



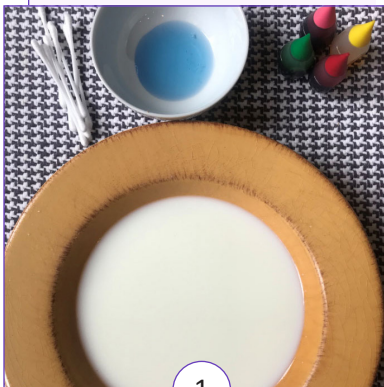
Milk is made up of water, protein, lactose, vitamins, minerals, and fat. For this experiment, fat is needed so use whole milk, or milk that has a fat content of at least 3%. The milk becomes magical as the colours added start to explode once dishwashing soap is dropped in the bowl. This really is an experiment that explores the science of soap.

MAGIC MILK

What you need:

Full fat milk, food colouring, dishwashing soap, cotton swabs, shallow baking dish or dinner plate

What to do:



1

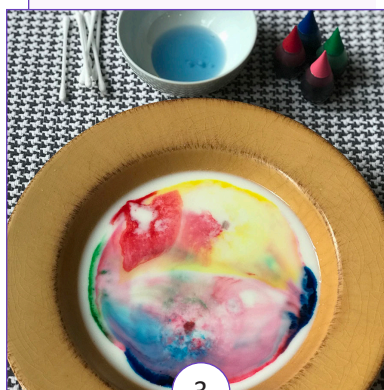
1. Gently heat some milk so that it is warm, about 30 seconds in the microwave should suffice. You don't need much milk, just enough to cover the bottom of the baking dish you have chosen, about 1 cm. (Adult supervision is recommended for this step). Heating the milk is optional.
2. Pour the milk in the dish or plate. (Image 1)
3. Add drops of food colouring to the milk. Try different colours. (Image 2)
4. Add just a bit of dishwashing liquid to the tip of a cotton swab.
5. Gently touch the surface of the milk with the cotton swab with soap and hold it there for 10 seconds. Do not stir, just touch. (Image 3)
6. Observe what happens.
7. Add another drop of soap to the cotton swab and try it again.



2

What is Happening:

Milk is made up of fat molecules. When the dish soap is added to the milk, those soap molecules run around and try to attach themselves to the fat molecules in the milk. That is what soap does, soap molecules and fat molecules are attracted to each other.



3

As the soap moves around looking for fat, it takes some of the food colouring with it. The colours blend together and the result is a myriad of colours, a rainbow in a plate.

Molecules move faster in liquids that are warmer, so this why it is recommended to warm the milk gently.