Chemistry Learning Journey

UP HOLLAND HIGH SCHOOL

Year 7 – Year 11: Understanding and Applying Scientific Skills

- Understanding variables
- Drawing graphs and analysing graphical data
- Writing methods
- Assessing impact of scientific concepts
- Modelling scientific concepts
- Understanding relationships between science and society
- Drawing conclusions
- IDEAL Identify, describe, explain, apply, link
- Applying maths to the scientific concepts

Exam & Post – 16 Destination

Chemistry of the Atmosphere

- Using Resources
  - Fertilisers
  - Glass and Ceramics
  - Alloys and Rust
  - Polymers
  - Potable water
  - Haber Process
  - Life cycle assessments and recycling
- Greenhouse gases
- Atmospheric pollutants
- Carbon footprint
- Global Climate Change
- Evolution of the Earth's atmosphere

YEAR 11

- Organic Chemistry
  - Carbon compounds
  - Alkanes and Alkenes
  - Fractional distillation
  - Alcohols, carboxylic acids and Esters
- Chemical Analysis
  - Chromatography
  - Testing for ions - precipitation
  - Purity and formulations
  - Testing for Unknown gas
  - Testing for ions - Flame tests
  - Testing for ions - spectrometry

Rate and Extent of Chemical Change

- dynamic equilibrium
- Le Chatelier's Principle
- Reversible reactions
- Rate of reaction
- Catalysts
- Collision Theory
- Conservation of mass
- Quantitative Chemistry
  - Expressing Concentration
  - Atom Economy
  - Relative formula mass
  - Moles
- Energy Changes
  - Chemical Cells and Batteries
  - Exothermic and endothermic reactions
  - Fuel Cells
  - Reaction profiles and bond energies

Chemical Change

- Electrolysis
- pH scale
- Reactivity of metals
- Reactions of acids

YEAR 9

- Atomic Structure and the Periodic table
  - Relative atomic mass
  - Periodic table
  - Model of the atom
  - Atomic Structure
- Bonding, Structure and the Properties of Matter
  - Chemical bonds, ionic, covalent and metallic
  - Structure and bonding of carbon
  - How bonding and structure are related to properties
  - Nanoparticles

YEAR 10

The Earth

- Recycling
- Climate Change
- The Carbon Cycle
- The Rock Cycle
- Sedimentary, Igneous and Metamorphic Rock
- Polymers
- Metal Reactions
- Chromatography
- Solutions
- Group 7
- Group 1
- Groups and Periods
- Metals and Acids
  - Ceramics
  - Displacement Reactions
- Separation Techniques
  - Evaporation and Distillation
  - Filtration
  - Mixtures
- The Periodic Table
  - Group 0
  - Metals and Non-Metals

YEAR 8

- Making Salts
- Acids and Alkalis
- Exothermic and Endothermic
- Thermal Decomposition
- Chemical Reactions
- Compounds

Elements, Atoms and

- Atoms
- Compounds
- Reactions
  - Chemical Formulae
  - Word Equations
  - Burning Fuels
  - Conservation of Mass
- Acids and Alkalis
  - Indicators and pH
  - Neutralisation
- Elements
- Gas Pressure
- Boiling
- Melting and Freezing
- Collecting and Presenting Data
- Scientific Questions

YEAR 7

- Particles and their Behaviour
  - Changes of State
  - States of Matter
  - The Particle Model
- Working Scientifically
  - Analysing and Evaluating
  - Planning Investigations
- Diffusion