



LET'S MAKE BUTTER



Equipment

- 1 carton of double or single cream (250ml)
- 1 jam jar with a lid or a plastic container for younger children
- 1 glass
- 1 plate
- A strong pair of arms



Background Information

A mixture is made up of two or more substances which are jumbled together. For example for breakfast you may have a bowl of cereal and milk, this is a mixture. Cream is also a mixture. Let's see how we can separate cream into two parts, a solid and a liquid.

What to do

1. Take the cream out of the fridge. Do you notice that it feels cold?
2. Leave the cream on the table for about an hour. It shouldn't feel cold now, unlike when it came out of the fridge.
3. Pour the cream into the jar until it is about half full.
4. Screw the lid on tight.
5. Take the jar and start shaking it up and down. Play some music and have fun dancing as you shake. Stop and look at the cream in your jar every few minutes. What do you notice?

What happens?

After about 15 minutes you'll feel something solid in the jar. Keep going until you see a solid lump. Take the lid off the jam jar. What do you see?

The solid yellow lump is butter and the whitish liquid is buttermilk.

Why did this happen?

Cream is a mixture. It is made of tiny drops of water mixed with fat droplets and protein. Shaking the cream in the jar makes the fat droplets stick together, forming butter. The liquid part has the protein and that is the buttermilk.



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What next?

Pour the buttermilk into a glass. You can use the buttermilk to make something like buttermilk pancakes. *(Or to make scones or brown bread)*

Rinse the butter in water to remove any buttermilk. You now have unsalted butter. Place the butter on a plate. You can now add a pinch of salt to the butter to make salted butter. Salt was traditionally added in the past to preserve the butter. Enjoy your butter on some freshly made bread or toast.



How can we speed up the butter making?

Place a clean marble in with the cream. Use a plastic container instead of a jam jar *(we don't want your marble to break the glass!)*

Why the marble are you asking?

As you are shaking the cream will come into contact with two solid objects-

1. The sides of the plastic container.
2. Your marble. This speeds up your butter making.

Older children

Older children could do the following as well:

1. Measure an exact volume of cream maybe 150mls.
2. Measure the mass of butter made.
3. Measure the volume of buttermilk made.
4. Estimate and measure the amount of time taken to make the butter with and without the marble.
5. Look up the nutritional value of butter and buttermilk.