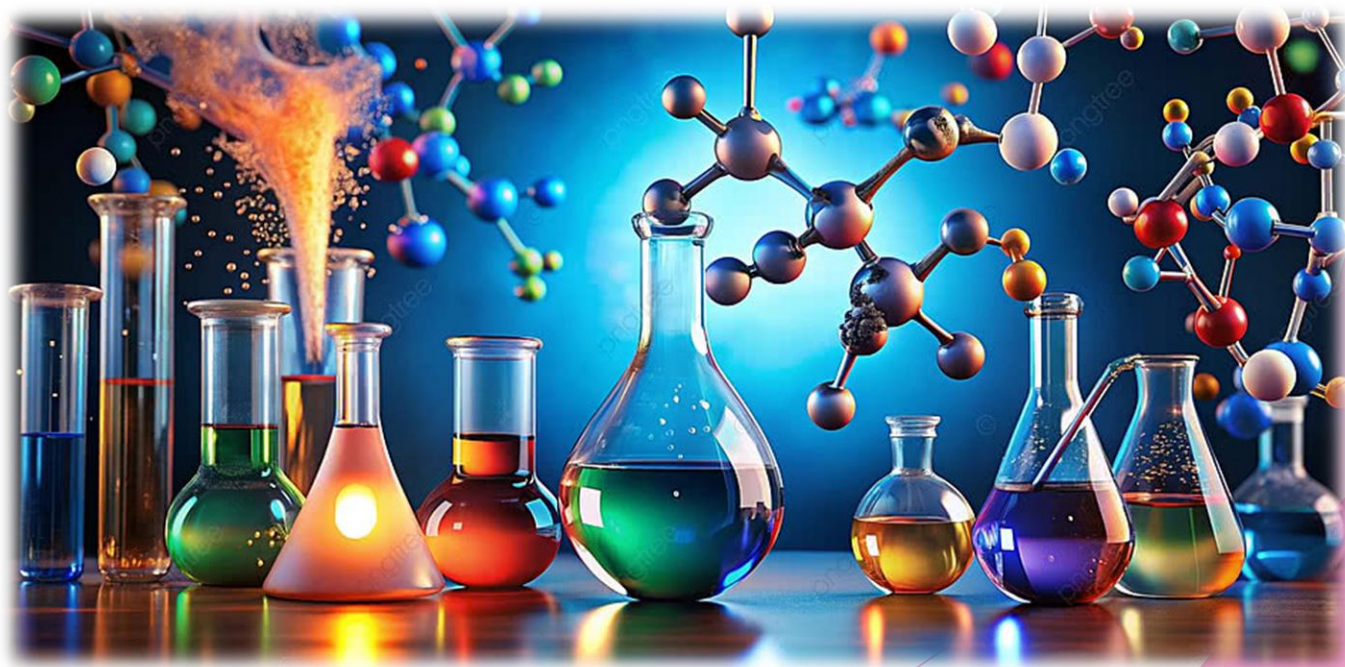


A Level Chemistry

AQA

6th Form Induction Work



A Level Chemistry

Why is chemistry important? (youtube.com)



A level Chemistry Introduction

- Read through the following slides to get an overview of the course expectations, organisation and examination methods.
- After you have read through this information you can start the lesson work.



Chemistry Folders: Organisation = Success

You must have 2 ring-bound folders for year 12:

1 for Teacher 1

1 for Teacher 2

In these folders you will have:

- The course specification
- Checklists
- Assessment trackers
- Dividers for each topic
- Notes, classwork, revision, your own background reading and notes
- Assessment



Required Practical Work:



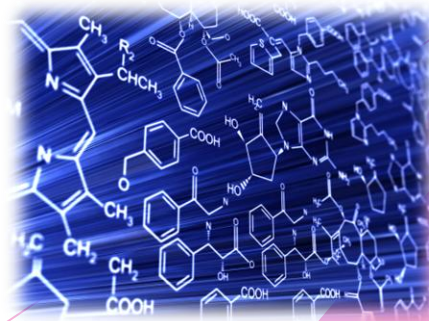
There will be 12 assessed practical activities you will need to complete over the 2 years of the course.

We will provide you with a lab book to record all methods, observations, results, conclusions and evaluations you draw from the practical activities.

You will develop a variety of practical **skills**, **techniques** and experimental **competencies**.

