Science - Chemistry

KING EDWARD VI
SCHOOL LICHFIELD

Key Stage 4 - Year 10 – Combined Science

Term One	Term Two	Term Three
The Periodic Table	**Chemical Changes**	**Electrolysis**
• Development of the periodic table • Electronic structures and the periodic table • Alkali metals • Halogens • Halide displacement • Explaining trends	• The reactivity series • Displacement reactions • Extracting metals • Extracting metals from ores • Salts from metals • Salts from insoluble bases • Making more salts (carbonates) • Neutralisation and pH scale • Strong and weak acids • Concentration Calculations	• Introduction to electrolysis • Changes at the electrodes • Aluminium consolidation tasks • Brine consolidation task

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Bonding, Structure and the Properties of Matter		Energy Changes and Extent of Reactions
• 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		• Exothermic and endothermic reactions • Using energy transfers from reactions • Reaction profiles • Bond energy calculations • Reversible reactions • Energy and reversible reactions • Dynamic equilibrium • Altering conditions

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Key Stage 4 - Year 11 – Combined Science

Term One	Term Two	Term Three
The Earth's resources	**Chemical Calculations**	**Exams**
• Finite and renewable resources • Water safe to drink • Testing the purity of water • Treating waste water • Reduce, reuse, recycle • Life cycle assessments	• Relative masses and moles and EF review • Equations and calculations • From masses to balanced equations • Expressing concentrations	• Revision and exams
Crude Oil and Fuels		
• Hydrocarbons • Fractional distillation of oil • Burning hydrocarbon fuels • Atmospheric pollutants • Cracking hydrocarbons		