Mission Assignment: Show how mixtures can be separated using chromatography

KS3-06-06

You are going to work in small groups and carry out a chromatography investigation.

Draw a line on a piece of filter paper in pencil, 1 cm from the bottom.

You will have been given a selection of three fine liner/ felt tip pens. *In secret*, one person from your group should make a small spot in the middle of the line on the filter paper using one of the black pens.
Place the pen which was used back in the same position so the other members of the group can't tell which pen was used.

Your task now is to find out which pen was used, using chromatography.

Equipment
- Three fine liner / felt tip pens
- Four pieces of filter paper
- Ruler
- Pencil
- Four splints
- Four paperclips
- Four beakers
- Water

Method

1. Prepare three more pieces of filter paper as you did at the start, drawing a line in pencil, 1 cm from the bottom.
2. Draw a spot using one of the three pens on the line on the filter paper.
3. Repeat for the other two pens using separate pieces of filter paper.
4. Fold the four pieces of filter paper over the top of a splint and secure them in place with a paperclip.
5. Place the papers in individual beakers so that the splint allows the filter paper to hang down into the beaker, without touching the bottom.
6. Pour water into the beaker so that the bottom of the paper is in the water, but not above the pen dot.
7. Wait until the water has been absorbed to the top of the filter paper and then take them out of their beakers.
8. You should find that the filter papers have different smear patterns on them.
9. Compare the results of the three known pens to that of the mystery pen to determine which pen was used.