

# A level Chemistry: Sir Joseph Williamson's Mathematical School

## Detailed course information

### Course guidelines

You will be taught by two members of staff. Teacher A will teach you for 8 out of 10 lessons, delivering the main curriculum content. Teacher B will teach you for 2 out of 10 lessons, enforcing folder checks, reinforcing key items of the curriculum, and feeding back from tests and assessments. You will have major exams and feedback on a termly basis.

Each topic has a concluding assessment, but normal homework tasks are not generally graded to allow you to focus on learning rather than worry about standards on exercises which are too narrow to accurately grade.

No external AS exams are offered or will be sat in year 12. There is no coursework component, though you will be internally assessed on core practical skills during the course; this part of the course returns 'P' (pass) or 'NC' (not competent); 'P' is required for almost all further education courses.

A curriculum map is shown below:

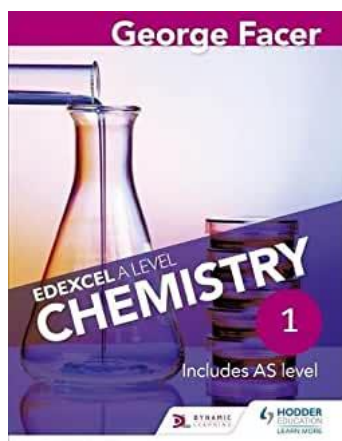
	Year 12		Year 13	
Term	Curriculum	Assessments	Curriculum	Assessments
1	<ul style="list-style-type: none"><li>Atomic structure</li><li>Periodicity</li><li>Bonding</li></ul>	Year 12 September (entrance) test	<ul style="list-style-type: none"><li>Further kinetics*</li><li>Chemical equilibria*</li></ul>	Year 13 September test Unstructured calculations
2	<ul style="list-style-type: none"><li>Quantitative chemistry*</li><li>Quantitative analysis*</li></ul>	Year 12 November class test	<ul style="list-style-type: none"><li>Acid-base equilibria*</li><li>Organic chemistry II: Arenes</li></ul>	Year 13 November exam Unstructured calculations
3	<ul style="list-style-type: none"><li>Inorganic chemistry – groups of the periodic table</li></ul>	Year 12 term 3 exam	<ul style="list-style-type: none"><li>Organic chemistry III: Nitrogen compounds*</li><li>Organic analysis*</li></ul>	Year 13 January mock exams Unstructured calculations
4	<ul style="list-style-type: none"><li>Organic chemistry I: hydrocarbons, halogenoalkanes* and alcohols*</li></ul>		<ul style="list-style-type: none"><li>Redox equilibria*</li><li>Transition metals*</li></ul>	Unstructured calculations
5	<ul style="list-style-type: none"><li>Energetics*, entropy and free energy</li></ul>	Year 12 mock exam	<ul style="list-style-type: none"><li>Synthetic organic chemistry and analysis**</li></ul>	Year 13 Mock set 1 and set 2 (5 exams)
6	<ul style="list-style-type: none"><li>Spectroscopy including nmr.</li></ul>	Year 12 term 6 exam	[Final exams]	

\* = core practical activity takes place in this unit, contributing to the Core Practical Designation.

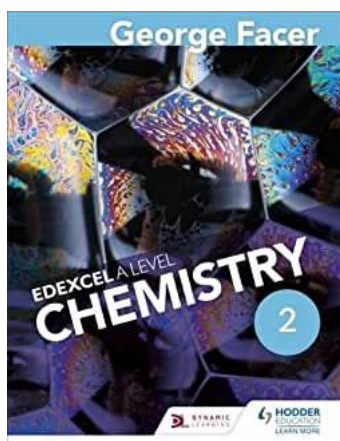
## Resources you will need

If you decide to undertake A2 Chemistry course here you will be expected to provide your own Lab coat to undertake the large amount of practical work with hazardous substances. You are also recommended to obtain your own safety glasses as ones you purchase are suitable for almost all experimental work. School goggles provide full protection but may be cumbersome. (Post-COVID rules will probably make personal PPE mandatory to reduce the spread of infection.)

