

5 hours in... Chemistry

Research shows that the most successful students (i.e. those that make the most progress and get the highest grades) are doing between 20 and 25 hours of independent study per week by the end of Year 13. That may seem a lot, but it's something that you would build up to over the course of your A-Levels. In Year 12, we're talking something more like 15 hours per week. This equates to roughly 5 hours of independent study per A-Level per subject.

Remember that your independent study is divided into three types – Consolidation, Reactive and Proactive.

Consolidation

The evening following a Chemistry lesson, you should spend 12-15 minutes (24-30 minutes for a double) rereading your notes, writing the summary section at the bottom of your Cornell notes and making relevant flashcards e.g. for equations, definitions, facts you need to recall etc.

Reactive

This is your 'homework'. Each of your chemistry teachers should give you at least 1 hours' worth of homework each week. If they don't – ask them for some! If you find this takes more than 1 hour, that's fine, you can take this from the proactive phase (not from the consolidation phase though). Equally, if you find you finish your reactive work quickly, spend more time on your proactive work.

Proactive

This is the section that will broaden and deepen your overall understanding of the subject you are studying. It will not necessarily involve work that has been set by your teacher, but instead it is about you doing the extra practice questions, reading articles, watching videos, TED talks etc. In Chemistry, this might contain some of the following:

- Complete a set of practice past paper questions – available on 365 or on the AQA website (**1 hour**)
- Use websites to complete and add to class notes (**30 minutes**)
- Use the specification checklist to evaluate your understanding (**10 mins**)
- Answer questions in your Required Practical booklet (**30 mins**)
- Practice exam questions from your Chemistry textbook or workbook (**30 mins**)
- "Read, Cover, Write and Check" sections of Knowledge organisers (**30 mins**)
- Complete a section of questions on Isaac Chemistry (**30 minutes**)
- Chemistry review articles from LRC (**20 mins**)
- Watch a TED talk on a Chemistry topic (**20 mins**)
- Try a Chemistry Olympiad question, and analyse mark scheme (**20 mins**)
- Attempt some interesting questions on the Cambridge Chemistry Challenge (**20 mins**)
- Watch some videos and complete some quizzes on Seneca (**30 mins**)

Useful links

- **365** <https://becbd.sharepoint.com/BecLearners/Science/KS5/Y12Chemistry/SitePages/Home.aspx>
- **AQA Past papers** <https://www.aqa.org.uk/find-past-papers-and-mark-schemes>
- **Chemrevise** <https://chemrevise.org/>
- **A-Level Chemistry** <http://www.a-levelchemistry.co.uk/>
- **Chemistry Review** <https://tinyurl.com/beckfoot-alevel-magazines>
- **Isaac Chemistry** <https://isaacphysics.org/chemistry>
- **TED Talks** <https://www.ted.com/talks?sort=newest&language=en&topics%5B%5D=Science>
- **Chemistry Olympiad** <https://edu.rsc.org/resources/chemistry-olympiad-past-papers/1641.article>
- **Cambridge Chemistry Challenge** <http://www.c3l6.org/posts>
- **Seneca** <https://www.senecalearning.com/>



5 hours in... Chemistry – your weekly review

Week beginning: _____

What have I been learning with Dr Wright? _____

What have I been learning with Mrs Milner? _____

| Consolidation (tick when complete) | | Reactive 1 | Reactive 2 | Proactive 1 | Proactive 2 | Proactive 3 |
|------------------------------------|--|------------|------------|-------------|-------------|-------------|
| Lesson 1 | | | | | | |
| Lesson 2 | | | | | | |
| Lesson 3 | | | | | | |
| Lesson 4 | | | | | | |
| Lesson 5 | | | | | | |
| Time spent | | | | | | |

Total time spent on Independent Learning in Chemistry this week: _____

Areas that require further review

Things I need to ask Dr Wright/Mrs Milner

Checked by: _____ (teacher)

5 hours in... Chemistry – your weekly review (an example)

Week beginning: 03/02/2020

What have I been learning with Dr Wright? Identification of ions; reactions of chlorine

What have I been learning with Mrs Milner? Organic chemistry - Alkanes

| Consolidation (tick when complete) | | Reactive 1 | Reactive 2 | Proactive 1 | Proactive 2 | Proactive 3 |
|------------------------------------|---------------|---|---|--|--|--|
| Lesson 1 | ✓ | Complete Chemsheet questions on identification of ions – to hand in next Tuesday – GDW. | Draw summary of fractional distillation of crude oil and answer exam questions for next Monday – CLM. | Complete Amount of Substance multiple choice questions from 365. | Read article on “Elements Old and New” – Chem Review Vol 28, 2018-2019, Number 3, Feb 2019, and answer questions | Watch TED talk – “The Incredible Chemistry Powering Your Smartphone” and write a short summary |
| Lesson 2 | ✓ | | | | | |
| Lesson 3 | ✓ | | | | | |
| Lesson 4 | ✓ | | | | | |
| Lesson 5 | ✓ | | | | | |
| Time spent | 1 hour | 40 minutes | 1 hour | 1 hour 20 minutes | 35 minutes | 20 minutes |


Total time spent on Independent Learning in Chemistry this week: 4 hours 55 minutes

Areas that require further review

- Ionic equations
- Reasons for substances having different boiling points e.g. C_2H_6 vs $C_{20}H_{42}$
- $pV = nRT$ – what units to use for V and how to convert?

Things I need to ask Dr Wright/Mrs Milner

- Q4 on the multiple choice questions – how is the answer A?
- Why is the solution acidified when testing for SO_4^{2-} ?
- What do we need to know about alpha particles?

Checked by:  (teacher)