

## Science

### Let's make some ice-cream

#### Materials

- Measuring spoons
- Measuring cup
- Sugar
- Milk
- Vanilla extract
- Salt
- Ice cubes
- Small, sealable bags, such as pint-sized or sandwich-sized Ziplocs (x2)
- Larger-sized sealable bags (x2)
- Tea towel
- Timer or clock

#### Instructions

1. In each small bag, place one tablespoon of sugar,  $\frac{1}{2}$  cup of milk and  $\frac{1}{4}$  teaspoon of vanilla extract.
2. Seal both bags well.
3. Add four cups of ice cubes to one of the large bags.
4. Then add  $\frac{1}{2}$  cup of salt to the large bag with ice.
5. Put one of the small bags you prepared into the large bag with the ice cubes. Be sure both bags are sealed shut.
6. Wrap the bag in a small towel and then shake the bag for five minutes.
7. Feel the smaller bag every couple of minutes while you shake it, and take a peek at it.
8. Now add four cups of ice cubes to the other large bag, but this time do not add any salt to it.
9. What do you think will happen without using salt?
10. Put the other small bag you prepared into this large bag. Be sure both bags are sealed.
11. Wrap the bag in a small towel and then shake the bag for five minutes, as you did before.
12. Again, feel the smaller bag every couple of minutes while you shake it, and take a peek at it.
13. You can also compare how cold the different ice cube bags feel.
14. Does one feel much colder than the other?
15. If you successfully made some ice cream, you can enjoy it now as a tasty reward for your chemistry challenge!

\*If one doesn't work what should you change to make it work?

**Discussion** Think about how you start out with refrigerated (or room-temperature) ingredients and then need to cool them down to turn them into ice cream. How do the ingredients change during this process? How important do you think it is that they are cooled to a certain temperature? In this activity, you will make your own ice cream in a bag and explore the best way to chill the ingredients to make them become a creamy delicious treat!