

The super-easy 6



6

**Super-easy
Super-cool
Super-colourful
Science
Experiments**

In this free download, we've put together 6 of our favourite experiments. We've chosen these 6 because they are so easy to do and produce lovely colourful results. They provide good starter activities to get you & your family into science at home.

All the information on this document is published in good faith and for general information purpose only. Devon Science does not make any warranties about the completeness, reliability and accuracy of this information. Any action you take upon the information you find in this document, is strictly at your own risk. Devon Science will not be liable for any losses and/or damages in connection with the use of this document. Devon Science takes no responsibility for any injuries received as a result of trying our these investigations and experiments. We advise that children are supervised at all times.

The super-easy 6

6 Super-Easy Steps into Science...



FREE download from
www.devonscience.co.uk

1

Rainbow Rings

Mix up your imagination and create these random rings of colour! To make your rainbow circle bloom you have to separate heavy and light molecules. It's so easy even your mum and dad can do it.

WHAT YOU NEED

- Coffee filter paper - the non-fluted ones are best
- Large mug or bowl - smaller diameter than the filter paper
- Felt tip pens - the regular ones that are water-based
- Pipette
- Water

HOW TO DO IT

- 1) Grab your filter paper and open it out (you may need to cut it open depending on the type you bought).
- 2) Scribble loads of different colours all over the filter with your felt tips. Try smiley faces, crazy patterns, hearts, stars and snowflakes.
- 3) Lift the filter paper and put it on top of your mug or bowl. Try and get it nice and central over the mug's middle.
- 4) Pipette or flick droplets of water on to the filter paper...and watch the colours bloom!
- 5) Keep adding water until you love the way your rainbow rings look. Just don't add too much, or else the filter will collapse into the mug!
- 6) Fold your colourful filter into shapes, like a butterfly's wings or write messages.... get creative!



THE SCIENCE-Y SPOT

This awesome colour experiment is called chromatography. It shows that some of the molecules inside the felt tip colours are heavy, and some are light. The lighter ones spread out further on the filter paper with the heavier ones not travelling so far. Which of your colours is the lightest?

WHAT ELSE CAN I DO?

Why not try using felt tips that aren't water-based, mixed with those that are? Then you'll have some solid colour, and some random mixes too!



The super-easy 6

6 Super-Easy Steps into Science...

2

Slime Time!



FREE download from
www.devonscience.co.uk

Squish and squelch your way through making perfect slime! By using the right ingredients, turning glue into playful, slippery slime is so easy.

WHAT YOU NEED

- PVA pourable glue
- Plastic or paper cups/bowls
- A mixer (a lollipop stick is good)
- Contact lens solution - the Activator (must contain Sodium Borate or Boric acid - check the ingredients before you buy!)
- Food colouring
- Glitter & sequins
- Pipette
- Water

[Watch the video here](#)



[Read how to make fluffy slime \(blog\)](#)

1) Dollop a large spoonful of glue into the cup.

2) Add some paint to your glue and stir it up! You can add glitter now or leave it out until later.

3) Pipette in some contact lens solution a little bit at a time. Then mix vigorously. Repeat this until the glue starts to form a gloopy slime! You'll have to get it in your hands in a bit, so if it's too sticky for you to handle, then add a teeny bit more contact lens solution.

4) When you've added enough activator so that the slime comes away from the sides of the cup, the slime is ready for the final stage - working it in your hands.

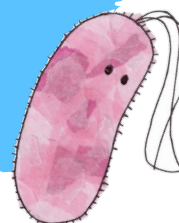
5) Slip the stuff out of the cup into your hands and "knead" it. Add more contact lens solution if it feels too sticky. Too much contact lens solution and the slime gets breakable and less stretchy. So experiment to get it to how stretchy or squishy you want it.....and don't be scared to get slimed...!

THE SCIENCE-Y SPOT

This is all about how the Borax in the contact lens solution "bonds" the glue's molecules to one another. The Borax is the "activator" that turns glue and water into a semi-solid, this is something that is not quite solid but also doesn't flow like normal liquid.

WHAT ELSE CAN I DO?

Slime turns out different each time. This doesn't mean you made it wrong - you just have to experiment with different amounts of water, Borax and glue to get it to become harder, softer or slimier. Why not measure out the amounts you put in, then keep a record of them so you know what makes your perfect slime?



