**BTEC Applied Science SUMMER TASK**

**Spectroscopic techniques to identify compounds**

Chemical analysis has many applications in manufacturing, particularly in product quality control, monitoring of production processes and drug development processes in the pharmaceutical industry. It is also a key component in healthcare (in the diagnosis of disease), forensic science (analysing substances found at crime scenes), and public health (testing drugs, food, air quality, water quality and monitoring industrial waste).

The analytical process encompasses a range of skills including sampling techniques, separation and isolation of components, estimating error limits, data manipulation and interpretation and communication of results. Increasingly, analytical procedures utilise complex electronic equipment and computer-aided interpretation of results.

**In this project you will investigate chromatography methods used to analyse substances.**

**WEEK 1: Paper Chromatography**

**Research and answer the following key questions:**

1. What is paper chromatography?
2. What are some real-life applications of this process?
3. Describe and explain how you could separate ink

**USEFUL WEBSITES:**

[**https://www.chemguide.co.uk/analysis/chromatography/paper.html**](https://www.chemguide.co.uk/analysis/chromatography/paper.html)

[**https://www.bbc.co.uk/bitesize/guides/zqc6w6f/revision/4**](https://www.bbc.co.uk/bitesize/guides/zqc6w6f/revision/4)

Video: <https://www.youtube.com/watch?v=mz_xcNrTK_U>

**WEEK 2: TLC Chromatography**

**Research and answer the following key questions:**

* What is TLC chromatography and what is it used for
* Evaluate the advantages and disadvantages of chromatography as an analytical technique

**USEFUL WEBSITES:**

[**https://www.chemguide.co.uk/analysis/chromatography/thinlayer.html**](https://www.chemguide.co.uk/analysis/chromatography/thinlayer.html)

[**https://edu.rsc.org/download?ac=14527**](https://edu.rsc.org/download?ac=14527)

Video: <https://edu.rsc.org/resources/thin-layer-chromatography/1074.article#!cmpid=CMP00001940>

**FINAL TASK**

Using your knowledge and research from week 1 and 2 write an essay to answer the following question:

**Describe how you would test the purity of aspirin using TLC chromatography.**

You will hand in this task when you begin your BTEC Applied Science course in September.

*Your essay should be no more than 2000 words*

Checklist/ key Info to include:

* Describe what is meant by chromatography
* Explain why it is important to know the purity of aspirin
* Explain how chromatography and TLC chromatography work
* Evaluate the advantages and disadvantages of these chromatography techniques
* Method for carrying out the practical and safety precautions you could take

If you need any help please email me ([hgillespie@toothillschool.co.uk](mailto:hgillespie@toothillschool.co.uk))