Chromatography

Try this

Chromatography is an analytical process which separates a compound into its constituent chemicals. As the solvent travels up the paper it takes the various chemicals in the ink with it, separating them into a series of coloured bands.

Chromatography is a method of separating a mixture of substances. The substances can then be compared or analysed further. This method uses paper and water but is based on the sample principles as more complex methods of chromatography used in analytical science (see the article on pages 13-14 of this issue of Catalyst).

You will need:

- filter paper
- washable black felt tip pens
- glass or beaker
- water
- cling film (optional)

What you do:

Cut a strip of filter paper about 2 cm wide and long enough to reach to the top of your glass or beaker, plus about another 5 cm.

Put about 1 cm depth of water into the beaker.

Put a dot of black pen about 1.5 cm from the bottom of the strip of filter paper. Allow it to dry and then add another dot on top.

Put a pen over the top of the glass and hang the paper strip on it so that the water is below the black dot. Cover the glass with cling film.

The water will rise up the paper and the different coloured inks present in the black ink will separate.

How it works:

All forms of chromatography work on the same principle. They all have what is called a stationary phase (a solid, or a liquid supported on a solid), which as the name suggests stays still, and a mobile phase (a liquid or a gas). The mobile phase flows through the stationary phase and carries the components of the mixture with it. Different components travel at different rates, like in a race, and this separates them out.

In paper chromatography, the stationary phase is an absorbent paper. The mobile phase is a suitable liquid solvent or mixture of solvents – here we used water.

Different pen inks will be made of different combinations of coloured inks. Although they may all look the same when you write with them, they can be separated out by chromatography which allows you to see the differences.

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Look here!

More about how chromatography works:
http://tinyurl.com/yketr99