Shaftesbury School
Aspiration Action Achievement

Shaftesbury Sixth Form

Summer Preparation Task

Subject name: Chemistry

Exam Board: OCR

Purpose of task:

We follow the new OCR Chemistry A, A level specification (H432). There is a lot to learn ready for the mock exam module in early January and this is a big step up for some students. Therefore it is important that you see what is coming up for the Autumn term before you start, and get an overview of the course ahead. These summer tasks will help you to get ahead of the game and ensure that you start with a solid foundation in September, so enjoy and good luck!

Recommended resources:

http://www.ocr.org.uk/Images/171720-specification-accredited-a-level-gce-chemistry-a-h432.pdf
https://snaprevise.co.uk/course/27/edexcel/chemistry-as/as-level-chemistry-new-spec
https://www.youtube.com/watch?v=LV0jDuCilIQ&list=PLX4e2DxFRGQK1mLO7G0nOCh8P7FAKYOoa.

Task 1: Chemistry is all around us, yet it is only sometimes that we see it displayed. What we would like you to do is to 'deconstruct' TWO everyday materials and compare and contrast their chemical contents.

We suggest you choose two materials that are linked to each other in some way. An example of one 'deconstruction' is attached.

The main final product will be a presentation in the form of either an A3 (2 A4)poster or powerpoint which could be displayed on a large screen TV aimed at year 11 students to show just how much Chemistry there is in our everyday life.

What we are looking for

- Research skills: Can you read and research information about a chemical and gain some understanding of its chemistry.
- Chemical names and Structures: We want you to become familiar with the ways chemicals can be named and drawn. You do not need to understand the naming but like a language at least become familiar with the style.
- A comparison between a related pair of substances. If they use different chemicals can you discover why? How do they work?
- A bit of imagination and interest.

What we don't want

- We do not want a huge cut and paste Wikipedia entry where there is little evidence of any real understanding of what you have researched.
- A highly detailed post degree explanation that neither you nor any other year 12 will understand.
- A list of ingredients with little development of what they are, or do. You choice of material is critical here is making this bit more or less difficult.

What to avoid

- Clearly some ingredients will be protected by companies to avoid their product being copied (Perfumes, Pepsi /Coca Cola). Choose item where sufficient detail is available to allow further research.
- Products with limited ingredients or the contents are vague because it is not a material that comes into contact with humans or animals. These will give you insufficient scope for comparison and research.
- By all means do pharmaceuticals, but we don't need kitchen chemistry crack cocaine recipes or any other illegal home products. Remember we hope to display your task in a school!
- Marmite! (come up with your own idea)

Where to find information

- Ingredient labels. The statutory labelling of ingredients is a great place to start
- Many companies have a help line / web site with a lot of detail on usually on the label.
- Good old Google and Wikipedia ,but try more Chemical places as well like
- www.ukfoodguide.net • www.chemspider.com • www.howstuffworks.com • You *might* find some of your substances mentioned in http://www.chm.bris.ac.uk/motm/motm.htm Bristol University's Molecule of the month page

Don't feel you have to explain everything. Choose those aspects you feel you understand and that might be of interest to a year 11 who is considering Chemistry at A level. Chemistry is an enormous subject and you have done very little at GCSE. You may find that quickly the language and complexity of material on the internet can be overwhelming. Try to pick out bits that you do understand or stick to web sites that are aimed at the general public.

Deadline for task: First week in September! Should you require help on any aspects of this task then please email the Head of Chemistry at the Shaftesbury school using the email address below:

james.biddiscombe@shaftesburyschool.co.uk

In this example they have used the ingredients list and identified the uses of each. This could easily be extended to show greater chemical structure of the molecules and perhaps a more detailed explanation of either the purpose or effect of some of the chemicals involved.

By choosing a pair of similar materials you can concentrate on what chemicals appear in both and why and how the pair might differ. Feel free to select your own pair, but some ideas are

Two different Shampoos (eg Greasy and Dry hair types / different price range /Synthetic vs Organic)

A shampoo and a conditioner

Two different toothpastes

Painkillers (aspirin, ibuprofen, paracetamol)

Detergents

You may be able to come up with others use your imagination