

substance always contains the same number of entities of the substance. An amount in moles can be measured out by mass in grams, by volume in dm3 of a solution of known concentration and by volume in dm3 of a gas.

Organic Chemistry (Paper 2) Introduction to

Organic - Organic chemistry is the study of the millions of covalent compounds of the element carbon. These structurally diverse compounds vary from naturally occurring petroleum fuels to DNA and the molecules in living systems. Organic compounds also demonstrate human ingenuity in the vast range of synthetic materials created by chemists. Many of these compounds are used as drugs,

as a source of heat energy in applications such as domestic boilers and internal combustion engines.

Inorganic Chemistry (Paper 1)

Periodicity The Periodic Table provides chemists with a structured organisation of the known chemical elements from which they can make sense of their physical and chemical properties. The historical development of the Periodic Table and models of atomic structure provide good examples of how scientific ideas and explanations develop over time.

Organic Chemistry (Paper 2)

Halogenoalkanes-

Halogenoalkanes are much more reactive than alkanes. They have many uses, including as refrigerants, as solvents and in industrial processes. The further study of the equilibrium constant, Kc, considers how the mathematical expression for the equilibrium constant enables us to calculate how an equilibrium yield will be influenced by the concentration of reactants and products. **Redox** T/F1 11 TG[1WħB]







- Moles (although this is revisited here).

- E Z isomerism (33010):

- Calculations involving Masses (although this is revisited here).

- Concentration of solutions (Separate Science - although this is revisited here).

- Empirical and molecular formulae (although this is revisited here).

Introduction to Organic:

GCSE Chemistry

Some simple organic chemistry, eg alkanes and alkenes (although this is revisited here).Empirical and molecular formulas (although this is

revisited here).

Alkanes:

GCSE Chemistry

Some simple organic chemistry, eg alkanes and alkenes (although this is revisited here).
Fractional distillation of crude oil (although this is revisited here).
Empirical and molecular formulae (although this is revisited here).
Bonding:
GCSE Chemistry
Structure and bonding (re-visited here).

Periodicity:

ASChemistry

- Electron structure (3.1.1).
- Ionisation energy (3.1.1).
- Bonding (3.1.3).

Halogenoalkanes:

ASChemistry

- Nomenclature of organic compounds (3.3.1).

- Principles of curly arrow mechanisms (3.3.1).

CÆ 1 365.6 509.48 Tm 0 g 0 G [(i)5(s)-8(omeri)3(s)-8(m (3)162(:)3re).



and equipment.

- Independent thinking.
- Use and application of scientific methods and practice.
- Numeracy and application of mathematical concepts.
- Handling Data
- Algebra
- •



	Plus many more.	Plus many more.	Plus many more.					
	Chemistry also leads into many sectors that	Chemistry also leads into many sectors that	Chemistry also leads into many sectors that					
	offer apprenticeships.	offer apprenticeships.	offer apprenticeships.					
End points	By the end of year 12, students will acquire foundational knowledge of Paper 1 and 2. In Year 12, these include the following specification							
	points: Physical Chemistry - 3.1.1 to 3.1.7, Inorganic Chemistry 3.2.1-3.2.3 and Organic Chemistry 3.3.1-3.3.6. Additionally, emphasis is							
	placed on introducing and mastering the extensive use of subject terminology unfamiliar to the GCSE specification. Students will develop the							
	skills involved in the first 6 required	in Year 12. This will include a full laboratory wr	ite up for in each line with the CPAC					
	assessments for each practical. Year 12 stude	nts will develop the skill of applying their knowl	edge to exam questions.					

Year 13 Curriculum intent 2022-23									
	Autumn Term		Spring Term		Summer Term				
	1	2	1	2	1	2			
Key Concepts	Physical Chemistry	Physical Chemistry	Inorganic	Physical Chemistry (Paper 1,	Revision Papers 1, 2	Revision Papers 1, 2			
	(Paper 1, 2 & 3)	(Paper 1, 2 & 3)	Chemistry (Paper	2&3)	and 3	and 3			
	Thermodynamics	Kp The further study	1 & 3)	Electrochemical Cells -					
	The further study of	of equilibria considers	Transition Metals	Redox reactions take place in					
	thermodynamics builds	how the mathematical	The 3d block	electrochemical cells where					
	on the Energetics	expression for the	contains 10	electrons are transferred					
	section and is	equilibrium constant K	elements, all of	from the reducing agent to					
	important in	p enables us to	which are metals.	the oxidising agent indirectly					
	understanding the	calculate how an	Unlike the metals	via an external circuit. A					
	stability of compounds	equilibrium yield will	in Groups 1 and 2,	potential difference is					
	and why chemical	be influenced by the	the transition	created that can drive an					
	reactions occur.	partial pressures of	metals Ti to Cu	electric current to do work.					
	Enthalpy change is	reactants and	form coloured	Electrochemical cells have					
	linked with entropy	products. This has	compounds and	very important commercial					
	change enabling the	important	compounds where	applications as a portable					
	free-energy change to	consequences for	the transition	supply of electricity to power					
	be calculated.	many industrial	metal exists in	electronic devices such as					
	Rate Equations -	processes.	different oxidation	mobile phones, tablets and					
	In rate equations, the	Acids & Bases Acids	states. Some of	laptops. On a larger scale,					
	mathematical	and bases are	these metals are	they can provide energy to					
	relationship between	important in domestic,	familiar as	power a vehicle					
	rate of reaction and	environmental and	catalysts. The						





- 3.1.6 Chemical equilibria, Le Ch and $K_{\rm c}$ Acids & bases

ASChemistry

- 3.1.6 Chemical equilibria, Le Ch and $K_{\rm c}$ Period 3 Oxides

ASChemistry

- 3.1.3 Bonding.

- 3.2.1 Periodicity.

Aromatics -

ASChemistry

- 3.3.1.1 Nomenclature.

- 3.3.1.2 Reaction mechanisms.

Amino Acids, Proteins and DNA

ASChemistry

- 3.1.3.7 Forces between molecules.

- 3.3.1.1 Nomenclature.

A-level **263**334417 Tm (0) (0) (3) (1) (0) -22(1) 7() TET (0) 88 8 2



- Use and application of scientific methods and practice.
- Numeracy and application of mathematical concepts.
- Handling Data
- Algebra
- •



End points By the end of year 13, pupils will have acquired a high level of understanding of all aspects of the specification in preparation for the A Level examinations. Pupils will have mastered t