

# Suzy's World

## Butter - How do you change milk into butter?

### Fact

- You change milk into butter by adding air to the milk through churning or shaking it. This makes the butterfat solidify into butter and separates it from the liquid.
- Milk is a liquid but it also contains solids in an emulsion (an emulsion is a mixture of water and solids).
- Milk is left to stand after it is milked from the cow so that the fatty cream, which is lighter than the liquid, floats to the top.
- The cream is beaten or churned.
- The churning causes the fat in the cream to clump together and break away from the watery milk serum.
- With more churning the fat clumps form butter globules, which are collected and moulded into pounds of butter.



### Do you know

- Butter, cheese, yoghurt, cream and cottage cheese are all dairy products – things that are made from milk.
- When you add an acid, like lemon juice, to milk it separates it into curds and whey (like in Little Miss Muffet) to make cottage cheese.
- Cottage cheese is coagulated milk (co-ag-u-late-ed).
- Milk has harmless bacteria in it that will turn the milk sour if left long enough.

### Experiments you can do

Try making your own butter

#### What you need:

The help of an adult

A bowl

Some cream

An eggbeater (an electric one makes things much easier)

Or a small clear plastic container with a tight fitting lid and 3 clean marbles

#### What you do:

Pour some cream into a bowl and get an adult to help you beat it with an eggbeater. Keep beating and beating until the cream begins to change. If using the plastic container put some cream and the marbles in. Make sure the lid is on tight then shake it up! You'll need to shake for a long time so get someone else to help.

This beating or shaking will form butter globules in the cream. Scoop them out and have a look.

Are they the same colour as the butter you buy? What does it taste like?

Why do you think it's different?



### Other Investigations

What other foods are made from milk?

Can you find out about one product that is made from a milk substance that you can't eat?

### Jokes

How can you tell an elephant has been in your fridge? By the foot prints in the butter.