

Activities with Ojo

This month OjO activities are based around science as in the U.K. every year in March **British Science Week** takes place. This year between March 11th - 20th across the whole of the U.K. in schools, colleges, museums, libraries, and even in supermarkets there will be huge range of science based events taking place.



"The idea behind the program is to raise awareness, spark enthusiasm and celebrate science, engineering, technology and math with people of all ages and from all walks of life. So why not pop on your lab coat and have some scientific fun!"



Getting children interested in science at a young age is very important as there is research which suggests that by the age of 7, most children have developed either a positive or negative attitude towards science education that will remain entrenched. Even the simplest activities can introduce children to scientific concepts and stimulate scientific thinking.

In this activity pack you will find...

It's a Solid...It's a Liquid...NO, It's Ooblek! **Chromatography Flower Posy** **Simple Spinner**

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Activities with Ojo

Activity 1 / one / It's a Solid...It's a Liquid...NO, It's Ooblek!

Ooblek, in case you have never heard of it, is a suspension of cornstarch (cornflour) and water that can behave like a solid or liquid, depending on how much pressure is applied.

You will need:

Cornstarch
Water
Food colouring or tempera paint (optional)
Measuring cups
Bowl
Dish
Spoon



"Materials that behave like this and can mimic the qualities of both solids and liquids are known as non-Newtonian fluids."

-Christine, Ojo Educator

How to play:

I haven't given specific quantities as it depends how much Ooblek you want to make but the ratio is approximately one cup water to 1.5 cups cornstarch.

1. Put one and a half cups of cornstarch into a bowl then add most of one cup of water and stir well with a spoon. Keep a little back as you can never be exactly sure of the amount you will need. You will easily recognize when you have reached the correct consistency, if it seems too dry and solid add a few more drops of water. You want it to get to the point where it breaks apart if you draw a finger quickly down the middle but comes back together again quickly.
2. If you want to add food coloring or paint, add it to the water before you mix it with the cornstarch.
3. I usually tip the Ooblek into a shallow dish or tray once we've made it as it's easier to use, but it's your choice.
4. Now you can squash it...scoop it...smash it...squeeze it, whatever you can think of and just see what happens.

My grandson likes me to hide some of his small dinosaurs in the Ooblek so he can 'excavate' them, use your imagination and have some fun!

Please note

You should be able to store and reuse your Ooblek for up to 2 weeks if you keep it in an airtight container and refrigerate.

Please put your Ooblek in a bag and dispose of it in your trash bin.



Activities with

Activity 2 / two / Chromatography Flower Posy

First the science bit! Chromatography is used to separate mixtures of substances into their components based on the small differences in solubility of different molecules. The mixture is separated by passing a solution through a medium.

You will need:

White Coffee filters (basket ones work best but any will do)*

Water based marker pens

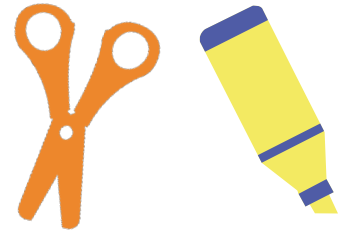
Scissors

Clear tape

Small sticks/twigs/or pipe cleaners

Small cups

*If you don't have any coffee filters you can cut circles of kitchen roll and use them instead



How to play:

1. Take a coffee filter paper and flatten it out. (If using the basket ones). You will need one for each flower you want to make. Make sure you have something underneath to protect the surface as the marker will go through the coffee filter.

2. Draw a thick ring around the centre of the coffee filter, where the ridged part meets the flat centre. If using the triangular ones a thick line about 5 cm from the tip will work.

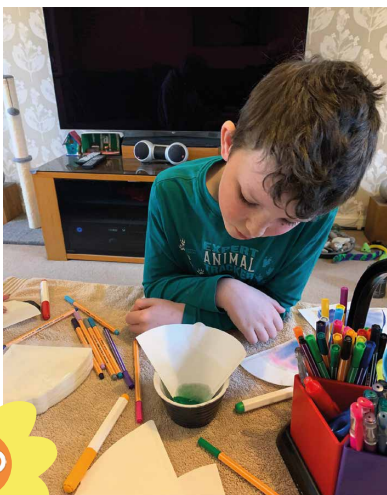
2. Draw a thick ring around the centre of the coffee filter, where the ridged part meets the flat centre. If using the triangular ones a thick line about 5 cm from the tip will work.

3. Fold the coffee filter loosely in half and then in half again, making a cone shape.

4. Place the point of the cone into small glass with a couple of centimetres of water in the bottom. Only the tip of the cone should be touching the water, you don't want the marker ring to get into the water because it will change the water colour. If that happens just change the water!

