



Curriculum Plans – Year 10 – Chemistry

Please find below a detailed outline of the curriculum covered in *Science* through Year 10 in Key Stage 4.

| BLOCK | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|-------------|---|--|---|---|---|--|--|
| Dates | August - September (5 weeks) | October (4 weeks) | November - December (6 weeks) | January - February (5 weeks) | February - March (6 weeks) | April (4 weeks) | May - June (7 weeks) |
| Topics | States of Matter (Unit 1) <ul style="list-style-type: none"> • Solids, liquids and gases • Diffusion • Practical skills (heating curves) Atoms, Elements and Compounds and Bonding (Unit 2) <ul style="list-style-type: none"> • Elements, compounds and mixtures • Separation techniques • Atomic structure and the Periodic Table • Isotopes • Ions and ionic bonds • Simple molecules and covalent bonds • Giant covalent structures • Metallic bonding | Stoichiometry - Moles (Unit 3) <ul style="list-style-type: none"> • Formulae • Relative masses of atoms and molecules • The mole and Avogadro constant • Molar gas volume • Concentration • Titration • Empirical and molecular formulae • Percentage yield, percentage composition by mass and percentage purity • Practical skills (titration) | Metals (Unit 9) <ul style="list-style-type: none"> • Properties of metals • Uses of metals • Alloys and their properties • Reactivity series • Corrosion of metals • Extraction of metals • Practical skills (displacement with carbon) Electrochemistry (Unit 4) <ul style="list-style-type: none"> • Redox (Unit 6) • Electrolysis of molten ionic compounds • Electrolysis of aqueous ionic compounds • Half equations • Hydrogen-oxygen fuel cells • Practical skills (electrolysis) | Chemical Energetics (Unit 5) <ul style="list-style-type: none"> • Physical and chemical changes • Exothermic and endothermic reactions • Reaction pathway diagram • Enthalpy change • Activation energy • Bond energy calculations • Practical skills | Chemical Reactions (Rate and Equilibrium) (Unit 6) <ul style="list-style-type: none"> • Rate of reaction • Factors affecting the rate of reaction: temperature, concentration, surface area, catalysts, gas pressure • Collision theory • Reversible reactions and equilibrium • Practical methods • Redox | Acids, bases and salts (Unit 7) <ul style="list-style-type: none"> • The characteristic properties of acids and bases • Oxides • Preparation of salts • Titration • Practical skills | The Periodic Table (Unit 8) <ul style="list-style-type: none"> • Arrangement of elements • Group I properties • Group VII properties • Transition elements • Noble gases • Practical skills <p>End of Y10 Assessment</p> <p>Revision of Y10</p> |
| Assessments | Unit 1 and 2 Assessment | Unit 1-3 Assessment | Unit 1-4 + 9 Assessment | Unit 1-5 + 9 Assessment | Unit 1-6 + 9 Assessment | Unit 1-7 + 9 Assessment | End of Y10 Assessment |