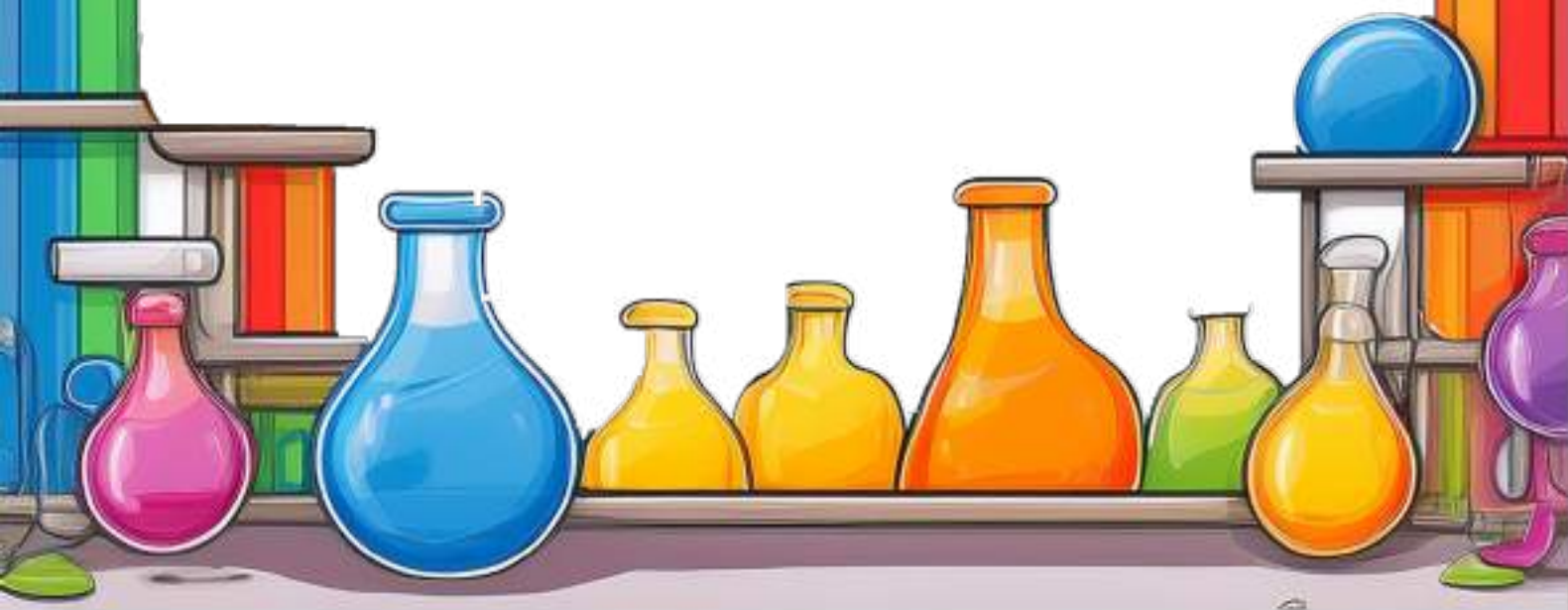




RAINBOW LAB

BRINGING THE SCIENCE OF COLOUR TO YOUR HOME





Hi,

The following 11 activities are designed for little scientists to try at home or in school.

They were all carried out at home, not in a laboratory.

Where we used equipment (like test tubes), a cup, container or bottle would work just fine.

The majority of the ingredients can be bought in a supermarket, the vortex connector was ordered online.

Don't miss your chance to win a Rainbow Lab Kit. See the competition on page 15.

We hope you have fun and let us know if you have any feedback or suggestions.

Rebekah and Oran



ACTIVITIES

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RAINBOW BRIDGE



1. Add a few drops of red, yellow and blue food dye to 3 containers of water.



2. Give the containers a stir to mix the dye.



3. Fold 2 pieces of kitchen paper at least twice.



4. Put 1 of the pieces of kitchen roll between red and yellow, and the other between yellow and green.



5. After a short while we will have a Rainbow Bridge. You can even see the red and yellow mix to make orange, and the yellow and blue mix to make green.

