

#ExperimentsAtHome



Experiment shared by:
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DENSITY TOWER (CHEMISTRY & PHYSICS) #CHASETHERAINBOW

An investigation to the density of different liquids.

You will need:

- A glass jar/clear plastic cup
- Golden syrup (squeeze bottle is best)
- Washing up liquid
- Coloured water (use food colouring or fruit squash)
- Cooking oil – any type with do
- A spoon



Instructions:

1. First, pour about 1cm of golden syrup in the bottom of the jar/cup. Pour in the middle to avoid getting any on the sides of the glass.
2. Next, carefully pour around 1cm of washing up liquid on top. Pour it very slowly down the side of the glass.
3. Next, pour roughly 1cm of coloured water. Pour this even more slowly in the middle.
4. Finally, slowly pour vegetable oil to make the top layer. *TOP TIP* It is easier if you run it over the back of a spoon.

Explore further...

Try carefully dropping a small bead, marble and a grape into your tower. What happens? Which liquids are best for floating? Do some things float in one but not the other? Can we link this to the density of the liquid?

How it works!

This experiment explores liquid matter. Matter is any substance that has mass and takes up space by having volume. Matter has different densities meaning some will be heavier and some will be lighter. Why do some liquids weigh more than others? Liquids are made up of different numbers of atoms and molecules. In some liquids, these atoms and molecules are packed together more tightly resulting in a denser or heavier liquid like the syrup! These different liquids will always separate because they are not the same density!

Share your results!

We'd love to see photos and videos of you doing the experiment. Please share on Twitter with hashtag #ExperimentsAtHome and tag in @STEM_HUBNMSEY

Thank you!

Additional Rainbow Challenge:

You will need:

- A glass jar/clear plastic cup
- Liquid food colouring red, blue and yellow (or use watercolour paint)
- Sugar

Challenge: Adding varying amounts of sugar to water changes its density. Can you create the rainbow in a jar by colouring different sugar water mixes correctly?

Here's what it should look like...



This took a LOT of patience! It took a LOT of experimenting with different amounts of sugar and with the pouring technique to eventually get it to work.

PLEASE ASK FOR ADULT PERMISSION AND/OR SUPERVISION WHEN REQUIRED.



We hope you have fun!