

Paper Chromatography

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1. Take a piece of thick, absorbent paper (e.g. coffee filter paper) and cut a strip about 1 cm wide by 15 cm long.
2. About 2 cm from one end of the paper strip, make a circular blob of ink with a washable felt pen.
3. Suspend the paper strip so that it hangs down into the water (ink end down), and is immersed only 0.5 cm into the water. (The ink blob will be 1.5 cm above the water.)

[The water climbs up the paper, and will make the ink move up as well. As the ink moves up the paper, the ink separates into various colours.]

4. Pull the paper out of the water before the water gets to the top of the paper, and let the paper dry.

[Try different washable inks. The darker colours give results that are easiest to see.]

Explanation: Most inks are made up of two or more different dyes. Each dye has a tendency to stick to the paper and a tendency to dissolve in the water passing over the paper. Each dye acts differently so that those sticking more to the paper remain closest to the starting point, while those having the greatest tendency to dissolve in the water will move higher up the paper. This process is called paper chromatography, and is used a lot to analyze mixtures of coloured chemicals.