Science 21.01.21

EYFS – Rainbow milk

This lesson will demonstrate the property of surface tension and the effect that soap, a surfactant, has on the surface tension of milk

**What you need:**

* A shallow dish or plate
* Food colouring
* Full fat Milk
* Cotton buds
* Washing up liquid

**How you do it:**

1. Fill the plate with whole milk, and let the milk settle for a minute.

2. Add several drops of different food colouring close together, but separate, in the centre of the plate of milk.

3. Dip a cotton swab in the liquid dish soap, and then touch the tip of the cotton swab to the milk’s surface near the drops of food colouring. Observe the reaction.

4. Then, move the swab to different areas of the plate to initiate more reactions.

Questions to discuss with your child

What happened when you first placed the food colouring on the milk?

What happened to the food colouring when you touched the milk with the cotton bud soaked in soap?

Does it work without the soap?

Does it work with other kinds of milk (not as well because the fat content is lower) or water?

What else could we try?

**Why does this happen?** (Adult explanation)

When soap is added to milk with drops of food colouring on the surface, the soap reduces the surface tension of the milk and reacts with the fat in the milk. This causes the fat particles to move and create swirls of colour.

Your child could draw before/after pictures to show what happened.