Chemistry

YEAR 10

C3.1 The Periodic table

- This unit will focus on developing pupils' understanding of atomic structure, including the nuclear model.
- Pupils will learn about isotopes, relative atomic mass, and the structure of the periodic table, specifically exploring properties of different groups and their connection to electronic configurations.
- The unit will also cover the history of the periodic table and the contributions of Mendeleev. Overall, pupils will gain the ability to relate atomic structure to chemical properties of elements.

C4.1 Structure and Bonding

- This unit will build upon students' understanding of the states of matter and the particle model.
- Pupils will learn about different types of bonding, including covalent, ionic, and metallic bonding.
- The pupils will also explore nanoparticles, their properties, and their uses.

C3.2 Introduction to Quantitative Chemistry

- This unit will introduce pupils to quantitative chemistry, including the use of state symbols in equations.
- Pupils will learn to calculate relative atomic mass, formula mass, and mole quantities. They will also understand concentration and be able to calculate it based on mass and volume.
- The unit emphasises the importance of connecting quantitative chemistry with the nature of chemical reactions, allowing students to gain meaningful insights into reactants and products.

C4.2 Extraction of Metals

- This unit will focus on the understanding of the reactivity series, including reactions of metals with water and acids, displacement reactions, and metal extraction.
- Pupils will learn about the preparation of salts from various reactions.
- The unit will also cover the concepts of finite and renewable resources, and the importance of reusing and recycling.

C4.4 Energy Changes

- This unit will focus on energy transfers in chemical reactions, including exothermic and endothermic reactions.
- Pupils will learn to interpret experimental data and identify if a reaction is exothermic or endothermic.
- Pupils will develop a quantitative understanding by sketching and interpreting reaction profile diagrams, and calculate overall energy changes using bond energies.

YEAR 11

C4.3 Quantitative Chemistry

- This unit will focus on building upon pupils' understanding of atomic structure and introduce concepts of relative atomic mass and relative formula mass.
- Pupils will also apply their understanding of relative atomic mass to calculate the mole and concentration of solutions

C3.3 Using Resources

- This unit will explore human utilisation of Earth's resources, such as metals, materials, and water, emphasizing the significance of water as a resource.
- Pupils will learn to utilise life cycle assessments to evaluate the environmental impact of materials or products and consider the pros and cons of different waste disposal methods.

Revision of Chemistry – PPE's used to identify priority areas.

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