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(1W*hB

- Moles (although this is revisited here).
- 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:

AS Chemistry

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

Halogenoalkanes:

AS Chemistry

- Nomenclature of organic compounds (3.3.1).
- Principles of curly arrow mechanisms (3.3.1).

- *E Z* isomerism (3.3.1).
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and equipment.
Independent thinking.
Use and application of scientific methods and practice.
Numeracy and application of mathematical concepts.
Handling Data
Algebra

	Plus many more. Chemistry also leads into many sectors that offer apprenticeships.	Plus many more. Chemistry also leads into many sectors that offer apprenticeships.	Plus many more. Chemistry also leads into many sectors that 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 write up for in each line with the CPAC assessments for each practical. Year 12 students will develop the skill of applying their knowledge 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 (Paper 1, 2 & 3)** **Thermodynamics** The further study of thermodynamics builds on the Energetics section and is important in understanding the stability of compounds and why chemical reactions occur. Enthalpy change is linked with entropy change enabling the free-energy change to be calculated. **Rate Equations -** In rate equations, the mathematical relationship between rate of reaction and	**Physical Chemistry (Paper 1, 2 & 3)** **Kp** The further study of equilibria considers how the mathematical expression for the equilibrium constant K p enables us to calculate how an equilibrium yield will be influenced by the partial pressures of reactants and products. This has important consequences for many industrial processes. **Acids & Bases** Acids and bases are important in domestic, environmental and	**Inorganic Chemistry (Paper 1 & 3)** **Transition Metals** The 3d block contains 10 elements, all of which are metals. Unlike the metals in Groups 1 and 2, the transition metals Ti to Cu form coloured compounds and compounds where the transition metal exists in different oxidation states. Some of these metals are familiar as catalysts. The	**Physical Chemistry (Paper 1, 2 & 3)** **Electrochemical Cells -** Redox reactions take place in electrochemical cells where electrons are transferred from the reducing agent to the oxidising agent indirectly via an external circuit. A potential difference is created that can drive an electric current to do work. Electrochemical cells have very important commercial applications as a portable supply of electricity to power electronic devices such as mobile phones, tablets and laptops. On a larger scale, they can provide energy to power a vehicle	Revision Papers 1, 2 and 3	Revision Papers 1, 2 and 3

- 3.1.6   Chemical equilibria, Le Ch
and K_c

Acids & bases
AS Chemistry
- 3.1.6   Chemical equilibria, Le Ch
and K_c

Period 3 Oxides
AS Chemistry
- 3.1.3   Bonding.
- 3.2.1   Periodicity.

Aromatics -
AS Chemistry
- 3.3.1.1   Nomenclature.
- 3.3.1.2   Reaction mechanisms.

Amino Acids, Proteins and DNA
AS Chemistry
- 3.1.3.7   Forces between molecules.
- 3.3.1.1   Nomenclature.

A-level

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