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partners in excellence

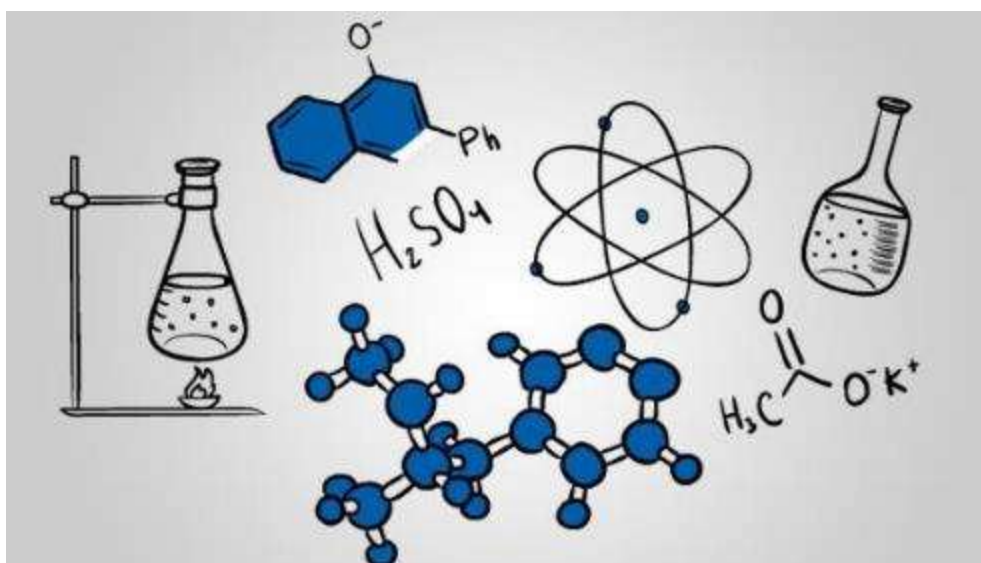
PiXL6
Gateway

Wider reading and research tasks for A Level Chemistry

**Get ready for A-level!
A guide to help you explore chemistry**

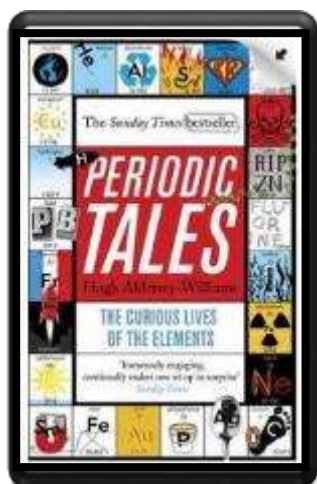
So you are considering A level Chemistry?

This pack contains loads of further reading and research projects to prepare you to start A level in Chemistry in September. It is aimed to be used after you complete your GCSE, throughout the remainder of the summer term and over the summer holidays to ensure you are ready to start your course in September.



Book Recommendations

Kick back this summer with a good read. The books below are all popular science books and great for extending your understanding of chemistry

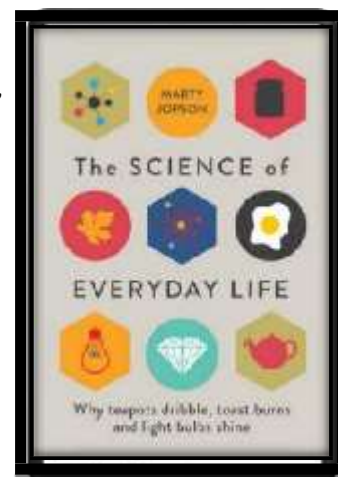


Periodic Tales: The Curious Lives of the Elements

This book covers the chemical elements, where they come from and how they are used. There are loads of fascinating insights into uses for chemicals you would have never even thought about.

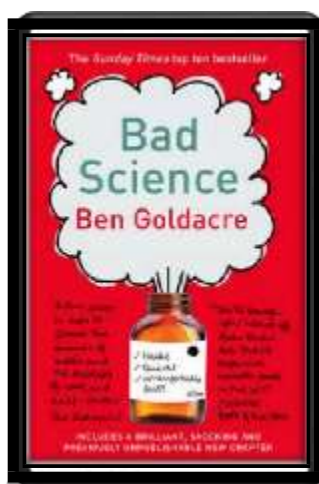
The Science of Everyday Life: Why Teapots Dribble, Toast Burns and Light Bulbs Shine

The title says it all really, lots of interesting stuff about the things around your home!



