ROYAL SOCIETY OF CHEMISTRY

Colourful CHEMISTRY

RAINBOW DENSITY COLUMN

What to do:

1. Measure out the same amount of each liquid, so your rainbow layers will be equal sizes.
2. Pour the liquids into a tall, clear container very slowly in the following order, making sure they DON'T touch the sides of the glass first: honey, glucose syrup, maple syrup, whole milk, and washing up liquid (the runny kind). The slower you pour, the better the column will look.
3. Next pour the rest of the liquids in the following order, making sure they DO touch the side of the glass first: water, vegetable oil, rubbing alcohol (surgical spirit), lamp oil. Again, pour as slowly as you can!

What's going on?

Liquids have many different densities- so a cupful of one liquid can be heavier than a cupful of another liquid. If you pour liquids with different densities slowly into a tall container, you can see them separate out in order of density- the heaviest liquids fall to the bottom and the lightest stay at the top!

HOMEMADE LAVA LAMP

1. Fill a tall, clear container ¾ full with the vegetable oil.
2. Fill the rest up with water, almost to the top but leave a couple of fingers-widths clear.
3. Add about 10 drops of food colouring. Which liquid does the food colouring dye? Can you think why that might be?
4. Drop in a small piece of an Alka-Seltzer tablet, and watch what happens!

What's going on?

Not all liquids will mix with each other and however hard you try, the oil and water will never mix into one layer. Adding in a fizzing Alka-Seltzer gives the water enough energy to bubble past the oil - but not for long! Wait for the fizzing to die down - have the layers of liquids changed?