

# Science KS4 Chemistry Learning Journey



Atmosphere & Earths Resources:  
Early to modern atmosphere  
Greenhouse effect  
Atmospheric pollution

Assessment

Atmosphere & Earth's Resources cont:  
Earth's resources  
LCS's  
Potable Water  
Sewage treatment

GCSE Exams: Triple or combined

Pure substances & Analysis  
Pure substances  
Formulations  
Chromatography  
Gas tests  
Triple – ion tests & flame emission  
spectroscopy

Crude Oil:  
Fractional distillation  
Fractions of crude oil  
Alkanes & Alkenes  
Triple- Alcohols, carboxylic acids,  
polymerisation & polymers

Assessment

Rates of reaction:  
Collision theory  
Temperature & rate  
Concentration  
Surface area & Catalysts  
Reversible reactions

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Masses in reactions cont:  
Surface area  
Graph skills  
Triple: Percentage yield, atom  
economy

Assessment

Exo & Endothermic  
Theory  
Energy Changes  
Energy Profiles  
Calculations (H & Triple)  
Triple – Batteries and cells, fuel cells.

Masses in reactions:  
Moles  
Writing equations  
Percentages by mass

Bonding cont.  
Covalent giant structures  
Metallic bonding & alloys  
Triple – Polymers, ceramics &  
composites, nanoparticles

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Oxidation & Reduction cont:  
Acid reactions  
Neutralisation  
Titration (H & Triple)

Assessment

Bonding & Properties:  
Ionic structures  
Ions & ionic bonding  
Covalent bonding & Simple molecules

Oxidation & reduction  
Reactivity series  
Carbon reduction  
Electrolysis

States of matter &  
Separation techniques:  
Atoms, elements &  
compounds  
Isotopes  
Periodic table & groups

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