



Science - Chemistry

Key Stage 4 - Year 10 – Triple Award

Term One	Term Two	Term Three
The Periodic Table	Chemical Changes	Energy Changes and Extent of Reactions
<ul style="list-style-type: none">• Development of the periodic table• Electronic structures and the periodic table• Alkali metals• Halogens• Halide displacement• Explaining trends• The transition elements	<ul style="list-style-type: none">• The reactivity series• Displacement reactions• Extracting metals• Salts from metals• Salts from insoluble bases• Making more salts (carbonates)• Neutralisation and pH scale• Strong and weak acids	<ul style="list-style-type: none">• Exothermic and endothermic reactions• Using energy transfers from reactions• Reaction profiles• Bond energy calculations• Reversible reactions• Energy and reversible reactions• Dynamic equilibrium• Altering conditions• Making ammonia – The Haber process• Review dynamic equilibrium shifts• The economics of the Haber process• Making fertilisers in the laboratory• Making fertilisers in industry

Science - Chemistry

Bonding, Structure and the Properties of Matter	Electrolytes	The Earth's resources
<ul style="list-style-type: none">• States of matter• Atoms into ions• Ionic bonding• Giant ionic structures• Empirical formula• Bonding in metals• Giant metallic structures – alloys• Covalent bonding• Giant covalent structures• Structure of simple molecules• Fullerenes and graphene• Nanoparticles• Application of nanoparticles	<ul style="list-style-type: none">• Introduction to electrolysis• Changes at the electrodes• Aluminium consolidation tasks• Chemical cells and batteries• Fuel cells• Electrolysis of aqueous solutions• Brine consolidation task	<ul style="list-style-type: none">• Finite and renewable resources• Water safe to drink• Testing the purity of water• Reduce, reuse, recycle• Life cycle assessments



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Key Stage 4 - Year 11 – Triple Award

Term One	Term Two	Term Three
Crude Oil and Fuels <ul style="list-style-type: none">HydrocarbonsFractional distillation of oilBurning hydrocarbon fuelsAtmospheric pollutantsCracking hydrocarbons	Chemical Calculations <ul style="list-style-type: none">Relative masses and moles and EF reviewEquations and calculationsFrom masses to balanced equationsThe yield of a chemical reactionAtom economyExpressing concentrationsTitrationsTitration calculationsVolumes of gases	Exams <ul style="list-style-type: none">Revision and exams
Organic Reactions <ul style="list-style-type: none">Reactions of the alkenesStructures of alcohols, carboxylic acids and estersReactions and uses of alcoholsCarboxylic acids and esters		

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KING EDWARD VI
SCHOOL LICHFIELD

Polymers		
<ul style="list-style-type: none">• Addition polymerisation• Condensation polymerisation• The properties of polymers• Natural polymers• DNA		
Odds and Sods		
<ul style="list-style-type: none">• Rusting• Useful alloys• Glass, ceramics and composites• Tests for positive ions• Tests for negative ions• Instrumental analysis		