

**Mastery:**

# Y13 Chemistry Curriculum Sequence

**Intent:** To build upon the foundation of Y12 chemistry, learn each topic in more detail and in more depth, and prepare students for the transition to higher education

## Term 1

**Aqueous ions, Organic chemistry,  
Thermodynamics, Kinetics, Electrochemical cells**

## Term 2

**Organic chemistry, Acids and bases, Polymers,  
DNA**

## Term 3

**Revision**

### Why start here?

The first topic in Y13 is aqueous ions, which directly follows on from the transition metal topic. The other topics studied in term one all aim to build on fundamental knowledge from Y12. Further organic chemistry introduces even more functional groups and types of reaction to the students. Thermodynamics and kinetics both expand on the energetics and kinetics topics from Y12 but go into much more detail and introduce more complex theories. This then finishes the whole physical chemistry A-level spec and allows lots of time over Y13 to recap and review.

### Spec links:

3.2.6 Reactions of inorganic compounds in aqueous solutions  
3.3.7 Nomenclature and optical isomerism  
3.3.8 Aldehydes and ketones  
3.3.9 Carboxylic acids  
3.3.10 Aromatic chemistry  
3.1.8 Thermodynamics  
3.1.9 Rate equations  
3.1.10 Equilibrium constant and K<sub>p</sub>  
3.1.11 Electrode potentials and electrochemical cells

### Teaching these topics here supports:

Organic synthesis  
Acids and bases  
NMR

### These topics feed from:

Introduction to organic chemistry  
Alkanes  
Alkenes  
Alcohols  
Transition metals  
Energetics  
Kinetics  
GCSE Electrolysis

### Why move onto these units?

The units studied in term 2 are the final topics of A-level chemistry. The final parts of organic chemistry are done, including significant cross-curricular links with biology, and acids and bases and period 3 oxides also finishes the inorganic side of the course. All these topics require knowledge from the previous 4 terms.

### Spec links:

3.3.11 Amines  
3.3.14 Organic synthesis  
3.1.12 Acids and bases  
3.3.15 NMR  
3.2.4 Properties of period 3 and their oxides  
3.3.16 Chromatography  
3.3.12 Polymers  
3.3.13 Amino acids, proteins and DNA

### Teaching these topics here supports:

Further chemistry education

These topics complete the A-level content

### These topics feed from:

All previous organic chemistry topics in Y12 and Y13  
Periodicity  
GCSE and A-level Biology

### Why move onto these units?

The final term is assigned to recapping more difficult topics from the previous 2 years, along with revision and practice for the upcoming final exams

### Spec links:

### Teaching these topics here supports:

Further chemistry education

### These topics feed from: