

A Level Chemistry

Please complete one line from the task box below. All students must complete the middle box.

Research the structure of the atom including subatomic particles and their properties. Include a timeline of discoveries (e.g. Dalton, Rutherford).	Create a mind map summarising the periodic table layout, periodicity, and trends in Group 2 and Group 7.	Explain the difference between ionic, covalent, and metallic bonding. Include diagrams and examples.
Investigate how to calculate relative atomic mass using isotopic abundances. Try a sample calculation.	Write a summary explaining mole calculations, Avogadro's number, and how to use the equation: $\text{moles} = \text{mass} \div \text{Mr}$.	Draw and explain simple shapes of molecules using electron pair repulsion theory (VSEPR).
Research key differences between exothermic and endothermic reactions. Give examples and draw energy profile diagrams.	Explore the idea of enthalpy change (ΔH). Explain what it means and how it's measured.	Read about a historical chemistry experiment (e.g. flame tests or electrolysis). Summarise what it showed and why it was important.

Useful resources/websites

- <https://www.chemguide.co.uk/>
- <https://senecalearning.com/en-GB/>
- <https://www.khanacademy.org/science/chemistry>

Suggested books/reading list

- Periodic Tales by Hugh Aldersey-Williams
- The Disappearing Spoon by Sam Kean
- Moles, Molecules and Mass Spectrometry by Peter Gribben
- Why Chemical Reactions Happen by James Keeler & Peter Wothers