

Suzy's World

Ice - Why does ice cream melt so fast?

Fact

- All things that are frozen will melt once they are out of those cold conditions.
- Ice cream is made out of milk or cream which has water in it. Water freezes at 0 degrees Celsius so once the ice cream is at a temperature that is higher than 0 degrees it starts to melt.
- By adding different substances to milk like sugar and flavourings, you find in ice-cream, the ice-cream melts more quickly. That's because the additives change the temperature that the milk will freeze at.
- Things freeze because the small particles that make up water move all the time, but they are slowed down by cold temperature. The colder it is the less they move and the more they stick to other water particles.
- At 0 degrees Celsius those particles stop moving, all stick together and the solid ice is formed.



Do you know

- It has to get much colder than 0 degrees Celsius before sea water freezes – that's because of the salt.
- A lot of the ice at both Poles is fresh water ice.
- Some countries like America don't use degrees Celsius to measure the temperature of things – they use degrees Fahrenheit

Experiments you can do

Make your own ice cream.

What you need:

- ½ cup of milk
- 1 heaped Tbsp of sugar
- ¼ tsp of Vanilla essence
- 1 small zip lock bag
- 1 large zip lock bag
- 2 cups of crushed ice (smash up a couple of trays of ice cubes)
- ¾ of a cup of salt

What you do:

Pour the milk into the small zip lock bag and add the sugar and the vanilla essence. Zip the bag firmly shut. Put the ice into the large zip lock bag. Then put the small zip lock bag in. Pour the salt over the ice and zip the large bag shut. Shake (the bag that is) Keep shaking the mixture goes solid. Then try it. What is it like? Compare it to the ice cream you can buy. Then eat it up – before it melts



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Continued... Why does ice cream melt so fast?

Other Investigations

Which is heavier a solid block of ice or water?

What you need

A couple of ice cubes

A glass

A jug of water.

What you do

Make a prediction about which you think is heavier, ice or water. Write it down and then put an ice cube in the bottom of a glass. If ice is heavier than water it will stay on the bottom of the glass when you pour the water in. If it is lighter it will float.

Is your prediction correct?

Make Racing Ice blocks – which one will melt the fastest?

What you need

3 ice block moulds

Warm water

Sugar

2 teaspoons

green food colouring

red food colouring

2 containers

What you do:

Pour fresh water into one of your ice block moulds as your control ice block. Mix enough warm water to fill an ice block mould with 1 tsp of sugar in one of the containers. Add a drop of red food colouring and stir the mixture until the sugar dissolves. Pour it into the second ice block mould.

Mix enough warm water to fill an ice block mould with 2 tsp of sugar in the second container. Add a drop of blue food colouring and stir the mixture until the sugar dissolves. Pour this into the third ice block mould.

Freeze all three overnight so they are frozen solid. When you are ready to try the experiment write down the time on a piece of paper and bring out the ice blocks and sit them on a plate. Check them every few minutes and see which one melts the fastest.