

## CORNFLOUR SLIME

### You will need:

- A large bowl
- Food colouring
- 200ml water
- 200-300g cornflour

### Instructions:

1. Pour the cornflour into the bowl.
2. Pour the water in, mixing slowly as you go. Keep adding more water until the mixture becomes thick (and hardens when you tap on it).
3. Add a few drops of food colouring to make your slime the colour you want it.
4. Put your hands in the slime and experiment with handling it.
5. What happens when you pick the slime up, squeeze it or even punch or slap it?
6. Do you think it is a solid or a liquid?
7. How is it different to water?

### Why does this happen?

The slime is a non-Newtonian liquid which means it is different to 'normal' liquids. It gets thicker when it is pushed or pressed down. The cornflour is not actually dissolved in the water so when pressure is put on the mixture, the water molecules are pushed away. Other non-Newtonian liquids react in different ways to pressure. Tomato ketchup gets runnier if you shake it. If you whip cream for a long time, it gets thicker and thicker.



## FIZZY COLOURS

### You will need:

- Paint pots or plastic cups
- Shallow tray
- White vinegar
- Paintbrushes
- Bicarbonate of soda
- Food colouring

### Instructions:

1. Pour out the bicarbonate of soda into the tray and spread it out.
2. Drop a few blobs of different coloured food colouring into each paint pot.
3. Top up to half full with white vinegar.
4. Put a paintbrush or medicine syringe into each paint pot.
5. Suck the coloured vinegar into the syringe or soak the paintbrush.
6. Drip the colour into the tray. What happens to the powder? What happens to the liquid?
7. Once you have dripped 2 or more colours use the brush to mix the 2 colours together. What happens?
8. What can you see in the mixture?

### Why does this happen?

You just made a chemical reaction! You mixed the acid (vinegar) and the alkali (bicarbonate of soda). Did you see the bubbles of carbon dioxide ( $\text{CO}_2$ )? That is a gas. The bicarbonate of soda is an alkali, it reacts or changes when it mixes with an acid like vinegar because they are very different. If you mix either one with water (which is neutral, not an acid or an alkali) nothing happens because they are not as different.

## RAINBOW COLOUR MIXING

### You will need:

- A bowl
- A cup of milk (whole or 2%)
- Food colouring colours
- Washing up liquid

### Instructions:

1. Carefully pour a cup of milk into a bowl.
2. Taking care not to mix the colours, drop three drops of one food colouring at one side. About a third of the way around, add three drops of another colour and another third of the way around, add three drops of another colour.
3. Next, squeeze a drop of washing-up liquid into the centre of the bowl.
4. What happens to the colours?

### Why does this happen?

Milk is mainly water with another big ingredient: fat. The washing-up liquid bonds with the fat in the milk. The food colouring is pushed out because the bond is so strong.



## RAIN CLOUD IN A JAR

### You will need:

- Shaving cream
- A clear large jar
- Water
- Blue food colouring
- Pipette/eyedropper
- Small bowl

### Instructions:

1. Fill the large jar with water, leaving 2 inches at the top.
2. Add the shaving cream to the top of the water until it reaches the top of the jar.
3. Next, add 1 cup of water to the small bowl and 3 drops of blue food colouring.
4. Mix the water and food colouring together.
5. Use the pipette to add drops of the water mixture to the top of the shaving cream cloud.
6. Continue adding the water mixture until you begin to notice the raindrops begin to break through the bottom of the cloud.

### Why does this happen?

The shaving cream represents the clouds and the water represents the air. The coloured water represents rain. As the coloured water saturates the “cloud”, it gets heavy and eventually is so heavy that it can no longer hold the water. It “rains” down into the jar – through the “air”. It is just like real rain falls through the air.

