

Science Home Learning



Science is all about awe and wonder! We have chosen some interesting Science Experiments that you can do from home using everyday equipment and ingredients.

In school we focus on 'Working Scientifically'. The children will all work on these skills depending on their age and ability. The list below will give you some ideas of skills to support your child on while having fun with the experiments.

- **Predicting** can your child predict what they think might happen?
- Questioning ask how, why, what will happen if ...?
- Observe and Investigate talk about what they can see or hear/ explain what's happening/ spot patterns/ compare/ begin to use measurements to record.
- **Record** draw what happened/ label a picture/ take a photograph/ write a report on what happened.
- **Conclusions** were your predictions right? Why do you think that happened? Do you want to find out anything more?
- Fair Test We talk about how to make a test fair by keeping the variables the same each time. What would happen if you changed something in the experiment?

Useful websites-

<u>http://www.sciencefun.org/kidszone/experiments/</u> <u>https://www.bbc.co.uk/cbeebies/curations/science-activities</u> <u>https://www.bbc.co.uk/bitesize/subjects/z6svr82</u>

<u>Activity 1 – Lava Lamp</u>

Materials:

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- A clean plastic bottle, try to use one with smooth sides
- Water
- Vegetable/ Sunflower Oil (or you could use Baby Oil instead)
- Bicarbonate of Soda (or Fizzing tablets such as Alka Seltzer)
- Food Colouring Watch the Lava Lamp Experiment here!

Instructions:

https://www.bbc.co.uk/cbeebies/makes/lets-go-club-fizzy-lava-

1 Fill the bottle up about 1/4 with water.

2 Pour the vegetable oil in the bottle until is almost full. You may want to use a measuring cup with a spout or a funnel. You may have to wait a couple of minutes for the oil and water to separate.

3 Add a few drops of your favourite food colouring. Watch as the colour sinks through the oil. Did your drops of colour mix with the water immediately or float in between for a few minutes?

4 Break your fizzy tablet in half and drop part of it into the bottle. Get ready ... here come the bubbly blobs!

5 You can even get a torch, turn off the lights and drop in another half tablet. This time shine the torch through the lava lamp while the blobs are bubbling!

How it Works:

The oil floats on top of the water because it is less dense or lighter than water. The food colouring has the same density as the water so it sinks through the oil and mixes with the water. When you add the tablet it sinks to the bottom then starts to dissolve. As it dissolves it makes gas, carbon dioxide. Gas or air, is lighter than water so it floats to the top. The air bubbles bring some coloured water with them to the top. When the air comes out of the coloured water blob, the water gets heavy again and sinks. It does this over and over again until the tablet is completely dissolved.

Extra Experiments:

• What happens if you put the cap on after dropping the fizzy tablet in?

- What if you drop a whole tablet in?
- When it stops bubbling, try sprinkling some salt into your lava lamp. What happens?

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Activity 2 – Storm in a Glass

Materials:

- Shaving cream •
- A large glass
- Water •
- Food colouring •
- A spoon

Watch Joe as he makes the Storm in a Glass experiment here! https://www.youtube.com/watch?v=GVW5OOExQxM&feature=youtu.

Instructions:

1 Fill the glass 1/2 full with water

2 Spray some shaving cream on top of the water to fill the glass to $\frac{3}{4}$ full.

3 Use your finger or a spoon to spread the shaving cream evenly over the top of the water. The top of the shaving cream should be flat.

4 Mix $\frac{1}{2}$ -cup water with 10 drops of food colouring in a separate container.

5 Gently add the coloured water, spoonful by spoonful, to the top of the shaving cream.

6 When it gets too heavy, watch it storm!

Watch Scientist Joe conduct the experiment here!

How it Works:

Clouds in the sky hold onto water. They can hold millions of gallons! The layer of shaving cream is our pretend cloud in this experiment. The shaving cream layer can also hold onto water. Clouds can't keep storing more and more water forever, eventually they get too heavy. When that happens, the water falls out (precipitates) as rain, snow, sleet, or hail.

Extra Experiments

Try more water and less shaving cream, or less water and more shaving cream. Which one looks more like a drizzle, and which one looks like a downpour?

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<u> Activity 3 - Skittles</u>

Materials:

- Skittles
- Plate
- Warm water

Instructions:

1 Place Skittle on the plate in a circle around the of the plate.

2 Pour water until plate is covered.

3 Don't pour so much that the water leaks over.

4 Wait and observe for 2-3 minutes as the outer dye appears to melt into the water.

5 What a masterpiece you have created!

How it Works:

Skittles dissolve very quickly when wet. That's why our saliva breaks them down quickly. The outer layer, which has the different coloured dye, is the first to dissolve. When this happens, the colours spread in the water and make a really cool design.

Extra Experiments:

- Try using less Skittles, are the colours able to spread to the edges of the plate? Try making a different pattern.
- With your parent's permission, taste one of the partially dissolved Skittles, does it taste the same or different?
- Try a different colour, do they taste the same or different?
- Use vinegar instead of water, does it still have the same results?

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• What happens if you use different types of sweets/ food?



Materials:

- Small plastic bottle •
- Brown modelling clay (if required)
- Bicarbonate of soda (Baking powder) •
- White vinegar
- Plastic container
- Washing up liquid

Instructions:

Red food colouring



https://www.bbc.co.uk/cbeebies/makes/nina-and-the-neurons-volcano

Watch Nina and the Neurons show you what happens ...

1 Take the plastic bottle and use the modelling clay to make a cone shape around it. Use more modelling clay at the bottom than the top to make the volcano shape.

2 Put your volcano onto a tray.

3 Add the ingredients-

- a small squirt of washing up liquid (about 2 tablespoons),
- 1 tablespoon of red or orange food colouring
- 2 tablespoons of bicarbonate of soda

4 Finally pour in the vinegar and watch your volcano erupt!

5 Afterwards, you can wash your volcano and make it erupt again and again.

How it works:

The cool red lava formed is as the result of a chemical reaction between the baking soda and vinegar. ... As the carbon dioxide gas is produced, pressure builds up inside the plastic bottle, until the gas bubbles expand (which is as the result of adding a detergent) out of the 'volcano'.

Extra experiments:

Try changing the quantities of the ingredients or the shape/size of the bottle.

Activity 5- Dancing raisins

Materials:

- Bottle or large glass
- Raisins
- Bicarbonate of soda (Baking powder)
- Vinegar
- Fizzy water can be used instead of the Bicarbonate of soda and vinegar.

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Instructions:

- 1 Mix 2 tablespoons of Bicarbonate of soda into some water.
- 2 Put the raisins into the water mix
- 3 Add some vinegar
- 4 Watch the results!

How it works:

The vinegar and Bicarbonate of soda react and produce carbon dioxide bubbles. As the bubbles are full of air they float the raisin to the surface. The bubbles then pop and the raisins sink back to the bottom of the bottle/ glass.

Extra experiments:

- What happens when you use different objects? Eg. Lego/ frozen peas/ sweets/ grapes?
- Does the size and shape of the bottle or glass make a difference? Will the raisins dance to the top of a long thin bottle?

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Watch CBBC clip of the experiment here...

https://www.bbc.co.uk/cbeebies/watch/cbeebies-house-dancing-



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