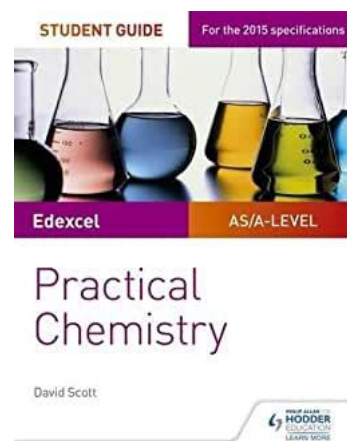
You will be provided with some textbooks by the department, which you must return in good condition:



The paper 1 course book

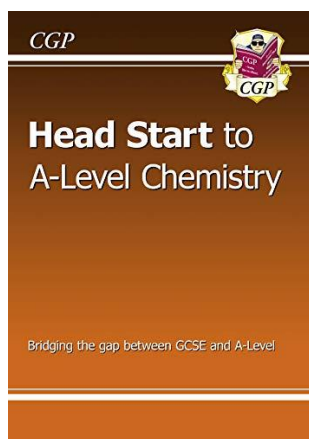


The paper 2 course book

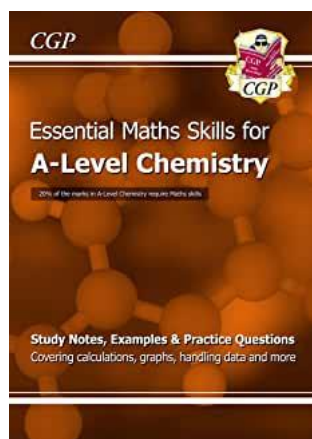


The paper 3 guide book

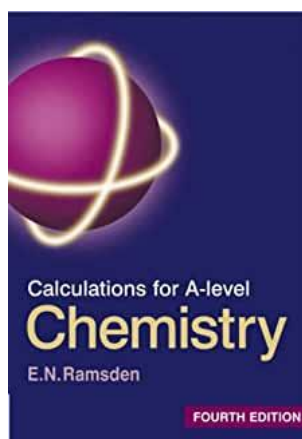
However, I recommend the following books as well, some of which are useful 'bridging' resources and others useful throughout the course:



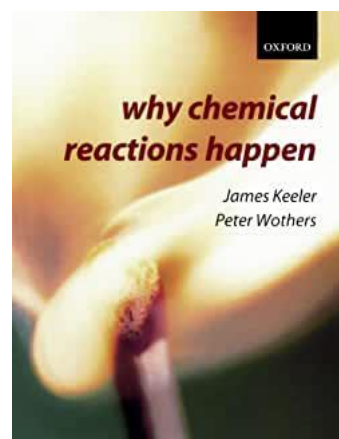
£5 – essential if you did Combined Science. The first exam early in September is based on this content. Important to make a good start!



£7 – essential if you do not take the recommended supporting subject of mathematics, recommended for everybody.



£33 – worth every penny as calculations are 20% of all final exam marks



About £25 – an extension resource for student pursuing A/A\* or Oxbridge entrance.

The best web-resources are:

- <https://qualifications.pearson.com/en/qualifications/edexcel-a-levels/chemistry-2015.html> - the Exam board web page for past papers, mark schemes, specification etc. etc. Essential.
- <https://www.aqa.org.uk/subjects/science/as-and-a-level/chemistry-7404-7405> - not our exam board but AQA specification is very similar and almost all the AQA past papers are relevant and helpful resources.
- <https://www.chemguide.co.uk/> - just about the only web-based support not full of errors!
- <https://edu.rsc.org/resources> - and of course the Royal Society knows what they are doing!

## Skills and attributes you will need:

### Essential:

- Willingness to be fully involved in lessons, to discuss and argue with peers and teachers, coupled with complete lack of concern about being 'wrong' during class discussions and homework tasks – we will have a lot of misconceptions to erase from GCSE, which requires honesty from everyone.
- Determination to undertake meaningful revision work every day for just 20 minutes;
- Acceptance that you are likely to find the course hard; determination to overcome all problems encountered during assessment with meaningful improvement work;
- Good GCSE grade 7-9. You would be unwise to take the course at all without at least grade 8 (whether Combined or Triple science was chosen).
- Agreement to keep and maintain a (well, three actually) folder(s) of succinct, highly focused revision notes based mainly around the errors made in written examined assessments – which you will carry out regularly to support your own learning
- Subscription to the sixth-form 'academic working week' – every hour in a lesson is supported with at least one hour of work outside of lessons, and two hours at weekends.

### Recommended:

- Preference for high levels of academic challenge in learning;
- Choice of Mathematics and/or Physics as one of your other A levels;
- Willingness to read around subject; innate interest in Chemistry;
- Probable choice of a science-based career;
- Excellent at all GCSE sciences and mathematics.
- I do not recommend Chemistry as a choice in a 4-subject portfolio, unless the subjects are Chemistry, Physics, Maths, Further Maths.

### What we offer:

- Bespoke course designed by an experienced A-level examiner, customised to the needs of high-achieving students.
- Exceptional practical opportunities in modern laboratories.
- Highly organised approach; nothing is left to chance.
- Uncompromising high expectations with open-door support policy to help you progress.
- Regular, accurate, meaningful assessment – you will know exactly where you stand. What you do about it, will be up to you!
- Well above 50% of students gain A or A\* as a final outcome – which is very good odds!