The super-easy 6

6 Super-Easy Steps into Science...



FREE download from
www.devonscience.co.uk



Rainbow Skittles

Get ready to roll out a real rainbow treat! This is such a simple experiment that takes seconds, and it'll show you how diffusion makes colour molecules go from high to low concentration...and then create bands of blended colour.

WHAT YOU NEED

- Large packet of skittles
- White plate or flat bowl
- Water

[Watch the video here](#)



HOW TO DO IT

- 1) Shake your bag of skittles out on to the table, so you can see all the colours easily.
- 2) Choose your fave colours or use lots of random ones. Up to you!
- 3) Take your time laying out the skittles in fun, symmetrical patterns on the white plate.
- 4) Why not try shapes like a smiley face, arrows and hearts.
- 5) Gently pour water on to the plate (at the side is best so it doesn't splash), up to about half the height of the skittles.
- 6) Kick back and watch as the skittles colouring seep out into the water and create magical waves of colour!

THE SCIENCE-Y SPOT

Diffusion is the how molecules move on their own away from a high concentration of themselves towards an area of low concentration until the molecules are evenly spread out. The skittles' colour molecules move away from their highest concentration on the skittles through the "solvent" (the water) and spread out to mix and make the beautiful wavy lines. (Keep watching, until your skittles have melted and your experiment has totally died – geddit!)

WHAT ELSE CAN I DO?

Try using lots more skittles and making different patterns to see just how colourful you can make your artwork! What else diffuses like this?

Stand in one corner of a room, squirt a fragrance into the air and the smell will diffuse through the air to the other side of the room.



The super-easy 6

6 Super-Easy Steps into Science...



FREE download from
www.devonscience.co.uk

4 Colour Change

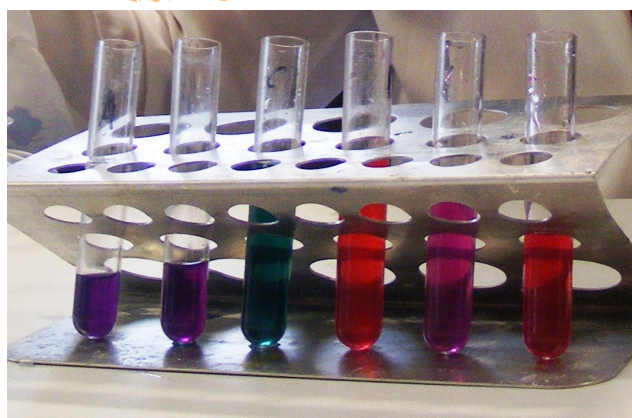
Who knew a red cabbage could mean science? Well, it does! In fact, this purple-water fun will get you testing weird stuff around your house, to see if they make the water change colour which tells you if they are acidic or alkaline.

WHAT YOU NEED

- Adult supervision
- Boiling hot water
- A red cabbage
- Knife & chopping board
- Sieve
- Heatproof glass bowl
- White paint tray
- Pipettes
- Household substances, like soap, detergent, vinegar, ketchup, fruit.

HOW TO DO IT

- 1) Chop up a chunk of the cabbage & boil a kettle.
- 2) Chuck the bits of cabbage into a heatproof bowl and (with an adult's help) pour on boiling water to cover the cabbage.
- 3) Wait very patiently for this cabbagey water to cool down.
- 4) Pour the contents through a sieve. Keep the purple water and recycle the cabbage.
- 5) Choose safe substances from around the home & place these in separate wells of your paint tray.
- 6) Gently pipette droplets of the purple cabbage water on to these ingredients and watch the water change colour!



If it's alkaline the cabbage water turns green or bluey-green, if it's an acid it'll turn red/pink. If it doesn't change colour, then your ingredient is neutral (neither acidic nor alkaline). Try to guess what colours things will change before you pipette!

THE SCIENCE-Y SPOT

This experiment is about making a magical cabbage pH indicator liquid to find out how high, low or neutral pH levels are in your food, cleaning products and other stuff. So, find out if they are more alkaline (low pH) or acid (high pH)? You'll be surprised by what things turn different colours!

WHAT ELSE CAN I DO?

Find out why cleaning products are mostly alkaline, and why are so many foods acidic? It's also great fun to throw lots of random things into a bowl, then pipette on your purple cabbage water to watch the different things turn different colours!



The super-easy 6

6 Super-Easy Steps into Science...



FREE download from
www.devonscience.co.uk

5 Rainbow Fizz

Let's make a magical rainbow mix of colours! This is such an easy little experiment that takes no time at all, and it makes the most beautiful pastel colours ever!

WHAT YOU NEED

- Baking soda/powder (bicarbonate of soda)
- Large flat baking tray
- White vinegar
- Red, yellow, blue food colouring
- 3 x pipettes or syringes

HOW TO DO IT

- 1) Sprinkle a layer of baking powder into your tray. Don't be shy - use enough of it to cover the whole tray and make it about half a centimetre deep!
- 2) Scatter a few drops of colouring on to the baking soda.
- 3) Squirt vinegar onto the baking soda
- 4)...listen to it fizz! Watch how all your primary colours mix to make the secondary colours - green, purple & orange.

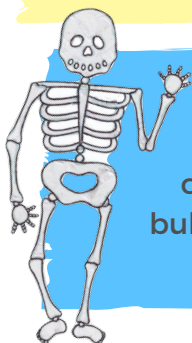


THE SCIENCE-Y SPOT

The cool stuff happening here is the reaction between the acidic vinegar and the alkaline baking powder. In Rainbow Fizz carbon dioxide gas forms from the reaction and this is what makes it bubble and fizz. The primary colours mix to make the secondary colours as a total fizz-bomb bonus!

WHAT ELSE CAN I DO?

You could start off making different vinegar colours, by mixing up your food colourings. What happens when you add more vinegar - is the reaction calmer or bubblier? Try orange, pink or purple and then you can make fizz-bubble patterns into shapes or animals, like unicorns?! Add glitter - life is better with glitter!



The super-easy 6

6 Super-Easy Steps into Science...



FREE download from
www.devonscience.co.uk

6 Fireworks in a Jar

Wanna make your own mini-Bonfire Night in a glass? Well, you can! It's really easy to do, and you can create safe, watery fireworks on your kitchen table.

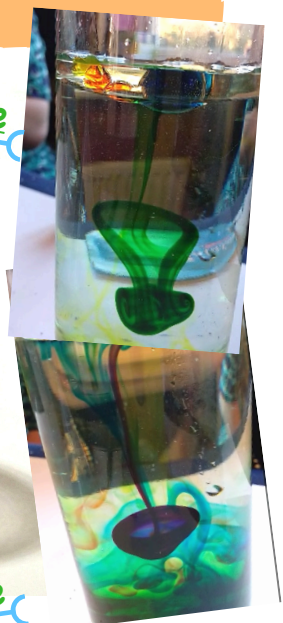
WHAT YOU NEED

- Oil (cooking or olive oil)
- A glass
- Water
- Food colouring (various colours)
- Pipettes

[Read the blog here](#)



[Watch the video here](#)



HOW TO DO IT

- 1) Grab a glass and fill it with water.
- 2) Gently pour oil in so about a centimetre of it rests on top of the water.
- 3) Squeeze your pipette into one of the food colouring pots & carefully drop three or four spots of colour onto the the oil in the glass.
- 4) Repeat with other colours
- 5) Watch closely as the colours stay together in the oil for a moment (some colours are heavier than others, so they may go through quicker).
- 6) They will eventually fall through the oil and "bom" into the water. This creates magical, mini-fireworks that tumble, bubble and burst in all directions. Don't forget to make "oooh" and "aaaah" firework display noises!

THE SCIENCE-Y SPOT

Oil is lighter than water, so it floats on water. The oil doesn't mix with the colouring or the water because it is hydrophobic (this means it doesn't like water - which is what the colouring is made of), and so the colour globules hold together as they pass through the oil. The colour molecules diffuse (spread) out into the water and dance around, mixing together for a cool, colourful firework display!

WHAT ELSE CAN I DO?

You could record which colours pass through the oil quickest (meaning they're the heaviest). Mix up some of the primary colours to make new ones, and, whilst the mini-fireworks roam around the glass (a bit like a lava lamp), ask your parents to take a pic or a movie on their phone. Then you can add filters to it and create really crazy colours!

