

A-Level Chemistry - AQA, Specification 7405 (A-Level)

The following tasks will require substantial research and independent study. It is essential that you complete the tasks within this transition document and present them to your class teacher in your first lesson at the start of the new academic year. These tasks will support your understanding of key concepts that you will be tested on in the induction assessments, taken within the first 3 weeks, that ultimately decide if you are suitable to continue on this course.

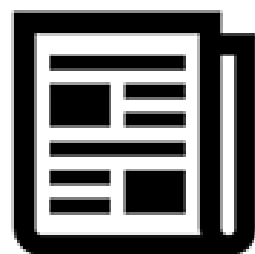
Units/Topics	Supporting Links	Reading
3.1.1 Atomic structure 3.1.2 Amount of substance	Topic Specification: Click here for topic specification Topic Specification: Click here for topic specification	Specification, Practical Skills Handbook, and Study Notes to support tasks 1-3: Click here for your study materials, course specification and practical skills handbook
TASK 1: <ul style="list-style-type: none"> Create a comprehensive timeline documenting the historical development of atomic structure understanding, demonstrating how scientific models evolve through evidence and experimentation. The models must include: Dalton's atomic theory and supporting evidence, Thomson's plum pudding model and cathode ray experiments, Rutherford's gold foil experiment and nuclear model discovery, Bohr's planetary model and energy level concepts Modern quantum mechanical model principles 	TASK 2: <p>Imagine you are an examiner producing a test on topic 3.1.2 (amount of substance). Use Dr David Boyce's amount of substance video, Khan Academy's isotope and ion exercises and PMT's detailed atomic structure notes to produce a test with 20 questions covering topic 3.1.2. You must also produce a detailed mark scheme for the test with correct answers and full workings for each question.</p>	TASK 3: <p>Research and prepare a comprehensive PowerPoint presentation on how electron arrangement determines:</p> <ul style="list-style-type: none"> Chemical bonding capacity and types Periodic table organization and trends Ion formation tendencies Chemical reactivity patterns <p>Presentation Structure:</p> <ol style="list-style-type: none"> Introduction covering fundamental atomic structure principles Detailed explanation of electron arrangement rules and notation Analysis of how electronic structure predicts chemical behavior Case studies of specific elements demonstrating structure-property relationships Conclusions connecting atomic level understanding to macroscopic chemical phenomena

Know your why – Why Chemistry?

<https://edu.rsc.org/future-in-chemistry/career-options/do-i-need-chemistry-to->

Please prepare your work for tasks 1, 2 and 3 in the form of an electronic document (e.g. .doc, .docx, .ppt, etc.) and submit this via email to mahmed@raynespark.merton.sch.uk **NOTE: You must not plagiarise – your work must be entirely your own, and you must provide references/links for any secondary sources of information (e.g., URL's for webpages or images) you use to produce your work!**

Further Research



[Further Reading - Khan Academy \(Atomic Structure & Development of Atomic Model\)](#)

[Further Reading \(OpenStax - Atomic Structure - Orbitals\)](#)

Further Listening

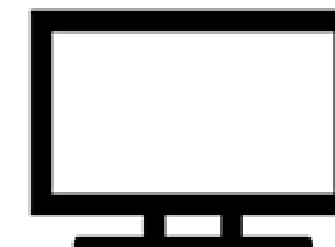


[Revise A-Level Chemistry - Seneca Learning - Podcasts](#)

[Head Start to A-Level Chemistry - Atomic Structure \(Videos\)](#)

[David Boyce's amount of substance video](#)

Further Watching



[Atom - Clash of Titans \(Jim Al-Khalili\)](#)

[The Mystery of Matter: "INTO THE ATOM" \(Documentary\)](#)