

# AQA A Level Chemistry - Specification Checklist

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**PPQs** = Past paper questions

## Year 1 (AS)

### 3.1 Physical Chemistry - Year 1 Content

#### 3.1.1 - Atomic structure

Num.	Topic Name	Topic covered?	Flashcards made?	Flashcards learnt?	PPQs Done?
3.1.1.1	Fundamental particles				
3.1.1.2	Mass number and isotopes				
3.1.1.3	Electron configuration				

#### 3.1.2 - Amount of substance

Num.	Topic Name	Topic covered?	Flashcards made?	Flashcards learnt?	PPQs Done?
3.1.2.1	Relative atomic mass and relative molecular mass				
3.1.2.2	The mole and the Avogadro constant				
3.1.2.3	The ideal gas equation				
3.1.2.4	Empirical and molecular formula				
3.1.2.5	Balanced equations and associated calculations				

### 3.1.3 - Bonding

Num.	Topic Name	Topic covered?	Flashcards made?	Flashcards learnt?	PPQs Done?
3.1.3.1	Ionic bonding				
3.1.3.2	Nature of covalent and dative bonds				
3.1.3.3	Metallic bonding				
3.1.3.4	Bonding and physical properties				
3.1.3.5	Shapes of simple molecules and ions				
3.1.3.6	Bond polarity				
3.1.3.7	Forces between molecules				

### 3.1.4 - Energetics

Num.	Topic Name	Topic covered?	Flashcards made?	Flashcards learnt?	PPQs Done?
3.1.4.1	Enthalpy change				
3.1.4.2	Calorimetry				
3.1.4.3	Applications of Hess's law				
3.1.4.4	Bond enthalpies				

### 3.1.5 - Kinetics

Num.	Topic Name	Topic covered?	Flashcards made?	Flashcards learnt?	PPQs Done?
3.1.5.1	Collision theory				
3.1.5.2	Maxwell-Boltzman distribution				
3.1.5.3	Effect of temperature on reaction rate				
3.1.5.4	Effect of concentration and pressure				

3.1.5.5	Catalysts				
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### 3.1.6 - Chemical equilibria, Le Chatelier's principle and K<sub>c</sub>

Num.	Topic Name	Topic covered?	Flashcards made?	Flashcards learnt?	PPQs Done?
3.1.6.1	Chemical equilibria and Le Chatelier's principle				
3.1.6.2	Equilibrium constant K <sub>c</sub> for homogeneous systems				

### 3.1.7 - Oxidation, reduction and redox equations

Num.	Topic Name	Topic covered?	Flashcards made?	Flashcards learnt?	PPQs Done?
3.1.7	Oxidation, reduction and redox equations				

## 3.2 Inorganic Chemistry - Year 1 Content

### 3.2.1 - Periodicity

Num.	Topic Name	Topic covered?	Flashcards made?	Flashcards learnt?	PPQs Done?
3.2.1.1	Classification				
3.2.1.2	Physical properties of Period 3 elements				

### 3.2.2 - Group 2, the alkaline earth metals

Num.	Topic Name	Topic covered?	Flashcards made?	Flashcards learnt?	PPQs Done?
3.2.2	Group 2, the alkaline earth metals				

### 3.2.3 - Group 7(17), the halogens

Num.	Topic Name	Topic covered?	Flashcards made?	Flashcards learnt?	PPQs Done?
3.2.3.1	Trends in properties				
3.2.3.2	Uses of chlorine and chlorate (I)				

## 3.3 Organic Chemistry - Year 1 Content

### 3.3.1 - Introduction to organic chemistry

Num.	Topic Name	Topic covered?	Flashcards made?	Flashcards learnt?	PPQs Done?
3.3.1.1	Nomenclature				
3.3.1.2	Reaction mechanisms				
3.3.1.3	Isomerism				

### 3.3.2 - Alkanes

Num.	Topic Name	Topic covered?	Flashcards made?	Flashcards learnt?	PPQs Done?
3.3.2.1	Fractional distillation of crude oil				
3.3.2.2	Modification of alkanes by cracking				
3.3.2.3	Combustion of alkanes				
3.3.2.4	Chlorination of alkanes				

### 3.3.3 - Halogenoalkanes

Num.	Topic Name	Topic covered?	Flashcards made?	Flashcards learnt?	PPQs Done?
3.3.3.1	Nucleophilic substitution				
3.3.3.2	Elimination				
3.3.3.3	Ozone depletion				

### 3.3.4 - Alkenes

Num.	Topic Name	Topic covered?	Flashcards made?	Flashcards learnt?	PPQs Done?
3.3.4.1	Structure, bonding and reactivity				
3.3.4.2	Addition reactions of alkenes				
3.3.4.3	Addition polymers				

### 3.3.5 - Alcohols

Num.	Topic Name	Topic covered?	Flashcards made?	Flashcards learnt?	PPQs Done?
3.3.5.1	Alcohol production				
3.3.5.2	Oxidation of alcohols				
3.3.5.3	Elimination				

### 3.3.6 - Organic analysis

Num.	Topic Name	Topic covered?	Flashcards made?	Flashcards learnt?	PPQs Done?
3.3.6.1	Identification of functional groups by test-tube reactions				
3.3.6.2	Mass spectrometry				
3.3.6.3	Infrared spectroscopy				