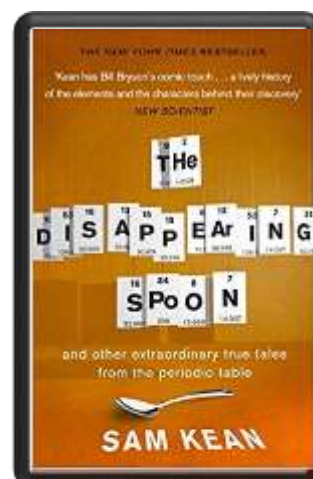
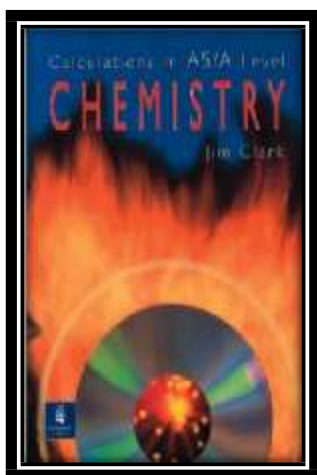
Bad Science

Here Ben Goldacre takes apart anyone who published bad / misleading or dodgy science – this book will make you think about everything the advertising industry tries to sell you by making it sound 'sciencey'.



Calculations in AS/A Level Chemistry

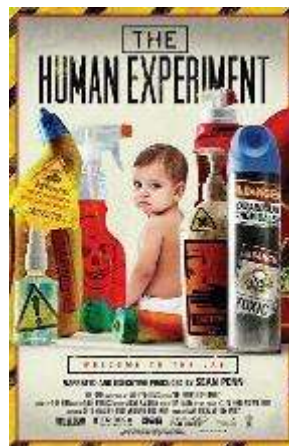
If you struggle with the calculations side of chemistry, this is the book for you. Covers all the possible calculations you are ever likely to come across. Brought to you by the same guy who wrote the excellent chemguide.co.uk website.



One of our crowning scientific achievements is also a treasure trove of passion, adventure, betrayal and obsession. **The Disappearing Spoon** follows the elements, their parts in human history, finance, mythology, conflict, the arts, medicine and the lives of the (frequently) mad scientists who discovered them.

Movie Recommendations

Everyone loves a good story and everyone loves some great science. Here are some of the picks of the best films based on real life scientists and discoveries. You won't find Jurassic Park on this list! We've looked back over the last 50 years to give you our top 5 films you might not have seen before. Great watching for a rainy day.



The Human Experiment (2013)

A documentary that explores chemicals found in everyday household products.

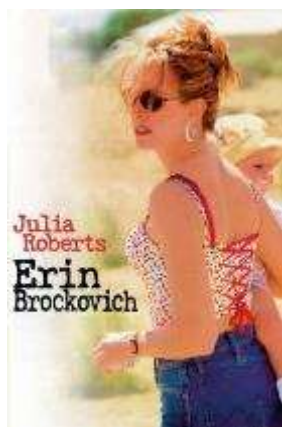
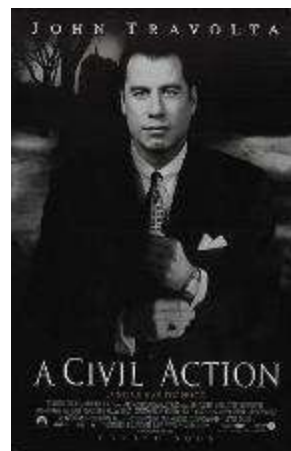
An Inconvenient Truth (2006)

Al Gore, former presidential candidate campaigns to raise public awareness of the dangers of global warming and calls for immediate action to curb its destructive effects on the environment. (See also: An Inconvenient Sequel, 2017)



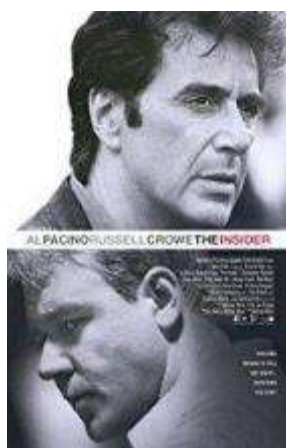
A Civil Action (1998)

A tenacious lawyer takes on a case involving a major company responsible for causing several people to be diagnosed with leukemia due to the town's water supply being contaminated, at the risk of bankrupting his firm and career.



Erin Brockovich (2000)

Based on a true story. An unemployed single mother becomes a legal assistant and almost single-handedly brings down a California power company accused of polluting a city's water supply.



