

Year 10 Chemistry Curriculum Overview – Term 2

In Term 2, Year 10 Chemistry students will focus on the topics of **Bonding** and **Quantitative Chemistry**. These areas are fundamental to understanding the structure and behavior of matter and will be key components of their GCSE Chemistry exams.

Topic Overviews

Bonding

1. **Ionic Bonding:** Students will learn about ionic bonds, focusing on how atoms transfer electrons to form ions and the resulting properties of ionic compounds.
2. **Covalent Bonding:** The formation of covalent bonds through electron sharing between atoms, and how this leads to the formation of molecules. Students will explore the properties of molecular compounds.
3. **Metallic Bonding:** An introduction to metallic bonds and the properties of metals, such as conductivity and malleability.
4. **Bonding in Solids, Liquids, and Gases:** Understanding how different types of bonds affect the physical properties of substances, including melting and boiling points.

Triple Science Only:

- **Giant Covalent Structures:** Students will study giant covalent structures like diamond, graphite, and graphene, and explore their properties and uses.
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Quantitative Chemistry

1. **The Mole Concept:** Students will study the mole, Avogadro's constant, and how to calculate the number of particles in a substance.
2. **Concentration of Solutions:** Exploring how to calculate the concentration of a solution and the relationship between moles, volume, and concentration.
3. **Balancing Chemical Equations:** Students will learn how to balance chemical equations, ensuring the law of conservation of mass is upheld.
4. **Calculating Yield and Purity:** Introduction to calculating theoretical yield and understanding the significance of yield in chemical reactions. Students will also explore how to determine the purity of a product.

Triple Science Only:

- **Titrations:** In Triple Science, students will learn how to carry out titration experiments to determine the concentration of an unknown solution and analyze the results.

This term will focus on strengthening students' understanding of **Bonding** and **Quantitative Chemistry** through topic revision, exam practice, and practical experimentation. **Triple**

Science only content is highlighted, and the focus will be on reinforcing key concepts and refining exam skills in preparation for the GCSE exams.