Expectations:

- Folders are to be kept up to date.
- You must catch-up on missed work or notes by seeking out your teacher.
- You must go over class notes and do background reading and research to cement the learning of topics.
- You must develop and maintain good revision practice.
- Enjoy the course.



A Level Chemistry Course:

- 2 year non-modular course.
- 5 Lessons per week
- No coursework.
- 12 Required Practical Activities.
- Exam based:
3 exams in year 13 (A2)



Year 12 (AS) topic breakdown:

Section 1 topics - Physical Chemistry	Section 2 topics - Inorganic Chemistry	Section 3 topics - Organic Chemistry
1. Atomic structure	8. Periodicity	11. Introduction to Organic Chemistry
2. Amount of substance	9. Group 2, the alkaline earth metals	12. Alkanes
3. Bonding	10. Group 7, the halogens	13. Halogenoalkanes
4. Energetics		14. Alkenes
5. Kinetics		15. Alcohols
6. Equilibria		16. Organic Analysis
7. Oxidation, reduction and redox reactions		

Year 13 (A2) topic breakdown:

Section 1 topics - Physical Chemistry	Section 2 topics - Inorganic Chemistry	Section 3 topics - Organic Chemistry
17. Thermodynamics	22. Periodicity	25. Nomenclature and isomerism
18. Kinetics	23. The transition metals	26. Compounds containing the carbonyl group
19. Equilibrium constant	24. Reactions of inorganic compounds	27. Aromatic chemistry
20. Electrode potentials and electrochemical cells		28. Amines
21. Acids, bases and buffers		29. Polymerisation
		30. Amino acids, proteins, and DNA
		31. Organic synthesis and analysis
		32. Structure determination
		33. Chromatography

Exams - Second year - A level:

Paper 1

2 hour written exam

105 marks – a mixture of short and long answer questions

35% of A level

Content

- Inorganic Chemistry
- Physical Chemistry
- Relevant practical skills

Paper 2

2 hour written exam

105 marks – a mixture of short and long answer questions

35% of A level

Content

- Organic Chemistry
- Physical Chemistry
- Relevant practical skills

Paper 3

2 hour written exam

90 marks in total:

- 40 marks on practical techniques
- 20 marks testing across the specification
- 30 marks multiple choice questions

30% of A level

Content

- All practical skills
- All content

The task for today: The iodine clock experiment

- ▶ You all have an experiment to carry out and then pool your answers with the rest of the group.
- ▶ We will all mix our iodine clock reagents together at the same time, and then record how long it takes for the reaction to take place.
- ▶ The chemistry:
- ▶ Hydrogen peroxide reacts with iodide ions to form iodine:
- ▶ $\text{H}_2\text{O}_2 + 2\text{H}^+ + 2\text{I}^- \rightarrow \text{I}_2 + 2\text{H}_2\text{O}$
- ▶ The liberated iodine reacts with sodium thiosulphate in the mixture:
- ▶ $\text{I}_2 + 2\text{S}_2\text{O}_3^{2-} \rightarrow 2\text{I}^- + \text{S}_4\text{O}_6^{2-}$
- ▶ When all the sodium thiosulphate has been used up, the free iodine remains in solution and is detected with starch indicator that is also in the mixture.

Question: What is the independent variable in this experiment?

The task for today: The iodine clock experiment

- ▶ Question: What is the independent variable in this experiment?
- ▶ Answer: The concentration of the sodium thiosulphate.



Holiday work:

- ▶ **Section 1 – Practical – The molar heat of combustion of ethanol.**
- ▶ Please watch the video clip (14mins) – see the link below and complete the tasks in the accompanying booklet:
- ▶ <https://www.youtube.com/watch?v=GOwoLI8fH20>

- ▶ **Section 2 – Booklet**
- ▶ Complete the booklet 'AS CHEMISTRY - AQA 7404 - Y12 Chemistry Course Preparation - Basic skills for the AS level Chemist'.

Completion of work:

When completing the work set for A level Chemistry please do the following:

- ▶ Watch all video clips carefully and make your own notes from the video, pausing the video clips to give yourself time to make good quality notes.
- ▶ Answer all questions to each activity in full sentences.
- ▶ When completing calculations, please show all formulas, show all working out, and remember to include the unit at the end.