The Insider (1999)

A research chemist comes under personal and professional attack when he decides to appear in a "60 Minutes" expose on Big Tobacco.

Movie Recommendations

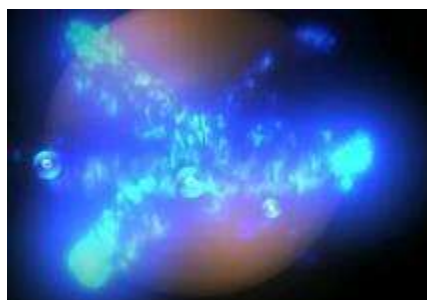
If you have 30 minutes to spare, here are some great presentations (and free!) from world leading scientists and researchers on a variety of topics. They provide some interesting answers and ask some thought-provoking questions. Use the link or scan the QR code to view:

Play with Smart Materials

Available at :

https://www.ted.com/talks/catarina_mota_play_with_smart_materials

Ink that conducts electricity; a window that turns from clear to opaque at the flip of a switch; a jelly that makes music. All this stuff exists, it's time to play with it. A tour of surprising and cool new materials.



Just how small is an atom?

Available at :

https://www.ted.com/talks/just_how_small_is_an_atom

Just how small are atoms? Really, really, really small. This fast-paced animation from TED-Ed uses metaphors (imagine a blueberry the size of a football stadium!) to give a visceral sense of just how small atoms are.

Battling Bad Science

Available at :

https://www.ted.com/talks/ben_goldacre_battling_bad_science#t-44279

Every day there are news reports of new health advice, but how can you know if they're right? Doctor and epidemiologist Ben Goldacre shows us, at high speed, the ways evidence can be distorted, from the blindingly obvious nutrition claims to the very subtle tricks of the pharmaceutical industry.



How Spectroscopy Could Reveal Alien Life

Available at :

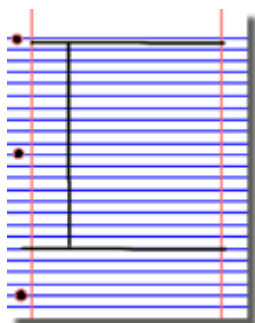
https://www.ted.com/talks/garik_israelian_what_s_inside_a_star

Garik Israelian is a spectroscopist, studying the spectrum emitted by a star to figure out what it's made of and how it might behave. It's a rare and accessible look at this discipline, which may be coming close to finding a planet friendly to life.

Research Activities

Research, reading and note making are essential skills for A level chemistry study. For the following tasks you can produce 'Cornell Notes' to summarise your reading.

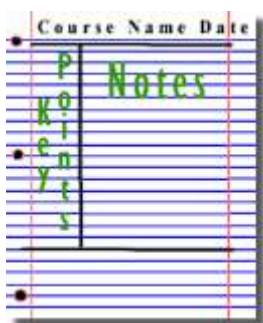
1. Divide your page into three sections like this



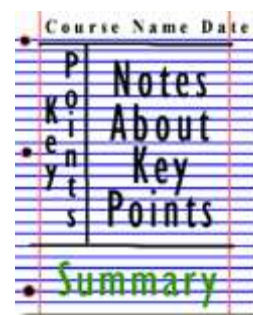
2. Write the name, date and topic at the top of the page



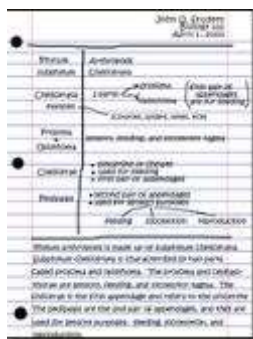
3. Use the large box to make notes. Leave a space between separate idea. Abbreviate where possible.



4. Review and identify the key points in the left hand box



5. Write a summary of the main ideas in the bottom space



Images taken from <http://coe.jmu.edu/learningtoolbox/cornellnotes.html>

Research Activities

Our friends at the University of Birmingham have produced a brilliant online project investigating toxicology!
Check out <https://chembam.com/home-learning/toxicology/>



The other activities are all from CATALYST magazine, and are great way of exploring how research is conducted.
Do all of them, or pick the most interesting-sounding ones. It's up to you!

Topic 1: Using Plastics in the Body

Available at:

<https://www.stem.org.uk/resources/elibrary/resource/382317/using-plastics-body>

This Catalyst article looks at how scientists are learning to use polymers for many medical applications, including implants, bone repairs and reduction in infections.



