Tornado in a bottle

Make your own mini tornado that's a lot safer than one you might see on the television.

Follow the instructions and enjoy the cool water vortex you create!

What you'll need:

• Water

• A clear plastic 2 litre bottle with a cap (that won't leak)

• Glitter

• Dish washing liquid

Instructions:

1. Fill the plastic bottle with water until it reaches around three quarters full.

2. Add a few drops of dish washing liquid.

3. Sprinkle in a few pinches of glitter (this will make your tornado easier to see).

4. Put the cap on tightly.

5. Turn the bottle upside down and hold it by the neck. Quickly spin the bottle in a circular motion for a few seconds, stop and look inside to see if you can see a mini tornado forming in the water. You might need to try it a few times before you get it working properly.

Make your own rainbow

Learn how to make a rainbow with this fun science experiment.

What you'll need:

• A tall glass of water (about three quarters full)
• White paper

• A sunny day

Instructions:

1. Take the glass of water and paper to a part of the room with sunlight (near a window is good).

2. Hold the glass of water in front of the paper and watch as sunlight passes through the glass of water and bends (refracts) and forms a rainbow of colours on your sheet of paper.

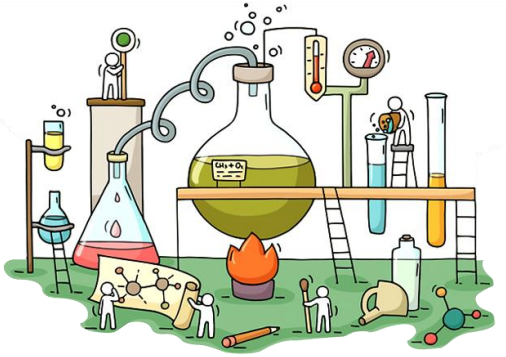
3. Try holding the glass of water at different heights and angles to see if it has a different effect.

BROWNHALL

Science, Technology, Engineering & Maths

(STEM)

A guide for parents and carers



Supporting science, technologies, engineering and mathematics (STEM) at home

Why is it important?

STEM underpins much of Scotland's economy and is a key part in -

- Creative industries
- Life sciences
- Energy
- Food and drink
- Financial and business
- Universities
- Tourism

it is estimated that there are 12,800 new jobs a year in Scotland's digital sector.

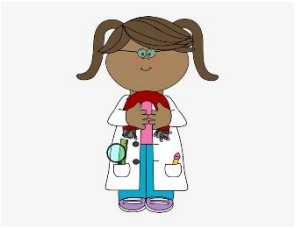
Curiosity in children often leads to questions that are pretty tricky to answer. Some of these could be:

- Why do I have a shadow?
- How many different bugs are there?
- How do planes fly?

STEM activities can encourage children and help them find out some answers to their questions.

Things parents can do at home:

- Use a torch, pencil, paper and a toy to investigate shadows
- Go outside to investigate bugs in the ground. Visit your local library to do some research or find out about bugs at your local museum
- Make paper aeroplanes and test them to work out how planes fly.
- Go to rigb.org/families/experimental
- Is your child interested in space and astronomy? Galloway Forest Park is the fourth designated Dark Sky Park in the world.
- Playing with magnets is often one of the best introductions to the world of science for young children. By



snapping magnets together and watching them push away from each other, children are learning the basics of magnetism and the magnetic force.

Teddy has a problem – his chair has broken and he has nothing to sit down on!

Challenge:

Can you help him by designing and building a new chair? Using materials you have at home, build a chair for one of your teddies.

Make sure they are comfortable!

You could use toys like LEGO or building bricks or you could recycle old boxes and bottles.

Test it:

Does Teddy fit in the chair comfortably?

Improve it:

Could you add any special features to make Teddy's chair even better?