

A-Level Chemistry Transition Work

It is time to start preparing for A-Level Chemistry.

To succeed, you will need to be well prepared, as A-Level Chemistry can be challenging and requires consistent effort and commitment. The more prepared you are before the course begins, the smoother your transition from GCSE to A-Level will be. To help you get ready, we have created a transition task that reflects the style of work you will complete during your A-Level Chemistry lessons. Throughout the course, you will regularly complete independent work during private study periods, supervised study sessions, or at home.

This work may include the following:

Pre-Work – This is completed before attending a lesson. It usually involves creating a set of notes on a new topic and familiarising yourself with key concepts before they are explored in class. You may also complete some simple calculations using new equations.

PVs (Pupil Versions) - These are booklets containing exam-style questions designed to give you targeted practice. These questions are similar to those you will encounter in your Year 13 summer examinations and will help you develop your exam technique throughout the course.

Exam Questions - At times, your A-Level Chemistry teachers may set specific exam questions for you to complete.

The transition work in this booklet is designed to familiarise yourself with the content you must know before starting the course. The activities you are asked to complete before your first lesson in September are structured in the same way as the work you will complete during Years 12 and 13.

All of the content is based on knowledge and skills from GCSE Chemistry, so you will not be required to learn any Year 12 content before the course begins. Instead, this work will help you refresh and strengthen your existing understanding, ensuring that you are fully prepared for the start of your A-Level studies.

Have fun!

Ms Ford, Miss Davis and Mrs Kirby

Task	Work to Complete
Atomic Structure	• Draw and label an atom. • Explain how Rutherford's experiment changed the atomic model. • Calculate the relative atomic mass of chlorine given: 75% Cl-35 , 25% Cl-37
Structure and Bonding	1) Draw dot-and-cross diagrams for: • MgO • H₂O • NH₃ 2) Explain why diamond conducts electricity poorly. 3) Compare diamond and graphite. 4) Create a table comparing the properties of ionic, simple molecular, giant covalent and metallic compound
Calculations	Calculate the following: • Moles in 22 g CO₂ • Mass of NaCl produced when 0.25 mol NaOH is added to HCl • Percentage yield if: Theoretical = 15 g , Actual = 12 g Research definitions of the following key terms: • Limiting reactant • Atom economy
Rates and Equilibrium	1. Explain why increasing temperature increases reaction rate. 2. Define dynamic equilibrium. 3. Predict the effect of increasing pressure on: $\text{N}_2(\text{g}) + 3\text{H}_2(\text{g}) \rightleftharpoons 2\text{NH}_3(\text{g})$

Organic Chemistry	1) Write molecular formulae for: • Methane • Ethane • Propane • Butane 2) Explain why alkenes are more reactive than alkanes. 3) Describe the chemical test for an alkene.
Practical Skills	For each of the following practical methods, draw and label a diagram of the equipment and describe the type of solutions they are used to separate: • Filtration • Crystallisation • Distillation • Chromatography • Titration
Extension Task	Why is Chemistry sometimes called “The Central Science”?