RAINBOWS WITH MILK

1. Put a thin layer of whole milk onto a plate. Add drops of red, yellow and blue food dye to the surface of the milk.



2. Now add a few drops of washing up liquid in the centre of the plate and watch what happens.



The washing up liquid breaks down the fat in the milk, causing the molecules to move around the plate. This mixes the colours too.

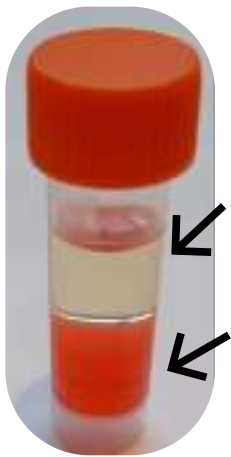
3. See what different patterns you can create.



Tap **HERE** or use the QR code for a YouTube video of this experiment.



RAINBOWS WITH OIL



Cooking
oil

Water
with
food
dye

1. Put some water with a drop of food dye into a container.

Now pour some cooking oil on top.



2. Make sure the lid is on tight.

Now shake as much as you can.

It looks like we've mixed the liquids.



3. Now leave the container on a flat surface.

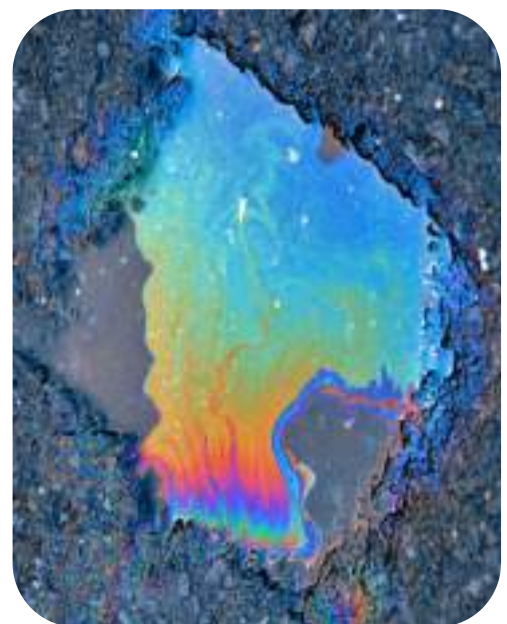
In less than 2 minutes the oil will be back on top.

The liquids cannot mix.

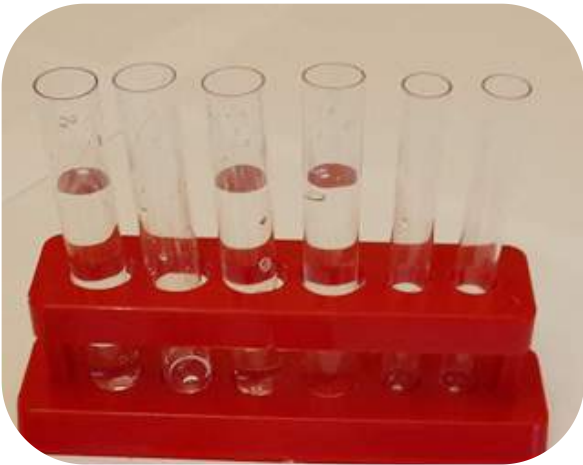
Have you ever seen a rainbow in a puddle on the side of the road?

A thin layer of oil floats on top of the water, just like in this experiment.

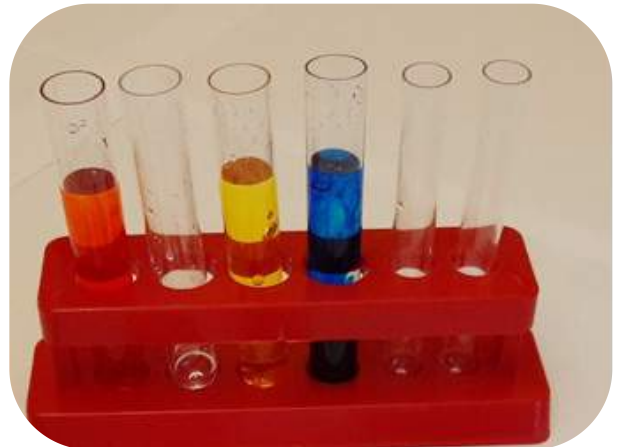
Sunlight **REFRACTS** in the oil, bounces back off the water, and we see a rainbow.



