

Bentleigh West Kindergarten Inc.

HOME LEARNING – Science experiment



MAGIC MILK SCIENCE

What you need:

- Milk (full cream works best)
- Bowl
- Food colouring (prime colours red, blue and yellow)
- Cotton swap (you can use a pencil)
- Dishwashing liquid (any brand)

Experiment:

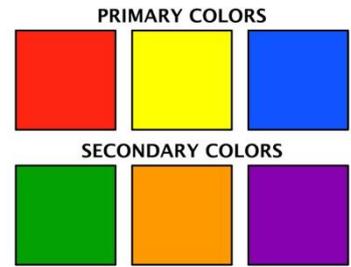
1. Pour enough milk (full cream) onto a bowl to cover the bottom.
2. Drop food colouring onto the milk at different points but not close together (don't do too many 3-5 is enough). When we do this at kinder, we use prime colours yellow, red and blue and discuss the secondary colours the experiment makes)
3. Dip a cotton swab (or pencil) in dishwashing detergent liquid.
4. Touch the coated swab (or pencil) into the milk and watch.
5. The colours will swirl as soon as the detergent comes into contact with the liquid.

What is happening?

Milk consists of a lot of different types of molecules, including fat, protein, sugars, vitamins, and minerals. If you touch a clean cotton swab to the milk (try it!) The cotton is absorbent, so you would have created a current in the milk, but you wouldn't have seen anything especially dramatic happen. When you introduce detergent to the milk, several things happen at once. The detergent lowers the surface tension of the liquid so that the food colouring is free to flow throughout the milk. The detergent reacts with the protein in the milk, altering the shape of those molecules and setting them in motion. The reaction between the detergent and the fat forms micelles, is how detergent helps to lift grease off of dirty dishes. As the micelles form, the pigments in the food colouring get pushed around. Eventually, equilibrium is reached, but the swirling of the colours continues for quite a while before stopping.

Just like the pepper and water experiment this one shows the change in surface tension. But a lot of fun can be had just looking at and exploring the changes in the milk and the colours that are made.

Primary Colours: These are colours that cannot be created through the mixing of other colours. They are colours in their own right (red, yellow and blue)



Secondary colours: These are colours that can be made by mixing two primary colours together (green, orange and purple).

Here are some photos from a previous group of children conducting the experiment.

