Curriculum Map

Chemistry

Year 11

Quantitative Chemistry
Relative Formula Mass and Moles recap, Conservation of Mass, Moles and Equations, Amounts of substances in equations, Using moles to balance equations, Limiting reactants, Volume of gases

Resources & Organic Compounds
Concentrations and calculations, Atom energy, Percentage yield, Reactions and Industry, Extracting metals from ores, The Haber Process, NPK Fertilisers. Mock Exam. Alkenes, Reactions of Alkenes, Addition Polymers, Alcohols, Carboxylic Acids, Condensation Polymers, Naturally Occurring Polymers.

Chemical Analysis
Purity and Formulations, Analysing paper Chromatography, Tests for common gases, Positive ions and Flame test, Negative ions and tests, Flame Emission Spectroscopy

Using Resources
Properties and Uses of Materials, Alloys, Corrosion, Resources and Sustainability, Reuse and Recycling, Life Cycle Assessments, Potable Water, Waste Water Treatment

Exam Information
Two exam papers, 1h 45 mins each
Foundation or Higher Tier

Next Steps
A-level Chemistry, or careers in Medicine, Dentistry, Chemical Engineering, Veterinary Science, Agriculture, Nursing, Materials Science and Engineering.

Year 10

Reversible Reactions
Reversible Reactions, Le Chatelier's Principle

Energy Changes
Energy Transfer in Reactions, Reaction Profiles, Energy in Reactions, Cells and Batteries, Fuel Cells

Bonding and Structure
Ions, Ionic Bonding, Ionic Compounds, Covalent Bonding, Simpler Molecular Substances, Larger Covalent Substances, Allotropes of Carbon, Metallic Bonding

Rates of Reaction
Rate of Reaction, Measuring Rates of Reaction, Rates of Reaction Graphs, Experimentation

Chemical Changes
Acids and Alkalis, Titrations, Strong and Weak Acids, Reactions of Acids, Acids and Alkalis, Titrations, Strong and Weak Acids, Reactions of Acids, Reactivity of Metals, Metal Oxides and Redox, Redox Reactions, Electrolysis of Metal Ores and Aqueous Solut

The Periodic Table
Group 1 The Alkali Metals, Group 7 The Halogens, Group 0 The Noble Gases, Transition Elements

Year 9

Chemistry of the Atmosphere
Evolution of the Atmosphere, Greenhouse gases and Climate change, Carbon footprints, Air pollution

Hydrocarbons and Crude Oil
Hydrocarbons, Fractional Distillation of Crude Oil, Uses of Crude Oil, Cracking Crude Oil

Atoms, elements & compounds
Separation methods and definitions, Separation triangle, Equations – word and symbol, Chromatography with Rf values, Distillation

Analytical Chemistry & The Periodic Table
Purity and formulations, Flame test, Tests for gases, Negative ions –tests, History of the Atom, Electronic Structure, Isotopes, Development of the Periodic Table, The Modern Periodic Table, Metals and non-metals

Types of Matter
States of Matter, Changing State, Nanoparticles, Uses of Nanoparticles

Rates of Reaction
Rates of Reaction (concentration), Surface area, Collision theory and factors affecting rates, Catalysts research

Year 8

Earth's Resources
Recycling, Extracting metals, reactivity of metals

Earth and Climate
Understanding Global Warming. Exploring the Carbon Cycle and how humans affect it.

Reactions
Chemical reactions as the rearrangement of atoms. Representing chemical reactions using formulas and using equations

Chemical Energy
Endothermic and Exothermic Reactions. Catalysts. Energy stored in materials

Matter and Elements
Combining elements to form compounds, ceramics and Polymers

The Periodic Table
Looking at the Peirodic Table, Exploring metals and non-metals. The varying physical and chemical properties of different elements.

Prep School – Year 7

Being a Scientist
Understanding the scientific method and experimentation. Safe laboratory practice.

Matter
Particles, elements and mixtures, looking at the fundamental building blocks.

Separating Mixtures
Chromatography, distillation and filtration, investigating separation techniques.

Reactions
Investigating physical and chemical reactions.

Acids and Alkalis
Looking at common chemicals and their reactions, including neutralisation and corrosion.

Metals and non-metals
Properties, reactions and uses of materials. Evaluation of different materials based on their uses and chemical properties.