COLOUR CREATOR



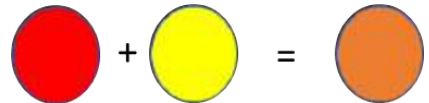
1. Put water into 3 test tubes (or containers).



2. Add a few drops of red, yellow and blue food dye to each.



3. Now start mixing the colours using the pipettes.



In theory it will look like this.



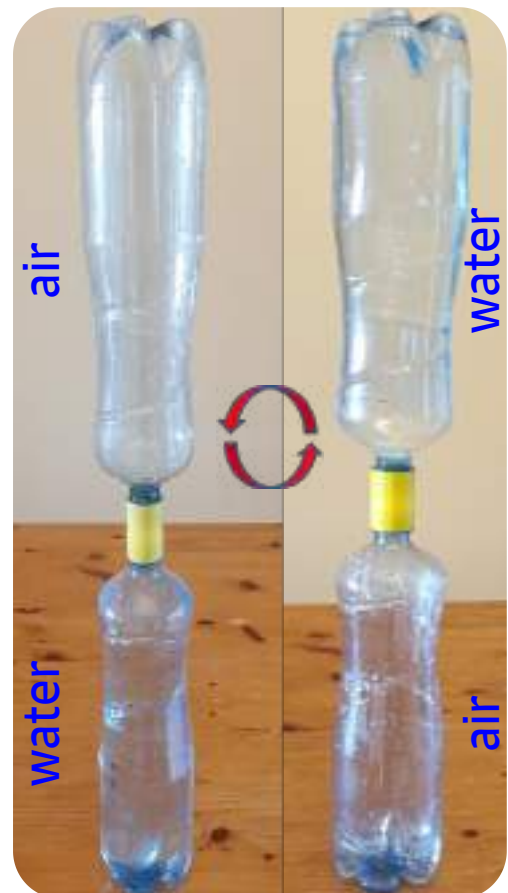
See what colours you can create.

VORTEX



1. Fill a bottle with water and attach the Vortex Connector on top. It helps to remove the plastic ring from the original bottle cap.

2. Screw an empty bottle into the top of the connector. Turn both bottles upside down. Why doesn't the water flow into the empty bottle?



3. Keeping the lower bottle touching the table, vigorously rotate the top bottle in a circular motion a number of times to get the water spinning. When you let go, the vortex should start.

Tap **HERE** or use the QR code for a YouTube video of this experiment.



4. Add food dye for a coloured vortex.

You can also add in objects, like poor Lego Spiderman, trapped in a vortex.



RAINBOW CIRCLE

This activity is similar to RAINBOW BRIDGE but it is a little trickier. It may require help from an adult. For best results it should be left over night.



1. Arrange 6 containers in a circle and fill every second container with water.

Add a few drops of red, yellow and blue food dye to the containers with water.

Leave the other 3 containers empty.

2. Fold 6 pieces of kitchen paper at least twice.

Wet one of the ends of each piece. This helps to keep the paper folded.



3. Now start bridging the gaps between the containers.

Putting the wet ends of the kitchen roll into the empty containers helps keep them in place.

Colours should immediately start moving across the gaps.

RAINBOW CIRCLE

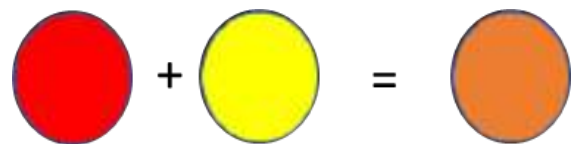


4. After a while the empty containers begin to fill up with the colours from either side.

You can even see the colours start to mix.



