where they touch. Wait about 10 seconds and pull on the string, the ice cube should be attached now. Try again with other substances in your kitchen. Does oregano work? How about paprika?
4. Make a shallow block of ice using a small container such as a plastic bowl or small pan. Gather different metals such as coins, paperclips, buttons, etc. and other materials such as plastic toys, small pieces of wood, string or other small objects. Some materials are better conductors and transfer energy to the ice causing it to melt. Make a prediction about which ones will melt the ice and test your hypothesis. Which materials made the ice melt? Which ones didn't?