WLA Chemistry Vision

Chemistry helps drive scientific advancement, technological innovation, and societal progress we see in our modern world. In chemistry lessons, we highlight how ideas and theories that can be a source of inspiration and build on knowledge as well as its role is to understand the world around us and address global challenges.

Year 13

Carbonyl Chemistry – link properties and examples of esters, aldehydes and ketone to everyday uses
Thermodynamics – use maths to explain why some reactions are spontaneous and why some do not occur
Transition metals – explain why transitional metals have their properties and why this differs to the other groups of the periodic table
Acids and bases – using mathematical concepts to help calculate pH and how this can be affected or apply to different chemicals.
Amines
Further synthesis

Electrochemical Cells

Year 12

Introduction to organic chemistry, Alkanes, halogenoalkanes – students will build on their knowledge of these key concepts from GCSE to more complicated molecules and reactions.
Atomic structure, bonding, amount of substances – students will consolidate knowledge from GCSE and develop scientific explanations using maths to evidence the understanding.
Alkenes, alcohols and further analysis – students will explore these new functional groups and be able to link and compare and contrast different functional groups.
Redox, Group 2, Group 7 – students will develop a broader understanding of redoc, revisit and develop further reactions of Group 7 and be introduced into the elements and their reactions in Group 2.
Energetics, Kinetics

Year 11

Extraction of metals – link a metal's reactivity with how they can be extracted.
Quantitative chemistry – use maths to explain and predict what will happen in terms of mass during a chemical reaction.
TRIPLE – organic chemistry, using resources, chemical analysis — explore these topics further by looking at a wider breath of concepts.

TRIPLE – transition metals, nanoparticles, quantitative chemistry — explore these themes further from Year 10.

Year 10

Energy changes – investigate whether chemical reactions are exothermic or endothermic and how this links to how the chemicals reaction.
Organic chemistry – link the formation of crude oil to how we produce polymers.
Water – explain how we can produce potable water from different places over the world.
Chemical analysis – identify how we can test for different gases produce and how we can use chromatography to analyse mixtures.
Rates of reaction – investigate what factors affect rate and how we can optimise conditions to increase yield.

Year 9

Acids and alkalis – producing an indicator and testing different objects' pH to identify whether a substance is an alkali or acid.
Chemistry of the atmosphere – investigate how the atmosphere has changed and how human activities are affecting it day to day.

Atomic structure – link the structure of the atom to how it reacts and where it is located on the periodic table.
Bonding – identify bonding in different substances and link this to explaining the properties that the substances have.

Year 8

Chemical changes – applying skills to identify if everyday occurrences and reactions are chemical or physical changes.
Water cycle and rocks – link how the world around us works with the processes that help form our landscape.
Chemical reactions – apply knowledge of chemical reactions to identify what is happening in difference scenarios.
Air pollution – investigate how the atmosphere has changed and how human activities are affecting it day to day.

Year 7

Properties of materials – investigate the properties of different materials and how we use these in everyday lives.
Particles – classifying materials into solid liquids and gases and investigating the properties that they have.
Elements and compounds – identifying everyday logic to determine if they are elements and compounds.
Substances and mixtures – separating different examples of mixtures and identifying how we can separate a complicated mixture into its components.