SIR WILLIAM ROBERTSON ACADEMY

CHEMISTRY CURRICULUM MAP

Further Study
University – chemistry, medicine, chemical engineering
Apprenticeships – analytical chemistry

Career Paths
Chemical engineer, medicine, forensics science general science, researcher , pharmaceuticals

Skills
Research, analysis, practical/investigation, problem-solving

Interest
A continued passion and love of learning about chemistry

Mock exams

PERIOD 3 OXIDES
- Properties and reactions with acids/bases

TRANSITION METALS
- Reaction of aqueous ions

REVISION

REVISION & EXAMS

EQUILIBRIUM CONSTANTS
- Equilibrium constant in homogenous systems

TRANSISTION METALS
- Properties and reactions

RP 11 Carry out simple test-tube reactions to identify transition metal ions in aqueous solution

RP 8 Measuring the EMF of an electrochemical circuit

RP 10 Preparation of a pure organic solid and test its purity

RATE EQUATIONS
- Rate constants and rate determining step

CHEMICAL ANALYSIS AND SYNTHESIS
- Identifying and producing organic compounds including using NMR

ELECTRODE POTENTIALS
- Electrochemical cells and reactivity

POLYMERS AND BIOCHEMISTRY
- Condensation polymers including proteins and starch

ACIDS AND BASES
- Calculating pH of solutions and buffers

AROMATICS AND AMINES
- Mechanisms of reactions including benzene rings

THERMO-DYNAMICS
- Born - Haber cycles and entropy

CARBOXYL GROUP
- Mechanisms of carboxylic acids, ketones and aldehyde reactions

RP 7 Measuring the rate of a reaction by an initial and a continuous monitoring method

RP 9 Investigation of pH changes in titrations

RP 12 Separation of species by thin-layer chromatography

Year 13

RP 2 Measurement of an enthalpy change

RP 5 Distillation of a product from a reaction

ENERGETICS
- Enthalpy changes and Hess' Law

ALKANES
- Trends and reactions of alkanes

CHEMICAL EQUILIBRIA
- Le Chateliers' principle and the equilibrium constant

ALKENES
- Mechanisms of reactions of alkenes

REDOX AND GROUP 2
- Oxidation states and half equations

ALCOHOLS
- Reactions of alcohols and trends according to structure

GROUP 7 AND PERIODICITY
- Trends and reactions in Group7 and across a period

ORGANIC ANALYSIS
- Identifying organic compounds using reactions and IR

HALOGENO-ALKANES
- Mechanisms of halogenoalkanes

RP 1 Make up a volumetric solution and carry out a titration

RP 3 Investigation of how the rate of a reaction changes with temperature

End of HT1 assessment

Year 12 mock exams

RP 6 Tests for organic substances

RP 4 Identifying cations and anions

AMOUNT OF SUBSTANCE
- calculations involving the mole and introducing the ideal gas equation

KINETICS
- Energy of particles and the rate of reaction

INTRODUCTION TO ORGANIC CHEMISTRY

ATOMIC STRUCTURE
- Trends of properties across a period and electron configuration

BONDING
- Types of bonding, structures and shapes of molecules

Year 12