# Transition Task: Chemistry

| Subject | Qualification | Examination Board |
|---|---|---|
| Chemistry | A Level & Practical Endorsement | AQA |

**Task Overview:**

Summer transition work to prepare you for A level Chemistry

**Success Criteria:**

**Task 1: 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 2: 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 3: 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 4: 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 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 5: 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

- Mole - 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 6: 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 7: 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 Chemistry

**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)

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| 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: | |
| Submission Requirements: | |

**What equipment will be needed for the subject?**

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