

# WALT work scientifically.

What is working scientifically?



I can ask simple scientific questions.

I can use simple equipment to make observations.

I can carry out simple tests.

I can identify and classify things.

I can suggest what I have found out.

I can use simple data to answer questions.

# WALT work scientifically.

Choose one of the experiments/activities on the next few slides to complete at home and think scientifically as you do it.

There are questions on each of the experiments that will help you to think and work scientifically.

Once you have completed the experiment, write a few sentences to explain what you have found out.

e.g. I did an experiment to .....

I have found out that ..... because.....



## Fizzy Colours

You will need:



Shallow tray

Paint pots or plastic cups



White vinegar



A few tubs of bicarbonate of soda

Paintbrushes or medicine syringes



Food colouring in several colours



### Method:

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?



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## Paper Towel Colour Mixing

You will need:



Water



Kitchen roll



Plastic glasses



Food colouring in primary colours

### Method:



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1. Put red food colouring into one glass and blue food colouring into another glass. Add water to both glasses.
2. Using 1-2 sheets of kitchen roll, roll length ways into a tube.
3. Bend in half and dip one end into each glass.
4. Watch what happens as the colours travel.
5. What can you see happening? What happens to the colours?
6. What colour can you see where the blue and red meet?

## Rainbow Colour Mixing

You will need:



A bowl



A cup of milk  
(whole or 2%)



Different colours  
of food colouring



Washing-up  
liquid

### Method:

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?



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## Cornflour Slime

You will need:



A large bowl



200ml water



Food  
colouring

200-300g cornflour

Aprons

Large covered table or  
area where mess is not  
a problem



### Method:

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?



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# The Science Bit!

## Fizzy Colours

You will need:

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Shallow tray

Paint pots or plastic cups



White vinegar



A few tubs of bicarbonate of soda



Paintbrushes or medicine syringes



Food colouring in several colours

### The Science

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.

## Paper Towel Colour Mixing

You will need:



Water



Kitchen roll



Plastic glasses



Food colouring in primary colours

### The Science

Water moves up the paper towel because the paper is absorbent, it sucks up water. The colour travels with the water making the paper change from white to red or blue. Colours mix when they are joined together, red and blue make purple. See what colours can be made with just the primary colours.

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## Cornflour Slime

### You will need:



A large bowl



Food  
colouring

Large covered table or  
area where mess is not  
a problem



200ml water

200-300g cornflour

Aprons



### The Science

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.

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## Rainbow Colour Mixing

### You will need:



A bowl



A cup of milk  
(whole or 2%)



Different colours  
of food colouring



Washing-up  
liquid

### The Science

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.

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