

Chemistry Bridging Work

Year 10 into 11 for 2021/22



Name: _____

Tutor Group: _____

Teacher: _____

Year 10 Bridging Work: Chemistry

Task 1. Research project

Two of our final topics in chemistry are Rates & Equilibrium and Chemical Analysis. Both of these are fundamental to us as chemists and are really interesting to learn as they readily apply to science in everyday life. To prepare for the next stage in your learning, you must **choose one research project below and create a presentation about it**. This presentation could be in the form of a PowerPoint, a poster or a written essay but you **must include the success criteria outlined below**. You will be presenting this to your class in September and you will be **assessed by your teacher**. This assessed mark will go on your first report so, make sure it is excellent and to a high standard.

1. **The industrial use of catalysts.** What is a catalyst? Name a catalyst used in chemical industry. What reaction does it catalyse? Why is this important?
2. **The agricultural use of catalysts.** What is a catalyst? Name a catalyst used in agricultural industry. What reaction does it catalyse? Why is this important?
3. **Formulations.** What is a formulation? Give examples in your presentation and explain why they contain other compounds. Why do medicinal drug formulations only contain 5 and 10% of the active drug?
4. **Chromatography.** Explain how chromatography works in the one of the following industries: sport / food science / forensic analysis. *Challenge: What is gas chromatography and how does it work?*
5. **Triple only option: Flame Emission Spectroscopy.** What is flame emission spectroscopy? What is it used for in everyday science?
6. **Triple only option: Testing for ions.** Describe the use of testing for ions in the environmental industry / medicine / forensic science. You have four test tubes containing: CaCl_2 , CaSO_4 , CaBr_2 and LiF . Plan an investigation to identify which compound is in each test tube.

Success criteria:

- Able to present for 3 minutes about your chosen topic
- Included relevant and correct chemical information
- Used correct scientific vocabulary
- Included the key dates and notable scientists involved

Task 2. Recap

From the Year 10 exams we have identified the following gaps in knowledge across the year group: Conservation of Mass, Bonding, Organic Chemistry and Electrolysis. For these topics please use My GCSE science to watch the related video and complete the mini-quizzes and exam questions. Your teachers will be able to see that you have completed this. You will also be given a short test in September to check that you have revised these topics thoroughly.

Click onto the following in my GCSE science to access the video and to practice the exam questions:

- **Conservation of mass and balanced chemical equations**
- **Ionic Bonding**
- **Covalent Bonding**
- **Properties of Ionic, Covalent and Metallic Structures**
- **Giant Covalent Structures**
- **Crude Oil and Alkanes**
- **Combustion of Alkanes**
- **Electrolysis of Molten Salts**
- **Using electrolysis to extract metals**
- **Electrolysis of aqueous salts**

*Get ahead: review **Rate and extent of chemical change** videos as we will be starting with this module when you return in September.*

Useful websites:

- My GCSE Science. **Username:** school e-mail address. **Password:** bw

<https://www.my-gcsescience.com/>

- A Hammond Biology. No login required. *Useful tip, click ctrl + f to search through the exam question booklet to find relevant questions*

<http://ahammondbiology.weebly.com/>

- Kerboodle. **Username:** school e-mail address. **Password:** (click forgot login to reset). **Institution code:** Pro9

<https://www.kerboodle.com/users/login>

- Savemyexams. **Free version enables you to access many different revision notes and exam past paper questions.**

<https://www.savemyexams.co.uk/gcse-chemistry-aqa-new/>

Remember you don't have to complete this all in one go - spend an hour each week on it!