

# Make Ice Cream in a Plastic Bag

**Purpose:** To investigate the eating and cooling of a mixture.

## **Materials:**

1/2 cup cream  
1/2 teaspoon vanilla  
1 tablespoon sugar  
4 cups crushed ice  
4 tablespoons salt  
2 946 mL zipper bags  
1 3.79 L zipper freezer bag  
a hand towel or gloves to keep fingers from freezing as well!

## **Procedure:**

1. Mix the milk, vanilla and sugar together in one of the quart size bags
2. Seal tightly, allowing as little air to remain in the bag as possible. Too much air left inside may force the bag open during shaking.
3. Place this bag inside the other quart size bag, again leaving as little air inside as possible and sealing well. By double-bagging, the risk of salt and ice leaking into the ice cream is minimized.
4. Put the two bags inside the gallon size bag and fill the bag with ice, then sprinkle salt on top. Again let all the air escape and seal the bag.
5. Wrap the bag in the towel or put your gloves on, and shake and massage the bag, making sure the ice surrounds the cream mixture. Five to eight minutes is adequate time for the mixture to freeze into ice cream.

## **Alternate Procedure (If you are inclined to do this at home):**

### **Coffee Can Ice Cream**

1. The recipe is the same, and may be doubled or tripled because the coffee can can hold more liquid than the baggies.
2. Put the mixture in a standard size coffee can and seal with the plastic lid, then place that can inside a larger “economy size” can.
3. Pack the large can with ice and salt, and seal with the lid. You can roll the can back and forth on the ground (outside – the condensation will drip) until the ice cream is set.
4. The time required to set the mixture will vary depending on the number of servings in the can.

**Results:**

Time	Qualitative Observations

**Questions:**

1. How would you classify the following substances in your experiment?
  - a) the ice cream
  
  - b) the icy salt water
  
2. What is the purpose of the salt?
  
3. What was the purpose of the constant agitation of the cream mixture?
  
4. Why did you try to remove as much air as possible from a) the inner bag and b) the outer bag?
  - a)
  
  - b)
  
5. What is your favourite flavour of ice cream. Give a specific reason.