## Year 2

### 3.1 Physical Chemistry - Year 2 Content

#### 3.1.8 - Thermodynamics

Num.	Topic Name	Topic covered?	Flashcards made?	Flashcards learnt?	PPQs Done?
3.1.8.1	Born-Haber cycles				
3.1.8.2	Gibbs free-energy, $\Delta G$ , and entropy change, $\Delta S$				

#### 3.1.9 - Rate equations

Num.	Topic Name	Topic covered?	Flashcards made?	Flashcards learnt?	PPQs Done?
3.1.9.1	Rate equations				
3.1.9.2	Determination of rate equations				

#### 3.1.10 - Equilibrium constant $K_p$ for homogeneous systems

Num.	Topic Name	Topic covered?	Flashcards made?	Flashcards learnt?	PPQs Done?
3.1.10	Equilibrium constant $K_p$ for homogeneous systems				

#### 3.1.11 - Electrode potentials and electrochemical cells

Num.	Topic Name	Topic covered?	Flashcards made?	Flashcards learnt?	PPQs Done?
3.1.11.1	Electrode potentials and cells				
3.1.11.2	Commercial applications of electrochemical cells				

### 3.1.12 - Acids and bases

Num.	Topic Name	Topic covered?	Flashcards made?	Flashcards learnt?	PPQs Done?
3.1.12.1	Brønsted–Lowry acid–base equilibria in aqueous solution				
3.1.12.2	Definition and determination of pH				
3.1.12.3	The ionic product of water, $K_W$				
3.1.12.4	Weak acids and bases $K_a$ for weak acids				
3.1.12.5	pH curves, titrations and indicators				
3.1.12.6	Buffer action				

## 3.2 Inorganic Chemistry - Year 2 Content

### 3.2.4 - Properties of Period 3 elements and their oxides

Num.	Topic Name	Topic covered?	Flashcards made?	Flashcards learnt?	PPQs Done?
3.2.4	Properties of Period 3 elements and their oxides				

### 3.2.5 - Transition metals

Num.	Topic Name	Topic covered?	Flashcards made?	Flashcards learnt?	PPQs Done?
3.2.5.1	General properties of transition metals				
3.2.5.2	Substitution reactions				
3.2.5.3	Shapes of complex ions				
3.2.5.4	Formation of coloured ions				

3.2.5.5	Variable oxidation states				
3.2.5.6	Catalysts				

### 3.2.6 - Reactions of ions in aqueous solution

Num.	Topic Name	Topic covered?	Flashcards made?	Flashcards learnt?	PPQs Done?
3.3.6	Reactions of ions in aqueous solution				

## 3.3 Organic Chemistry - Year 2 Content

### 3.3.7 - Optical isomerism

Num.	Topic Name	Topic covered?	Flashcards made?	Flashcards learnt?	PPQs Done?
3.3.7	Optical isomerism				

### 3.3.8 - Aldehydes and ketones

Num.	Topic Name	Topic covered?	Flashcards made?	Flashcards learnt?	PPQs Done?
3.3.8	Aldehydes and ketones				

### 3.3.9 - Carboxylic acids and derivatives

Num.	Topic Name	Topic covered?	Flashcards made?	Flashcards learnt?	PPQs Done?
3.3.9.1	Carboxylic acids and esters				
3.3.9.2	Acylation				

### 3.3.10 - Aromatic chemistry

Num.	Topic Name	Topic covered?	Flashcards made?	Flashcards learnt?	PPQs Done?
3.3.10.1	Bonding				

3.3.10.2	Electrophilic substitution				
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### 3.3.11 - Amines

Num.	Topic Name	Topic covered?	Flashcards made?	Flashcards learnt?	PPQs Done?
3.3.11.1	Preparation				
3.3.11.2	Base properties				
3.3.11.3	Nucleophilic properties				

### 3.3.12 - Polymers

Num.	Topic Name	Topic covered?	Flashcards made?	Flashcards learnt?	PPQs Done?
3.3.12.1	Condensation polymers				
3.3.12.2	Biodegradability and disposal of polymers				

### 3.3.13 - Amino acids, proteins and DNA

Num.	Topic Name	Topic covered?	Flashcards made?	Flashcards learnt?	PPQs Done?
3.3.13.1	Amino acids				
3.3.13.2	Proteins				
3.3.13.3	Enzymes				
3.3.13.4	DNA				
3.3.13.5	Action of anticancer drugs				

### 3.3.14 - Organic synthesis

Num.	Topic Name	Topic covered?	Flashcards made?	Flashcards learnt?	PPQs Done?
3.3.14	Organic synthesis				

### 3.3.15 - Nuclear magnetic resonance spectroscopy

Num.	Topic Name	Topic covered?	Flashcards made?	Flashcards learnt?	PPQs Done?
3.3.15	Nuclear magnetic resonance spectroscopy				

### 3.3.16 - Chromatography

Num.	Topic Name	Topic covered?	Flashcards made?	Flashcards learnt?	PPQs Done?
3.3.16	Chromatography				