5. If you leave the circle over night you will get a full Rainbow Circle the next morning.



FLIPPING A RAINBOW



1. Draw a rainbow onto a piece of paper or card and fill a round clear glass with water.

The glass must be round for this to work correctly.

2. Place the glass close to the rainbow and take a look through.

The order of the colours is the same but they are magnified.



3. Now place the glass further back from the rainbow and take a look through.



The order of the colours is backwards. Our water lens has inverted the image of the rainbow.

Tap **HERE** or use the QR code for a YouTube video of this experiment.



WATER LENS



1. Place a torch beside a round clear glass of water. The beam spreads out or **DIVERGES**.



2. As you move the torch back, the beam is more even. This beam is **PARALLEL**.



3. As you move the torch back even more, the beam gets narrower. It **CONVERGES** to a point called the **FOCUS**.

GROWING GUMMY BEARS



1. Put a Gummy Bear into a glass of water.



2. After 3 hours it will have more than doubled in size. The Bear is **ABSORBING** the water.



3. If you leave it in over night it will be even bigger.



4. We can change the colour of the Bear too if you put food dye in the water.

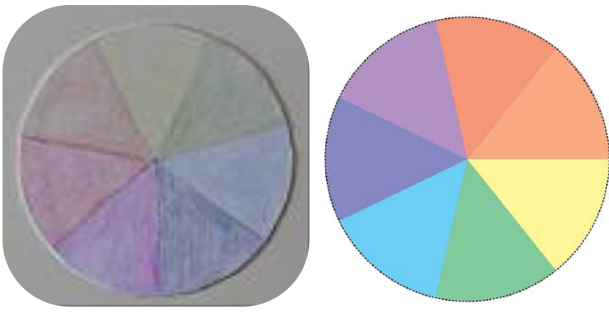


5. After 3 hours it will have more than doubled in size AND changed colour. The Bear has **ABSORBED** the red water.



6. If you leave it in over night it will be even bigger and the colour will be clearer.

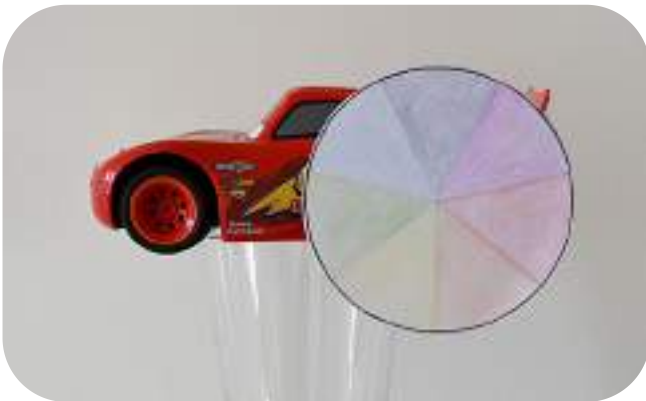
REVERSING THE RAINBOW



1. Colour a rainbow disc on a circle of paper. Paste your disc onto a round piece of cardboard.



2. Use Blue Tack to stick the disc to a wheel on a remote control car.



3. Support the car from underneath and make sure the wheel can turn freely. Now drive the car and watch what happens.

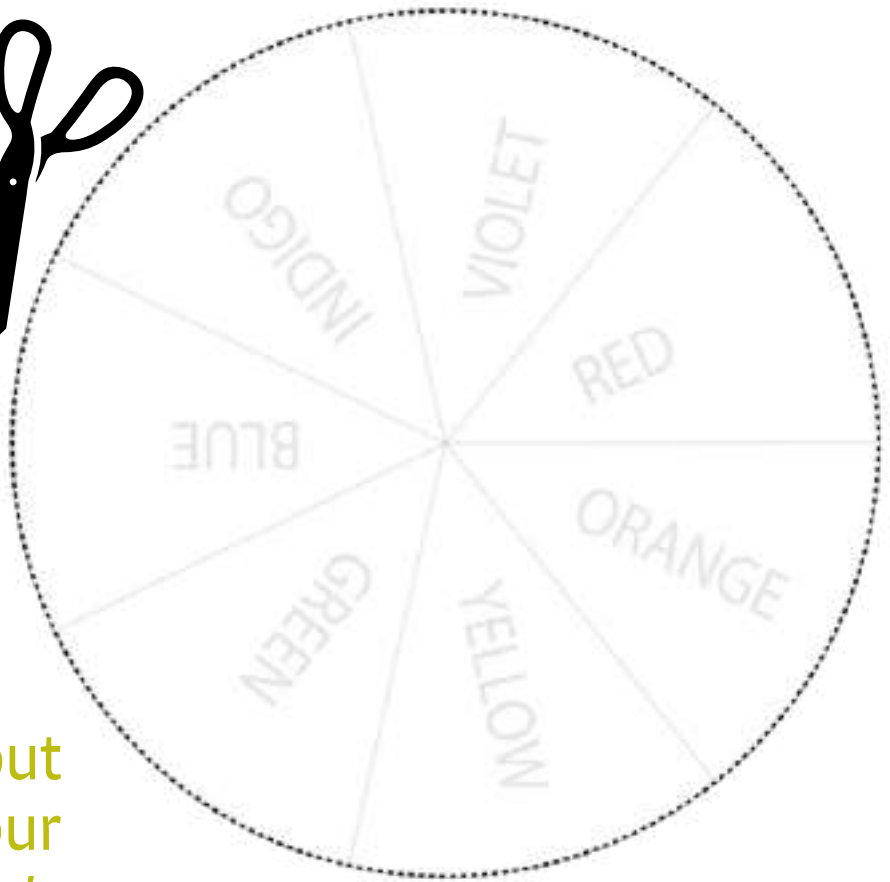
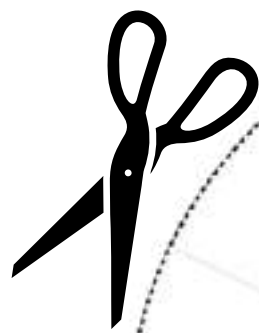
4. Why does the disc appear white when it's rotated?

When the disc is rotated quickly the colours are mixed up and appear as white. This is how Sir Isaac Newton showed that white light is a combination of the colours of the rainbow.

Tap **HERE** or use the QR code for a YouTube video of this experiment.



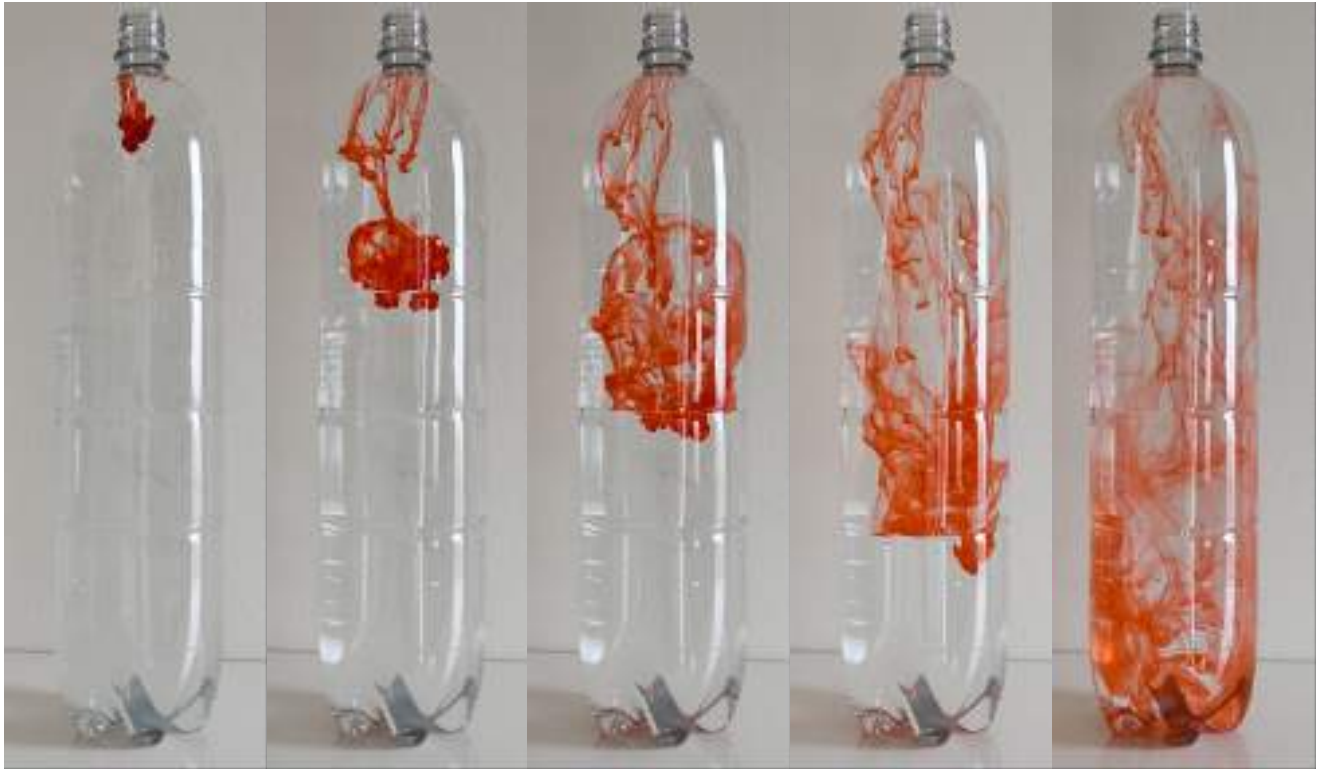
REVERSING THE RAINBOW



Print, cut out and colour your own Newton's Disc or use the ready – to – go disc below.



DIFFUSION PATTERNS AND COLOUR MIXING



Add a few drops of food dye into a large bottle full of water.

The food dye spreads out (**DIFFUSES**) through the water, making beautiful patterns.

If the water is COLD, the dye will DIFFUSE SLOWLY.

If the water is HOT, the dye will DIFFUSE QUICKLY.

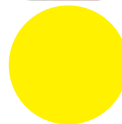
DIFFUSION PATTERNS AND COLOUR MIXING

You can also mix two colours to make a new colour.

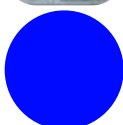
Just add the 2nd colour, put the lid on the bottle and shake well.



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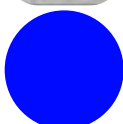
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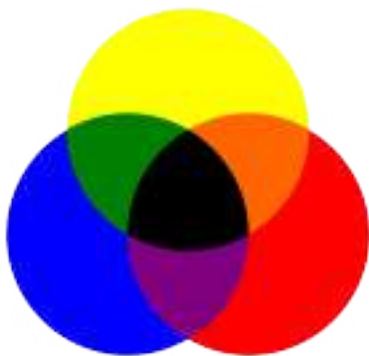
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WIN A RAINBOW LAB SCIENCE KIT



RAINBOW LAB
BRINGING THE SCIENCE OF COLOUR TO YOUR HOME



For your chance to **win** a Rainbow Lab Kit, filled with all the equipment to do the activities, just complete the short survey below.

- Deadline for entries is 23rd November 2025.
- The winners will be selected by Lucky Draw on 26/11/25.
- 1 entry per person.
- Entrants must be located in Ireland.

Use the QR Code below or tap the link to enter:



[https://forms
.office.com/e/
Tm21C67Kxh](https://forms.office.com/e/Tm21C67Kxh)

VIDEOS OF EXPERIMENTS

RAINBOWS WITH MILK

<https://youtu.be/6EkDZczcteE>



VORTEX

<https://youtu.be/LR26cgNT1fs>



FLIPPING A RAINBOW

<https://youtu.be/0hDlMgmGjN4>



REVERSING THE RAINBOW

<https://youtu.be/Xx9o9l-ZKF0>



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We hope you had fun and let us know if you have any feedback or suggestions.

Rebekah and Oran

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