Topic 2: Catching a Cheat

Available at:

<https://www.stem.org.uk/system/files/elibrary-resources/2017/03/Catching%20a%20cheat.pdf>

This Catalyst article looks at analytical chemists who are involved in many kinds of testing, including drug testing to catch cheats in sport.



Topic 3: Diamond: More than just a gemstone

Available at:

<https://www.stem.org.uk/system/files/elibrary-resources/2017/02/Diamond%20more%20than%20just%20a%20gemstone.pdf>

This Catalyst article looks at diamond and graphite which are allotropes of carbon. Their properties, which depend on the bonding between the carbon atoms, are also examined.



Topic 4: The Bizarre World of High Pressure Chemistry

Available at:

Research Activities

https://www.stem.org.uk/system/files/elibrary-resources/2016/11/Catalyst27_1_the_bizarre_world_of_high_pressure_chemistry.pdf

This Catalyst article investigates high pressure chemistry and discovers that, when put under extreme pressure, the properties of a material may change dramatically.



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Topic 5: Microplastics and the Oceans

Available at:

https://www.stem.org.uk/system/files/elibrary-resources/2016/11/Catalyst27_1_microplastics_%20and_the_oceans.pdf

This Catalyst article looks at microplastics.

Microplastics are tiny particles of polymer used in many products. They have been found to be an environmental pollutant especially in oceans.



Ideas for Day Trips

Many of these science centres and museums also have online exhibitions! Check them out!

Glasgow Science
Centre - Glasgow

Dundee Science
Centre - Dundee

W5 - Belfast

Colour Experience -
Bradford

Catalyst Discovery
Centre - Widnes

Cambridge Science
Centre - Cambridge

Black Country Living
Museum - Dudley

The Whipple
Museum -
Cambridge

Think-tank -
Birmingham

National Museum -
Cardiff

The Faraday Museum
- London

Bristol Science
Centre - Bristol

Science on Social Media

Check out the “wider reading” page that we’ve put on your science class onenote page!

Open your emails, click on the 9-dot-square in the top left corner, open onenote and go to “shared with me”

Follow on Twitter:

Salters’ Institute - Our activities include Festivals of Chemistry; Chemistry Camps; Curricula; Awards for Technicians, Graduates, A Level Students; and Seminars

@salters_inst

Daily A Level Chemistry Facts – Daily Chemistry Facts (Based on the A-Level AQA spec but most facts work with all)

@chemAlevels

Chemistry News –The latest chemistry news from only the best sources

@chemistrynews

Compound Interest– Graphics exploring everyday #chemistry. Winner of @absw 2018 science blog award

@compoundchem

Chemistry World – Chemistry magazine bringing you the latest chemistry news and research every day. Published by the Royal Society of Chemistry.

@ChemistryWorld

Royal Society of Chemistry - Promote, support and celebrate chemistry. Follow for updates on latest activities

@RoySocChem

Periodic Videos– Chemistry video series by @BradyHaran & profs at the Uni of Nottingham - also see

@sixtysymbols & @numberphile

@periodicvideos



Websites

These websites all offer an amazing collection of resources that you should use again and again through out your course.

chemguide

Helping you to understand
Chemistry

MAIN MENU

This website is very detailed and identifies other resources which are sharing incorrect or outdated information and suggests the correct materials to use. The site also contains links to the syllabuses of many exam boards which means it is accessible and useful to all students. <https://www.chemguide.co.uk/>



The free revision website for students studying GCSE and A- levels. S-cool provides revision guides, question banks, revision timetable and more <https://www.s-cool.co.uk/a-level/chemistry>

chemrevise

Resources for A-level and GCSE Chemistry

HOME A-LEVEL REVISION GUIDES GCSE REVISION GUIDES

SUGGESTED REVISION TIMETABLES REVISION RESOURCES CONTACT

Updates to A-level Textbook

The site was first made to host revision guides that are written for AQA A-level Chemistry. These revision guides have already been circulating on the internet for a couple of years on places like student room. This will be the place for the most up to date versions of them. The site has now extended to cover other exam boards. (OCR and Edexcel)

<https://chemrevise.org/>



Tons of awesome courses in one awesome channel! Check out the playlists for past courses in physics, philosophy, games, economics, U.S. government and politics, astronomy, anatomy & physiology, world history, biology, literature, ecology, chemistry, psychology, and of course, chemistry! <https://www.youtube.com/user/crashcourse/featured>