

Subject	Qualification	Examination Board
Chemistry	A Level & Practical Endorsement	AQA

Task Overview:

Summer transition work to prepare you for A level Chemistry
Complete task 1 and a minimum of any **three** of the other tasks below

Success Criteria:

Task 1: Structure and bonding

- Produce separate resources showing each type of compound:
 - Ionic, metallic, simple covalent and giant covalent
- For each include
 - a. How electrons are shared/given/taken
 - b. What forces there are between the particles
 - c. The structures formed
 - d. The general properties
 - e. Dot and cross diagrams (not for metallic or giant covalent)

Task 2: The history of atoms

- Produce an annotated timeline with diagrams showing how ideas about the atom have changed over time
 - Include ideas such as the Dalton model, and the plum pudding model, how these ideas were developed and why they changed.

Task 3: Atomic structure

- Produce a poster or other resource showing:
 - The types and properties of sub-atomic particles
 - How the mass number and atomic number can be used to find information about an atom
 - Electron configuration

Task 4: The Periodic table

- Read and research Mendeleev's periodic table and summarise the key concepts used
- Read and research the **modern** periodic table and summarise the key concepts used
- How electron configuration is linked to the position of the element on the modern periodic table
- Make a table comparing the similarities and differences between Mendeleev's table and the modern table

Task 5: Laboratory techniques

- By researching online produce a simple flowchart outline the main steps involved in the following procedures:
 - a. Preparation of a standard solution
 - b. Carrying out a simple acid-base titration

Task 6: Amount of substance

- Research and produce a resource showing what the following terms mean and how they can each be calculated or worked out:
 - Mass number
 - Relative atomic mass
 - Relative formula mass
 - Moles
 - Include how this could be calculated from:
 - i. Mass and relative mass
 - ii. Concentration and volume
 - iii. Volume of gas at room temperature and pressure
 - Reacting mass/theoretical yield

- Empirical formulae
- Atom economy
- Actual yield
 - You would have to measure this directly, rather than calculating it
- Percentage yield

Task 7: Further reading

- By using the AQA Chemistry textbooks, or any other suitable resources (see below, Seneca is excellent) read around the following topics:
 - a. Structure and bonding
 - b. Electron shells, sub-shells and orbitals
 - c. Moles and mass calculations
 - d. The ideal gas equation
 - e. Electronegativity
 - f. Intermolecular forces
 - Limited to Van der Waals forces, dipole attractions and hydrogen bonding.

Task 8: Seneca, reading A level content

- Use <https://www.senecalearning.com/>
- Register for an account if you do not already have one and use the Chemistry AQA A Level unit to start reading and preparing for the first units – we will start with physical chemistry.

Resources:

- <https://www.bbc.com/bitesize/examspecs/zy984j6>
- <https://www.senecalearning.com/> (Chemistry: Edexcel (or AQA) GCSE Higher)
- AQA A-level chemistry unit on seneca
- Required textbook for the course: **AQA Chemistry, A Level (Year 1 and AS), 2nd Edition. Ted Lister and Janet Renshaw. Oxford press.**
- Any existing revision guides or textbooks you own.

How the work produced will fit into subsequent work and the specification as a whole?

These topics lead into the first units studied at A level and provide a foundation for the rest of the Chemistry A level.

How the work should be presented?

Your choice of presentation but must be able to show evidence that the work has been completed (screenshots or photos of completed work are fine)

Who to contact if you should require further assistance with the work before the end of term?

Mr B Young, Head of Chemistry
b.young@gildredgehouse.org.uk

Length of time expected to complete tasks:

1-2 hours per task

Submission Requirements:

Bring evidence with you to the first lessons in September

What equipment will be needed for the subject?

Standard stationery, a calculator, the course textbook (AQA Chemistry; A Level – Year 1 and AS. Oxford University Press)