

Science Experiments: Chemistry

Pen Chromatography



Materials:

- a glass of water
- different coloured felt tip pens
- white paper towelling
- scissors

Experiment:

1. Cut a thin strip of white paper towelling.
2. With one of the felt tips pens, draw a line across the paper towelling strip roughly 1cm from the bottom of the paper.
3. Carefully place the paper strip into the water so that only the edge of the paper touches the surface of the water. Water will quickly rise up through the paper.
4. Once the water reaches the ink line, lift the paper strip off the surface of the water. You'll notice that the ink rises upwards as the water comes up through the ink line. If you look closely, you might see some colours coming out of the line that you didn't see before!
5. The longer you run the experiment, the more the colours spread out across the paper.
6. Try different felt tip pens. Some ink colours have hidden colours within them. Which colour inks do you think have hidden colours?
7. Things you could change to experiment further:
 - Try coffee filter paper vs. paper towelling
 - Try permanent vs water-based pens
 - Do biro pens work?
 - Try different liquids. Which inks respond to which liquids?

What is happening?

Ink is made up of different chemicals. As the water moves up the paper, it takes the ink with it. The different parts of the ink (the different chemicals it is made up of) will move at different rates depending on their different reactions to the water. Some chemicals like water (hydrophilic) some don't (hydrophobic).

