Chemistry AT PLECKGATE
YEAR 10 LEARNING JOURNEY

C13 the Earth's atmosphere: Introduction

YEAR 11

Describe instrumental methods of analysis, including flame emission spectroscopy.

Describe tests for negative ions including carbonates, halides, and sulfates.

Describe how to test for carbon dioxide, oxygen, hydrogen, and chlorine gas.

Describes how to identify unknown substances using chromatograms.

Describe purity and how to identify if a substance is pure or a mixture.

C12 chemical analysis

Required practical : Use chemical tests to identify unknown compounds

Describe tests for positive ions using flame tests and sodium hydroxide.

Required practical: investigate how paper chromatography can be used to separate and tell the difference between coloured substances.

Review Task: C11

Describe how sugars undergo polymerisation.

Describe the structure of nucleotides and the way they are arranged in DNA.

Describe the principles of condensation polymerisation, and how polymers are formed.

C11 polymers

End of Year 10 exam: 1st week of summer term

Describe the structures of alcohols, carboxylic acids, and esters.

Describe how to recognise carboxylic acids from their properties and how to make esters.

Describe how & why we crack hydrocarbons.

Describe the combustion of hydrocarbons.

C9 crude oil and fuels

C10 organic reactions

Describe how to recognise addition polymers and monomers from their displayed formulae.

Describe what a hydrocarbon is.

Describe the separation of different size hydrocarbons by fractional distillation.

Review Task: C9

Describe how alkenes react with different substances.

Describe the combustion, reaction with sodium and oxidation of alcohols.

Review Task: C10

Review Task: C7

Required practical :Investigating the effect of concentration on rate of reaction.

Describe what a reversible reaction is and how to represent it.

Describe what is meant by rate of a chemical reaction.

C8 rates & equilibrium

Describe how to interpret data on chemical cells.

Describe the uses of hydrogen fuel cells.

Describe how changing the pressure and temperature affects reversible reactions.

Describe what happens in energy transfers in reversible reactions & how they can be at equilibrium.

Describe the effect of surface area , temperature , concentration & catalysts on a chemical reaction.

Describe how to calculate the transfer of energy during a reaction by completing bond calculations.

Review Task: P6

Review Task: C5

Describe the reactions of bases with acids to form salts.

Describe what happens in electrolysis.

Describe the electrolysis of aqueous solutions.

Review Task: C6

Describe how to draw simple reaction profiles and how to interpret them.

Describe the differences between endothermic & exothermic reactions.

C6 electrolysis

C7 energy changes

Describe the reactions of metals with acids to form salts.

Describe why solutions are acidic or alkaline and the pH scale.

Describe what happens to ions during electrolysis.

Required practical :Investigate the electrolysis of a solution.

Describe the extraction of aluminium using electrolysis.

Describe the transfer of energy in endothermic and exothermic reactions.

Required practical :Investigating the effect of temperature changes on reacting solutions

Describe the terms weak, strong, dilute, and concentrated.

Describe the reactions of acids and alkalis and acids and carbonates.

Describe the relative reactivity of different elements.

Describe gas calculations.

Required practical: Use titrations to investigate the reacting volumes.

Describe how to balance symbol equations.

Describe how to perform titration calculations.

C5 chemical changes

C4 chemical calculations

Describe relative atomic mass.

Required practical : Prepare a salt from an insoluble metal carbonate or oxide.

Describe displacement reactions.

Describe how to use the reactivity series to identify suitable extraction methods.

Review Task: C4

Describe how to accurately measure the amount of acid and alkali needed to react together completely.

Describe sustainable production and calculating atom economy.

Describe how to express the concentration of a solution.

Describe how to calculate the theoretical yield and the percentage yield of a reaction.

Chemistry AT PLECKGATE
YEAR 11 LEARNING JOURNEY

FINAL GCSE EXAM

REVIEW and revision of all topics

Mock Exams 2

Mock Exam Week:
1st week of HT
(Paper 2 exam)

Review Task: C15

Describe why metals are alloyed and some common examples.

Describe the properties of glass, clay, ceramics, polymers, composites and metals.

Describe how ammonia can be used to make fertilisers.

C15 using our resources

Describe the conditions needed for rusting.

Describe the properties of polymers.

Describe how ammonia is made during the Haber process.

Describe how the conditions of the Haber process are related to different factors.

Describe how fertilisers are made on an industrial scale.

Describe how to decrease environmental impact by reducing, reusing, and recycling

Describe how to extract metals using biological methods.

Describe distillation and how potable water is made.

Describe how to distinguish between finite and renewable resources.

Review Task: C14

C14 the Earth's resources

Describe how to carry out Life Cycle Assessments.

Describe how waste water is treated to make it safe to release into the environment.

Required practical: analyse the purification of water samples from different sources.

Mock Exam Weeks:
5th & 6th week of HT 2
(Paper 1 exam)

Mock Exams 1

Describe changes in the atmosphere over time.

Describe how actions can limit the greenhouse effect and the emissions of carbon dioxide and methane.

C13 the Earth's atmosphere

Describe the greenhouse effect.

Describe a theory of how our atmosphere developed.

Describe pollution from fuels.

Review Task: C13

Required practical: investigate how paper chromatography can be used to separate and tell the difference between coloured substances.

Describes how to identify unknown substances using chromatograms.

C12 chemical analysis

Describe purity and how to identify if a substance is pure or a mixture

REVIEW & CATCH UP

C10 Catch up

C11 Catch up

Review Task: C12

Required practical : Use chemical tests to identify unknown compounds flame emission spectroscopy.

Describe how to test for carbon dioxide, oxygen, hydrogen, and chlorine gas.