

# Chemistry Overview 2023-2026 Y9 with separate science in purple

Assumed prior knowledge	Chemistry Y9	Chemistry Y10	Chemistry Y11
	<b>Atomic Structure 5.1</b> 5.1.1.1 Atoms, elements and compounds 5.1.1.2 Mixtures (was Purity) 5.1.1.3 Model of the atom (also in Phys) 5.1.1.5 Size and mass of atoms	<b>Atomic Structure 5.1</b> 5.1.1.4 Relative electrical charges 5.1.1.6 Relative atomic mass 5.1.1.7 Electronic structure 5.1.2.2 Development of the periodic table 5.1.2.3 Metals and non-metals 4.1.3 Properties of transition metals 5.1.2.4 Group 0 5.1.2.5 Group 1 5.1.2.6 Group 7	<b>Atomic Structure 5.1</b> 5.1.2.4 Group 0 5.1.2.5 Group 1 5.1.2.6 Group 7
	<b>Bonding Structure and periodic table 5.2</b> 5.2.2.1 The three states of matter 5.2.2.2 State symbols 5.2.1.1 Chemical bonds 5.2.1.5 Metallic bonding 5.2.2.7 Properties of metal and alloys 5.2.2.8 Metals as conductors	<b>Bonding Structure and periodic table 5.2</b> 5.2.1.2 Ionic Bonding 5.2.1.3 Ionic compounds 5.2.1.4 Covalent Bonding 5.2.2.3 Properties of ionic compounds 5.2.2.4 Properties of small molecules 5.2.2.5 Polymers	<b>Bonding Structure and periodic table 5.2</b> 5.2.2.5 Polymers 5.2.2.6 Giant covalent 5.2.3.1 Diamond 5.2.3.2 Graphite 5.2.3.3 Graphene and fullerenes 4.2.4 Bulk and surface properties of matter
	<b>Quantitative Chemistry 5.3</b> 5.3.1.1 Conservation of mass	<b>Quantitative Chemistry 5.3</b> 5.3.1.2 RFM 5.3.1.3 Mass changes when a product is a gas 5.3.1.4 Chemical measurements 5.3.2.1 Moles 5.3.2.2. Amounts of substances in equations 5.3.2.3 Using moles to balance equations	<b>Quantitative Chemistry 5.3</b> 5.3.2.4 Limiting reactants 5.3.2.5 Concentrations of solutions 4.3.3 Yield and atom economy 5.3.1.3 Mass changes when a product is a gas 5.3.1.4 Chemical measurements 5.3.2.1 Moles 5.3.2.2. Amounts of substances in equations 5.3.2.3 Using moles to balance equations
	<b>Chemical Changes 5.4</b> 5.4.1.1 Metal Oxides 5.4.1.2 The reactivity series 5.4.1.3 Extraction of metals and reduction 5.4.2.1 Reactions of acids with metals	<b>Chemical Changes 5.4</b> 5.4.2.2 Neutralisation of acids and salt production 5.4.2.3 Soluble salts (RP8) 5.4.1.4 Oxidation and reduction in terms of electrons 5.4.2.4 The pH scale and neutralisation 5.4.2.5 Titrations (RP) 5.4.2.6 Strong and weak acids	<b>Chemical Changes 5.4</b> 5.4.3.1 The process of electrolysis 5.4.3.2 Electrolysis of molten ionic compounds 5.4.3.3 Using electrolysis to extract metals 5.4.3.4 Electrolysis of aqueous solutions (RP9)
	<b>Energy Changes 5.5</b> 5.5.1.1 Energy transfer during exo and endothermic reactions (RP10) 5.5.1.2 Reaction profiles	<b>Energy Changes 5.5</b>	<b>Energy Changes 5.5</b> 5.5.1.2 Reaction profiles 5.5.1.3 The energy change of reactions 4.5.2 Chemical cells Fuel cells
	<b>The rate &amp; extent of chemical change 5.6</b> 5.6.1.1 Calculating rates of reaction 5.6.1.2 factors which affect the rates of chemical reactions (RP11) 5.6.1.3 Collision theory and activation energy	<b>The rate &amp; extent of chemical change 5.6</b> 5.6.2.1 Reversible reactions 5.6.2.2. Energy changes in reversible reactions 5.6.2.3 Equilibrium	<b>The rate &amp; extent of chemical change 5.6</b> 5.6.1.4 Catalysts 5.6.2.4 The effect of changing conditions on equilibrium 5.6.2.5 The effect of changing concentration 5.6.2.6 The effect of changing temperature 5.6.2.7 The effect of changing pressure
	<b>Organic Chemistry 5.7</b> 5.7.1.1 Crude oil, hydrocarbons and alkanes 5.7.1.2 Fractional distillation and petrochemicals 5.7.1.3 Properties of hydrocarbons 4.7.2.1 Structure and formula of alkenes	<b>Organic Chemistry 5.7</b> 5.7.1.4 Cracking and alkenes 4.7.2.2 Reactions of alkenes 4.7.2.3 Alcohols 4.7.2.4 Carboxylic acids	<b>Organic Chemistry 5.7</b> 4.7.3 Synthetic and naturally occurring polymers
	<b>Chemical Analysis 5.8</b> 5.8.1.1 Pure substances 5.8.1.2 Formulations 5.8.1.3 Chromatography (RP12) 5.8.2.1 Test for hydrogen 5.8.2.2 Test for oxygen 5.8.2.3 test for carbon dioxide 5.8.2.4 Test for chlorine	<b>Chemical Analysis 5.8</b> 4.8.2 Identification of ions (RP)	<b>Chemical Analysis 5.8</b>
	<b>Chemistry of the Atmosphere 5.9</b> 5.9.1.1 The proportions of different gases in the atmosphere 5.9.1.2 The Earth's early atmosphere 5.9.1.3 How oxygen increased (photosynthesis in y10 bio?) 5.9.1.4 How the carbon dioxide decreased	<b>Chemistry of the Atmosphere 5.9</b> 5.9.2.1 Greenhouse gases 5.9.2.2 Human activities which contribute to an increase in greenhouse gases in the atmosphere 5.9.3.1 Atmospheric pollutants from fuels 5.9.3.2 Properties and effects of atmospheric pollutants	<b>Chemistry of the Atmosphere 5.9</b> 5.9.2.3 Global climate change 5.9.2.4 The carbon footprint and its reduction
	<b>Using resources 5.10</b> 5.10.1.1 Using the Earth's resources and sustainable development 5.10.1.4 Alternative methods of extracting metals 5.10.1.2 Potable water (RP13) 5.10.1.3 Waste water treatment	<b>Using resources 5.10</b> 5.10.2.1 Life cycle assessment 5.10.2.2 Ways of reducing the use of resources 4.10.3 Using Materials	<b>Using resources 5.10</b> 4.10.4 The Haber process and NPK fertilisers (taught in Rates)

Triple only

Separate HT only

# Chemistry Overview 2023-2026 Y9 with separate science in purple

Taught a year earlier in separate

(RP) required practical for separate only

(RP) required practical for all