|  |  |  |  |
| --- | --- | --- | --- |
| **Topic** | Separating challenge! | **Level** | Key Stage 3 (or any other course for students aged 11-14) |
| **Outcomes** | 1. To separate a mixture containing food dyes by chromatography | | |

**The Separating Challenge! Help Sheet**

**By the end of the challenge you must have:**

* Separated the iron, sand and sulfur into three plastic pots labeled with your names (2 marks)
* Weighed the iron filings you have separated (4 marks)
* Made a clear chromatogram – see help sheet below (4 marks)
* A tidy desk at the end (2 marks)

**Chromatography – help sheet**

Once you have removed the sulphur, iron and sand from your mixture **you will then need to separate the food colourings by chromatography**. This will allow you to find out how many colourings we used! **Chromatography** is a process that we use to separate out different dyes from a mixture. A **Chromatogram** is the paper showing the results of **chromatography**.



1. With a pencil, draw a line on the chromatography paper 1 cm from the bottom.
2. Attach the top of the chromatography paper to a wooden splint using a paper clip.
3. Put approximately 10 ml of your dye solution into the beaker.
4. Place the wooden splint attached to the chromatography paper over the top of the beaker. Make sure that the bottom of the chromatography paper is only just touching the dye solution (reduce the amount of solution if necessary).
5. Wait for the colours to separate.
6. Now remove the chromatography paper and write your group name on the top. On the back write down how many colourings you think you found. Place the paper on the front desk along with your iron, sand and sulfur­­­.