

# MAKING ICE CREAM

Science is wonderful. It allows us to harness the powers of chemical reactions to do amazing things, often with simple household ingredients. If you love ice cream, one of the greatest things science has gifted you is the ability to make ice cream...by yourself at home. You can do this in a simple Ziploc bag using everyday ingredients in just a few simple steps. I know it sounds too good to be true, but it's not. Let's see how it's done!

As with any recipe, the first thing you'll need to do is gather your ingredients. You'll need ice cubes. You'll need 1 cup of half and half. You'll need 1/2 of a cup of rock salt, 2 tablespoons of sugar, and 1/2 of a teaspoon of vanilla extract. You'll also need two sizes of Ziploc bags: one pint-size bag and one gallon-size bag. Finally, gather your favorite ice cream toppings!

Next, you're going to combine the half and half, sugar, and vanilla extract in the pint-size bag and seal it tight. Then, you'll halfway fill the gallon-size bag with ice cubes. Take the rock salt, and sprinkle it all over the ice cubes. At this point, you may be wondering why we are using salt to make ice cream. Well, salt has a special effect on ice. It makes it easier for ice to melt. When ice melts quickly, quite a bit of energy is absorbed. Everything gets colder, and the half and half mixture freezes. The temperature actually gets colder than the normal freezing point of water because of the energy absorption. When making ice cream, the half and half mixture gets colder until it is the same temperature as the melting ice around it. At that point, it freezes.

Let's get back to the ice cream making! Place the smaller bag *into* the bigger ice-filled bag, and then seal it tightly. It's now time for the fun part. Shake it up! Shake the bag vigorously for around ten minutes. Now you know why it was important to seal them well! As you're shaking, the ice cream mixture will start to become firmer. Once it's solid enough for you, you can remove the smaller inner bag from the ice bag.

Guess what? That's it! You just made ice cream. All that's left to do is add your toppings and enjoy! You can even eat it right out of the bag if you're in a real rush.

**1. Make a list of supplies and ingredients that you will need to make your ice cream.**

**2. What purpose does the salt have on the ice cream making process?**



# MAKING ICE CREAM ANSWERS

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## 1. Make a list of supplies and ingredients that you will need to make your ice cream.

**Ice cubes, half and half, rock salt, sugar, vanilla extract, two sizes of Ziploc bags, and any desired toppings**

## 2. What purpose does the salt have on the ice cream making process?

**The salt lowers the freezing point of water, making the half and half mixture freeze.**

# MAKING ICE CREAM

**Directions:** Create an illustrated step-by-step guide to making ice cream in a bag.

|        |        |        |
|--------|--------|--------|
| Step 1 | Step 2 | Step 3 |
| Step 4 | Step 5 | Step 6 |

Step 1 \_\_\_\_\_

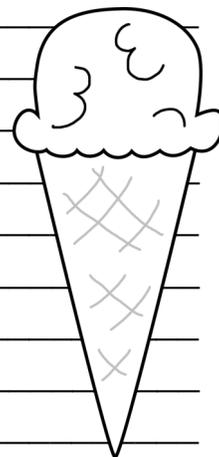
Step 2 \_\_\_\_\_

Step 3 \_\_\_\_\_

Step 4 \_\_\_\_\_

Step 5 \_\_\_\_\_

Step 6 \_\_\_\_\_



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