

Subject: KS5 Year 12 Chemistry (Teacher 1)		Year Group: 12
<p>Term 1 Key Focus/Topic(s) Foundations in chemistry - atomic Structure and the Periodic Table, and redox</p> <ul style="list-style-type: none"> • Structure of atoms and the periodic table. • Mass spectroscopy and the formation of ions. • Electron Orbitals. • Electron Configuration and periodicity. • Redox Reactions (Oxidation and reduction, oxidising and reducing agents) 	<p>Term 2 Key Focus/Topic(s) Foundations in chemistry - equations</p> <ul style="list-style-type: none"> • Equations and calculations • Errors and uncertainties • Yield and atom economy 	<p>Term 3 Key Focus/Topic(s) Inorganic chemistry – groups in the periodic table and reaction kinetics</p> <ul style="list-style-type: none"> • Group 1 and group 2 • Chemistry of group 7 • Rates of reaction
<p>Term 1 Assessment Opportunities:</p> <ul style="list-style-type: none"> • Classwork with a particular focus on the drawing and identification of atomic orbitals and a deep understanding of electron configuration and periodicity. • Initial assessment covering content from both sides of the course. 	<p>Term 2 Assessment Opportunities:</p> <ul style="list-style-type: none"> • Core practical 2: Preparation of a standard solution from a solid acid. • Core practical 3: Finding the concentration of a solution of hydrochloric acid. • Classwork with a particular focus on the different types of reaction and equations. 	<p>Term 3 Assessment Opportunities:</p> <ul style="list-style-type: none"> • Classwork with a particular focus on the chemistry of different groups in the periodic table, and factors that increase the rate of a reaction.
<p>Term 4 Key Focus/Topic(s) Inorganic chemistry – chemical energetics and equilibrium</p> <ul style="list-style-type: none"> • Introducing enthalpy • Standard enthalpy change of: reaction, formation, combustion and neutralisation. • Hess' Law. • Dynamic equilibrium • The equilibrium constant 	<p>Term 5 Key Focus/Topic(s) Inorganic chemistry – identifying unknowns</p> <ul style="list-style-type: none"> • Test used to identify unknown compounds • Consolidation of knowledge 	<p>Term 6 Key Focus/Topic(s) Inorganic chemistry – A2 content – further equilibrium</p> <ul style="list-style-type: none"> • K_c • K_p • Effect of temperature, pressure, concentration and catalysts on equilibrium constants.

<p>Term 4 Assessment Opportunities:</p> <ul style="list-style-type: none"> • Core practical 8: Determine the enthalpy change of a reaction using Hess' Law. • Classwork with a particular focus on calculating enthalpy change in different situations, and determining how different factors affect the position of equilibrium. 	<p>Term 5 Assessment Opportunities:</p> <ul style="list-style-type: none"> • Core practical 7: Identifying some organic and inorganic unknowns. • End of year exams. 	<p>Term 6 Assessment Opportunities:</p> <p>Classwork with a particular focus on calculation K_c and K_p.</p>
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Rationale:

All of the topics covered in Year 12 require higher levels of abstract thinking from students which will build upon and extend the knowledge learnt at GCSE. For example students have previously learnt about rates of reaction at GCSE, Year 12 then extend that knowledge further by introducing different types of catalyst and how they work.

In Year 12 Chemistry we place a particular focus on:

- Independent learning – Students are expected to read up on a subject ahead of time to ensure the student is thinking more critically in the lesson and by coming prepared with questions.
- Mathematical skills in Chemistry – applying different concepts and ideas to solve multi-step problems, using data to support their scientific conclusions.
- Practical Skills – Understanding the scientific method, processing and presenting data, forming conclusions

Evaluation:

- Assessment opportunities will involve teacher, self and peer assessment. The assessment will focus around work produced in lessons where the students are required to demonstrate their fundamental scientific knowledge and understanding as well as their mathematical skills within chemistry.
- Assessment of practical skills by performing the following Common Practical Assessment Criteria (CPAC) – 2, 3, 7, 8.
- Book scrutiny, lesson observations and collegial discussions will be used to quality assure teaching and learning. Gap analysis on mock papers.