

Colourful Milk Display

You will need:

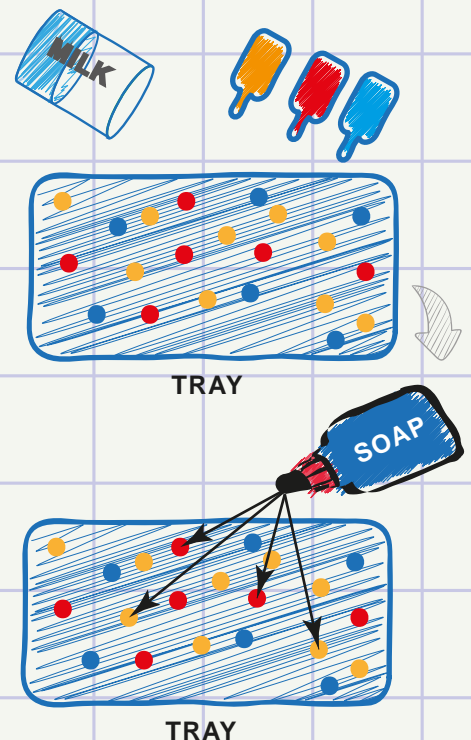
- Adult help
- A baking tray (or large plate)
- Washing up liquid
- A variety of food colourings
- Whole milk (it must be whole milk!)

Let's make it!

Fill your baking tray with milk. If you are using gel food colourings, mix them first with a little water, otherwise add 3-4 drops of each food dye. Make as random as possible! Squirt drops of washing up liquid on top of the food dye! Add more drops until all the colours mix. Another version of this experiment is to use a smaller shallow tray or plate and add food colouring quite close together in the centre of the plate of milk. You will need use your finger or cotton swab. Place a drop of washing up liquid on a cotton swab/finger and dip into the middle of the milk for about 15 seconds. You will get amazing bursts of colours. You can try it again and place the cotton swab at different places in the milk.

How?

Milk is mostly water, but it also contains tiny droplets of fat suspended in solution. Fats and proteins are sensitive to changes in the surrounding solution (the milk). The molecules of fat bend and roll in all directions as the soap molecules race around to join up with the fat molecules. During all of this fat molecule gymnastics, the food coloring molecules are bumped and shoved everywhere, providing an easy way to observe all the invisible activity. As the soap becomes evenly mixed with the milk, the action eventually stops. This is why milk with a higher fat content produces a better explosion of colour—there's just more fat to combine with all of those soap molecules.



Alternative:

