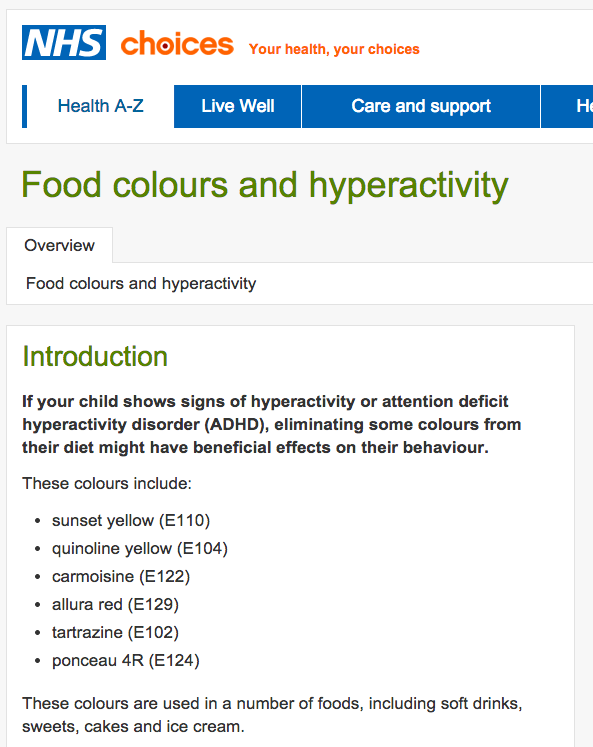
|  |  |  |  |
| --- | --- | --- | --- |
| **Topic** | Chromatography | **Level** | Key Stage 3 (or any other course for students aged 11-14) |
| **Outcomes** | 1. To interpret a chromatogram 2. To use evidence from a chromatogram to support a claim | | |

**Applying knowledge: food colours and hyperactivity**

Read the passage below about food colours and hyperactivity in children.

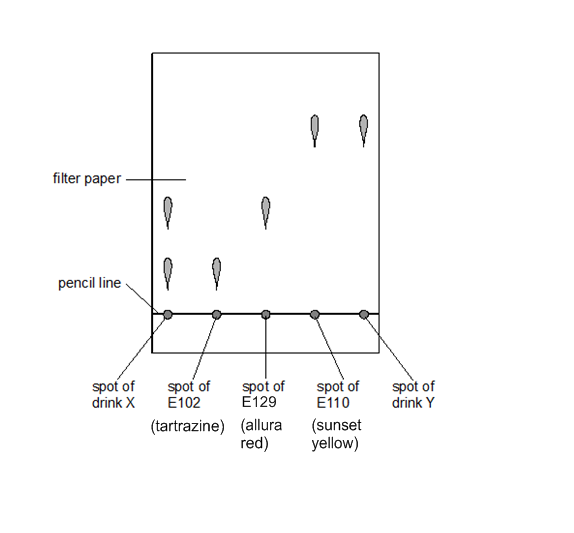
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Taken from http://www.nhs.uk/conditions/food-additive-intolerance/Pages/Introduction.aspx

Mrs Gren wanted to find out if two drinks, drink X and drink Y, are suitable for her son to drink. They **must not have** any of the colourings that can cause hyperactivity.

She made a chromatogram using three colourings: E102 (tartrazine), E129 (allura red), E110 (sunset yellow) and with drinks X and Y.

The results are shown below.



**Questions**

1. What conclusions can you make about the suitability of drinks X and Y for Mrs Gren’s son? Explain you answer using information from the chromatogram.
2. Mrs Gren suspects that drink X is worse for her son than drink Y. Does she have any evidence to support this claim?
3. Mrs Gren suspects that E129 is actually a mixture of two food colours. What could she do next with the chromatogram to investigate this?

**Progress:** further resources on particles are available here: <http://www.thescienceteacher.co.uk/particles>