5. Let it sit and watch what happens as the filter starts to take up the water. Allow 20 - 30 minutes before removing from the water.

6. Repeat the process with different coloured markers.



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next page!



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Activities with

Activity 2 / two / Chromatography Flower Posy



7. Once the water has reached the outer edge of the coffee filter take it out of the glass, flatten it out and place on newspaper or other paper to dry out completely.

8. Once they are dry you can transform them into flowers.

9. First trim off any white edges that still remain.

10. Fold the coffee filter in half twice then use your scissors to round the edge of the cone you have made .

11. When you open up the coffee filter you will see the lovely flower shape you've made.

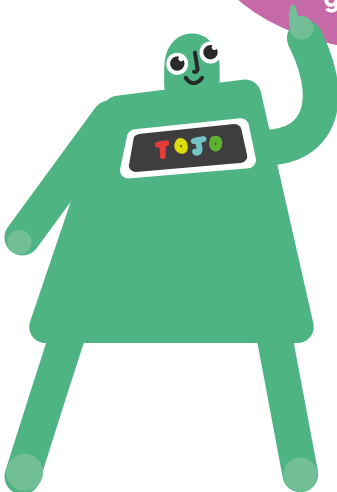


12. Pinch the middle together to form a mimi stem and secure it with tape.

13. Then tape your stick/twig or pipe cleaner.

14. You can add leaves if you wish before you place them in a small cup or glass before handing them over.

In the U.K. we celebrate Mothers Day on Sunday March 27th, this would be a lovely little gift for a child to give to Mum.



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Activities with Ojo

Activity 3 / three / Simple Spinner



What is the science behind it?

"The paper spinner spins as it falls. When it starts its fall, the air pressure under the wings increases (air resistance). This causes an upward force underneath the wings which slows the spinner down. The increased pressure also causes a sideways push on the vertical part at the top of the spinner (where the pink dot is). The same thing will be happening diagonally opposite under the other wing (dotted pink line), which causes the spinner to spin. The faster the spinner falls the greater the sideways push, and so the more it spins."

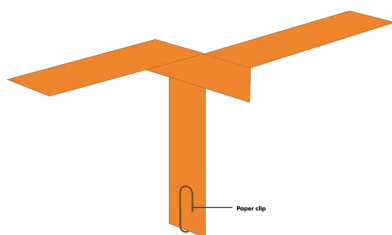
www.science-sparks.com

You will need:

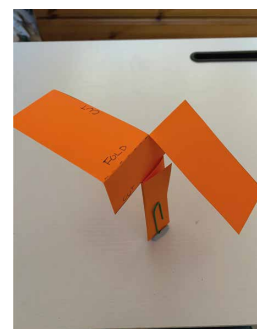
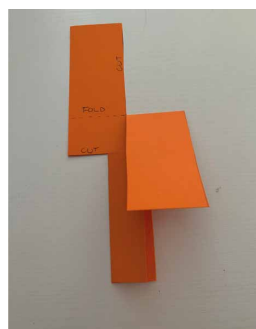
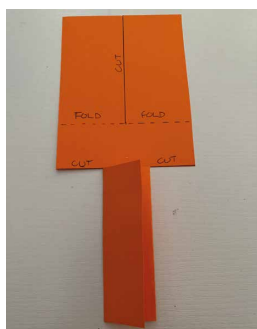
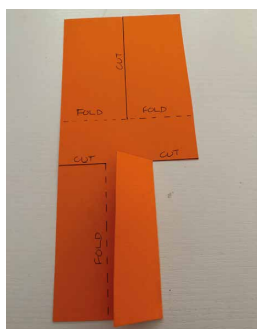
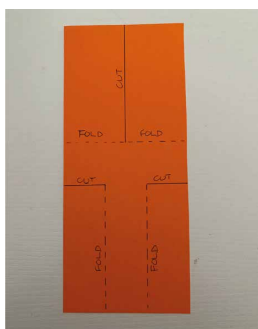
Paper - different types of paper or card
Paper clips
Scissors
Spinner template
Pencil

How to play:

1. Make your template
2. CUT along the solid lines and FOLD along the dotted lines. Try to make nice sharp creases.
3. Fold the 3 strips into the middle
4. Pop a paper clip on the bottom of the three folded pieces which make the tail of the spinner.
5. Fold the two 'wings' in opposite directions and you're done and ready to fly and see what happens.



Stretch up as high as you can and just let go and watch what happens!



Things to talk about:

What happens when you let your spinner drop?
Could you make it spin faster?
Could you slow it down?
Does it make a difference if you use card or tissue paper?
What happens if you make the tail longer?



Our Atomic Force board game is great for teaching kids fundamental chemistry concepts!

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