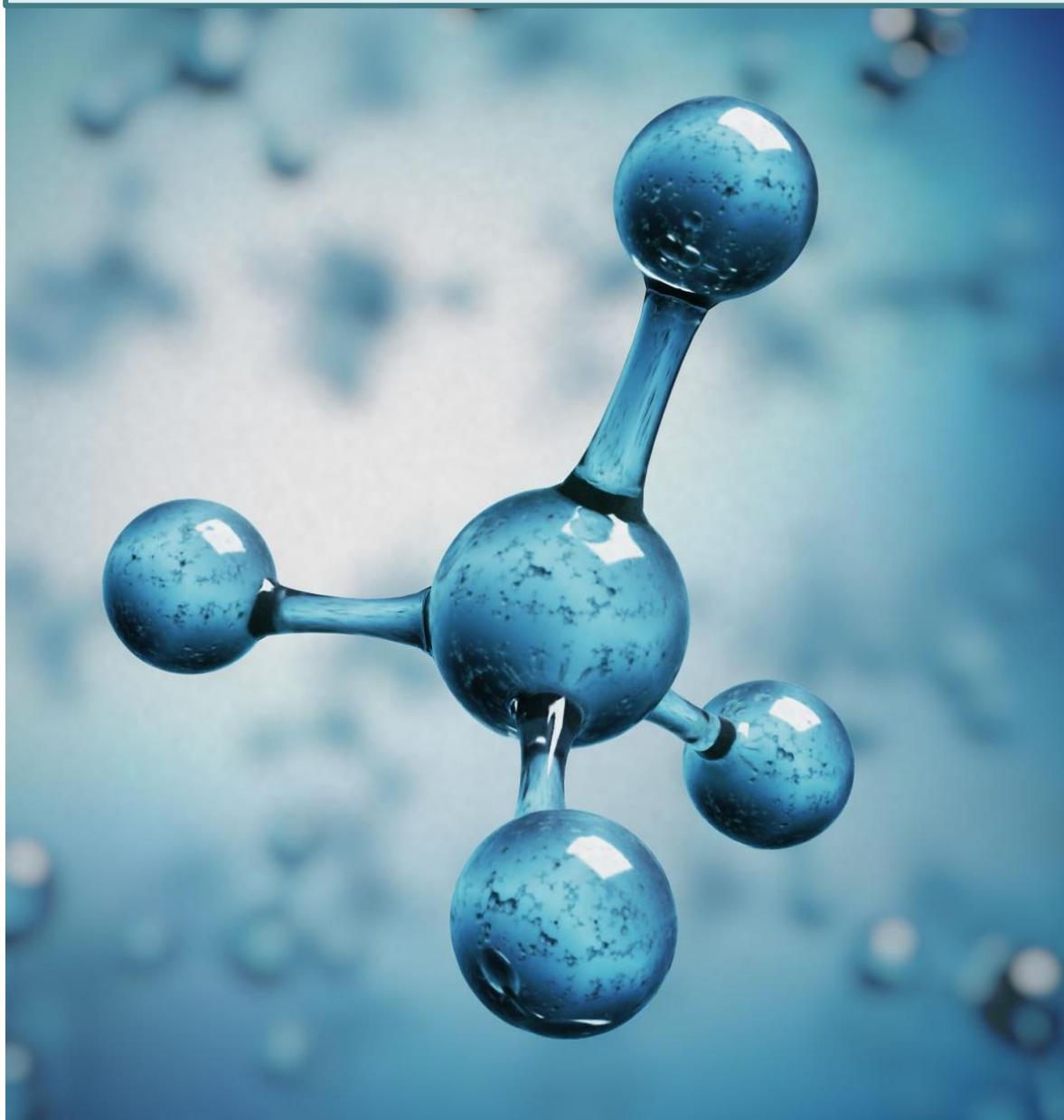


A Level Chemistry at Thomas Deacon Academy

Project 2



Contents

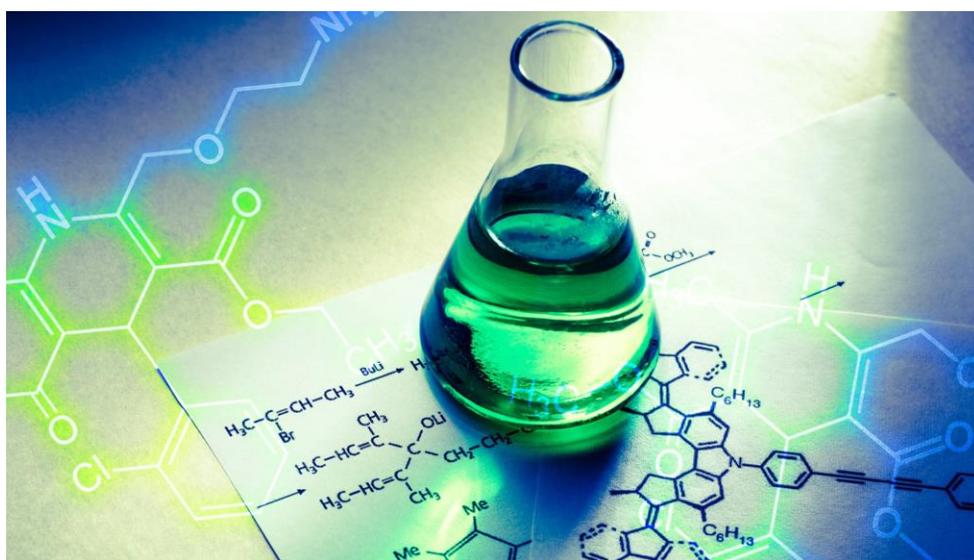
- 1) Aims of Project 2
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 - Why is Chemistry important in life anyway? Why should I care?
 - Where can Chemistry take me in life?
 - Wider learning opportunities

1. Aims of Project 2

- Project 1 saw you polishing your key skills for A level chemistry and completing practice questions
- **Project 2 is all about you expressing your passion for Chemistry as well as providing you with an opportunity to explore an area of chemistry that interests you**

◦ **Aims:**

- **Research a chemistry topic of interest using internet-based resources, eBooks and books**
- **Demonstrate your enthusiasm for studying chemistry at A level**
- **Practice and apply literacy skills through an essay-based assignment**

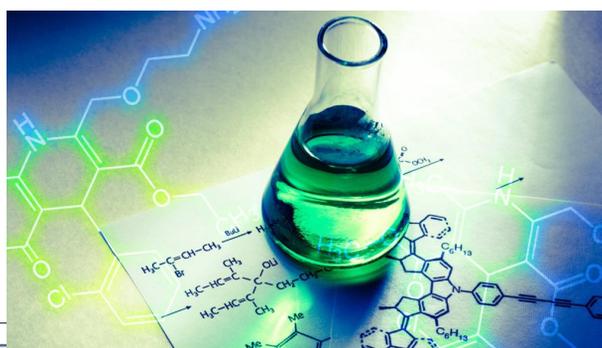


2. Outline of Project 2

- Read through the available article titles below and pick one that interests you
- Research the topic featured in your article title and produce a typed, written piece of work (**500 – 1000 words**).
- Inclusions of images to support your work is encouraged. Be sure to credit and reference all resources used.
- A good starting point for your research is the “Useful resources” section of this booklet

◦ **Article titles:**

- **Option 1 – Esters as perfumes**
 - This article should explain how esters are made and how they can be used as perfumes
- **Option 2 – Molecules of murder**
 - This article should explain a molecule used in a murder, its discovery, its history, and its effects on the human body
- **Option 3 – Polymers**
