Chemistry
Curriculum Road Map

Curious Minds Discover

Year 7 — **Understanding and Applying Scientific Skills** — Year 11

Understanding variables; Drawing graphs and analysing graphical data; Writing methods; Drawing conclusions; Assessing impact of scientific concepts; Understanding relationships between science and society; Applying maths to the scientific concepts; Link scientific concepts; Describe and explain patterns

YEAR 7

CHEMICAL ANALYSIS
- Pure substances
- Formulations
- Testing for gases
- Identifying ions
- Chromatography

USING RESOURCES
- Sustainable development
- Waste water
- Phytomining and bioleaching
- Reducing the use of resources
- The Haber process
- Potable water
- Life Cycle Assessments
- Using materials

ORGANIC CHEMISTRY
- Alkenes
- Alcohols
- Carboxylic acids
- Polymerisation
- Cracking
- Fractional distillation
- Alkanes

Exams → Post 16 Destinations

YEAR 11

RATE + EXTENT OF CHEMICAL CHANGE
- Le Chatelier's Principle
- Reversible reactions
- Catalysts
- Activation energy
- Collision theory
- Equilibrium
- Factors affecting the rate of reaction
- Mean rate of reaction

CHEMICAL CHANGES
- Electrolysis
- pH scale and neutralisation
- Strong + weak acids
- Titrations
- OIL RIG
- Extracting metals
- Reactions of acids
- The reactivity series

QUANTITATIVE CHEMISTRY
- Conservation of mass
- Reacting masses
- Percentage yield
- Limiting reactants
- Atom economy
- Volume of gases
- n = C x V
- m = C x V
- Moles
- Uncertainty
- Relative formula mass

STRUCTURE + BONDING
- Small molecules
- Allotropes of carbon
- Nanoparticles
- Metals + alloys
- Metallic bonding
- Covalent bonding
- Ionic bonding
- Ionic compounds
- State symbols

YEAR 10

ENERGY CHANGES
- Fuel cells
- Cells and batteries
- Energy transfer during reactions
- Reaction profiles
- Bond energies

CHEMISTRY OF THE ATMOSPHERE
- CO_2
- Carbon footprint
- The Earth's early atmosphere
- Pollutants
- Greenhouse gases

ATOMIC STRUCTURE
- Halogens
- Transition metals
- Electronic structure
- Subatomic particles
- Model of the atom over time
- Mixtures
- Noble gases
- Alkali metals
- Isotopes
- The structure of the atom

YEAR 9

MATTER
- Elements
- Compounds
- Polymers
- Ceramics + composites
- The Periodic Table

REACTIONS
- Endothermic reactions
- Exothermic reactions
- Catalysts
- Combustion
- Fuels
- Thermal decomposition

EARTH
- The Carbon cycle
- Our atmosphere
- Extracting metals
- Recycling
- Global warming
- The Earth's resources

YEAR 8

EARTH
- Our Universe
- The Earth's motion
- Stars + galaxies
- The rock cycle
- Types of rocks
- The structure of the Earth

REACTIONS
- Indicators
- Oxidation
- Metals + non metals
- Neutralisation
- Alkalis
- Acids
- Displacement

MATTER
- Solutions
- Changes of state
- Diffusion
- Chromatography
- Distillation
- Separating mixtures
- States of matter
- Gas
- Liquid
- Solid

YEAR 7

Ambition • Respect • Compassion • Courtesy • Respect