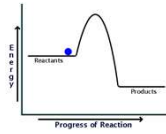


Chemistry Learning Journey- 5 Year Curriculum

A level Sciences – Biology, Chemistry and Physics (Need grade 6 and above and grade 6 in Maths)

Triple Science

Other post 16 options – Apprenticeships, other A level subjects, other BTEC subjects, other training, College?



End of year exams!!

Revision!

BTEC National Diploma in Applied Science (Need Grade 4 in Science)



YEAR 11

C12 Energy changes
Understanding that every chemical reaction has an energy change associated with it and how knowing this information can help the chemical industry

Required practical – Temperature changes

Testing for ions and uses (T)
Polymerisation (T)
Solution concentrations and volumes (T)
Transition metals and comparison (T)

Natural polymers (T)
Reactions – alcohols, carboxylic acids, esters (T)
Fuel cells, cells and batteries (T)
Nanoparticles – properties and uses (T)

Required practical – Making salts

Using energy transfers from reactions
Reaction profiles
Reversible reactions

The effect of changing conditions on equilibrium (HT)
Making fertilisers in the lab

C10 Using resources
Understanding that all the Earth's resources are finite and how humans can reduce the use of these resources

YEAR 10

Making salts from insoluble bases
Making salts from metals

Electrolysis of metal ores
Changes at the electrodes
Introduction to electrolysis

Reduce, reuse and recycle
Extraction of metals from low grade ores

Required practical – Water purification

Volume of gases
More on concentrations
Percentage yield (T)
Concentration of a solution
Atom economy (T)
Limiting reactants

Required practical Electrolysis

C11 Electrolysis and making salts
Understanding how electricity can be used to separate compounds and how acids can be used to make salts

Life cycle assessment
Waste water treatment

C9 Quantitative Chemistry
The knowledge and skills that are essential for laboratory work in industry and medicine. Being able to demonstrate analytical skills.

Balancing equations using reactants
Calculating masses from reactants and products

C8 Rates of reaction and extent of change
Understanding how in industry the rate or chemical reaction can be altered to make the product quicker

Chemical reactions
Calculating rates of reaction
The effects of Temperature
The effects of surface area

Required Practical - Rates of reaction

C9 Quantitative Chemistry

C6 Bonding and structure
Understanding how chemical bonds explain many of the chemical and physical properties of substances and chemical phenomena

YEAR 9

Combustion
Cracking
Fractional distillation

Alkenes (T)
Rates of reaction graphs
The effects of concentration and pressure
The effects of catalysts

Balancing equations
Relative formula mass and % mass
Conservation of mass
Chemical measurements

C9 Quantitative Chemistry

C6 Bonding and structure

Preventing climate change
Climate change
Carbon cycle
Pollutants and their effects

C7 Organic Chemistry
Understanding how we separate a useless mixture to get a variety of products we use everyday

States of matter
Metallic bonding and alloys
Giant covalent structures
Simple molecules
Ionic formula
Types of bonding

Nanoparticles
Graphene and fullerenes
Polymers
Covalent bonding
Atoms and ions

C6 Bonding and structure

C7 Organic Chemistry

Climate change
Carbon cycle
Pollutants and their effects

YEAR 8

C3 Metals
Linking reactivity to real life examples, uses and properties of materials used in everyday objects and why they were specifically chosen.

The reactivity series
Reactions of acids with metals
Corrosion and rusting (T)

C4 The Rock cycle
Understanding the structure of the Earth and how rocks are formed and weathered

C5 Chemistry of the atmosphere
Understanding the impact that human activity has on the atmosphere and the climate through the gases that are produced

Sedimentary rocks
Igneous rocks
Gases in the atmosphere

Pollutants and their effects
The early atmosphere

Group 0- Noble gases
Group 1 Alkali metals

Metals and their properties
Group 7- Halogens (T)
Metals and Non-metals
The Periodic Table

Acids and alkalis
Displacement
Testing for gases
The Earth's structure
Metamorphic rocks
The rock cycle

Required Practical - Chromatography

Separating mixtures - Distillation
States of matter

C1 Foundations of Chemistry
Understanding what all matter is made up of and the structure of the atom. To understand different elements have different properties and these can be used for different uses

YEAR 7

Development of the Periodic Table

C2 The Periodic Table
Understanding that scientific models develop over time and that things can change in the light of new evidence is an important concept.

Neutralisation and salts
Formulations
Chromatography
Purity and melting point
Separating mixtures - Filtration

Atoms, elements, compounds.

C1 Foundations of Chemistry



welcome

Li
Na
K
Rb
Cs
Fr

Periodic Table of the Elements																	
[Detailed periodic table grid]																	