 - This article should explain what polymers are, how they are made, and outline what they are used for
- **Option 4 – Chemistry in Medicine**
 - This article should explain a molecule used in medicine, its discovery, its history, and its effects on the human body
- **Option 5 – Art of chemistry**
 - This article should explain how chemistry is used in art. You could explore techniques used to analyse art and artefacts, or how chemistry is involved in the development of new pigments and colours used by artists
- **Option 6 – Chemistry of sport**
 - This article should explain how chemistry interlinks with sports. You could explore techniques used to analyse athletes fitness levels and performance, how banned substances enhance athletes and how they are detected, or how chemistry is involved in the development of sport equipment.



3. Useful resources

◦ Option 1 – Esters as perfumes

- Esters and their smells:

<https://jameskennedymonash.wordpress.com/2013/12/13/infographic-table-of-esters-and-their-smells/>

<https://bcachemistry.wordpress.com/tag/perfume/>

- **Video:** Esters and perfumes:

<https://www.stem.org.uk/resources/elibrary/resource/35136/esters-and-perfumes-suitable-home-teaching>

◦ Option 2 – Molecules of murder

- **Book:** Molecules of Murder: Criminal Molecules and Classic Cases by John Emsley

- How substances cause harm:

https://www.health.ny.gov/environmental/chemicals/toxic_substances.htm

◦ Option 3 – Polymers

- Polymer Chemistry RSC journal: <https://pubs.rsc.org/en/journals/journalissues/py#!recentarticles&adv>

- Encyclopedia Britannica: <https://www.britannica.com/science/polymer>

◦ Option 4 – Chemistry in Medicine

- Chem libretexts:

[https://chem.libretexts.org/Bookshelves/Introductory_Chemistry/Book%3A_Introductory_Chemistry_\(CK-12\)/01%3A_Introduction_to_Chemistry/1.06%3A_Medicine](https://chem.libretexts.org/Bookshelves/Introductory_Chemistry/Book%3A_Introductory_Chemistry_(CK-12)/01%3A_Introduction_to_Chemistry/1.06%3A_Medicine)

- Cosmos Magazine: <https://cosmosmagazine.com/chemistry/17-molecules-changed-world>

◦ Option 5 – Art of chemistry

- RSC: <https://edu.rsc.org/resources/collections/chemistry-and-art>

- Chemistry and Art: <http://www.whatischemistry.unina.it/en/art.html>

- Art of conservation: <https://www.chemistryworld.com/features/the-art-of-conservation/3009092.article>

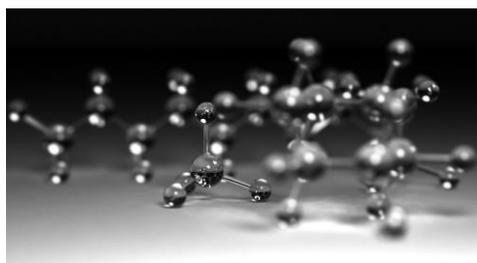
◦ Option 6 – Chemistry in sports

- RSC: <https://edu.rsc.org/resources/collections/chemistry-in-sport>

- Chemistry of sports watches for improved performance:

<https://www.sciencedaily.com/releases/2020/02/200203141503.htm>

- Polymers in sports equipment: <https://www.futurelearn.com/info/courses/everyday-chemistry/0/steps/22344>



4. Feedback from Teacher

○ Based on the work you have completed a summary of your strengths and areas for improvement are outlined below:

1. Your strengths are:

2. Your areas for improvement are:

3. STUDENT TO FILL IN FOLLOWING FEEDBACK

In order to improve my weaker areas I will set myself the following three targets.

HINT: These should be specific, achievable actions to set yourself.

1.

2.

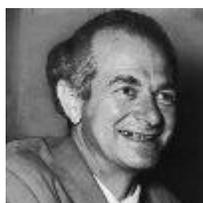
3.

I will know when I have achieved my targets because . . .

5. Wider reading

Why is Chemistry important to the world?

- Chemistry is important to our everyday lives, it is everywhere and responsible for everything. The study of chemistry is really the study of everything since all matter is made of chemicals.
- **Read this article “Importance and Scope of Chemistry”:**
<https://www.toppr.com/guides/chemistry/some-basic-concepts-of-chemistry/importance-and-scope-of-chemistry/>
- **Watch this series of videos:** <https://topdocumentaryfilms.com/chemistry-almost-everything/>



Every aspect of the world today – even politics and international relations – is affected by chemistry.

LINUS PAULING, 1901 TO 1994

5. Wider reading

Where can Chemistry take me in life?

- **Studying chemistry gives you many options for your future.** It can lead to a career in industries such as manufacturing, pharmaceuticals, petrochemicals and healthcare. Specific job roles include analytical scientist, chemist, medical scientist, forensic scientist, pharmacologist and toxicologist.
- Chemistry teaches you a wide variety of transferable skills allowing you to go into alternative careers including civil service, environmental consultancy, higher education lecturer, management consultancy, nuclear engineering, patent attorney, radiation protection practitioner, or science writing.
- **At University there are a variety of chemistry-based degrees that you can study*:**
 - chemistry (including options to spend a year of your degree in industry)
 - applied chemistry
 - biochemistry
 - pharmacology
 - environmental science
 - forensic science

**The degrees offered will differ depending on the university to which you apply*

5. Wider reading

Wider learning opportunities

- **You've got the Summer Holidays in front of you so why not try out some of these wider learning opportunities in your free time?**

- **Books**

- The Pleasure of Finding Things Out - Richard Feynman
- Periodic Tales - Hugh Aldersey-Williams
- The Disappearing Spoon - Sam Kean
- Uncle Tungsten - Oliver Sachs
- The Shocking History of Phosphorus: A Biography of the Devil's Element - John Emsley

- **Magazine/Journals**

- Scientific American
- New Scientist
- The Mole

- **Places of Interest**

- Royal Society of Chemistry - Burlington Arcade, Regents Street London
- Science Museum, London
- Museum of the History of Science, Oxford
- Curie Museum, Paris

- **Websites**

- Periodic Table of Videos by Martyn Poliakoff <http://www.periodicvideos.com/about.htm>
- Royal Society of Chemistry www.rsc.org.uk
- Institution of Chemical Engineers www.icheme.org
- www.chemguide.co.uk