# CHEMISTRY KS4 CURRICULUM ROADMAP

1

**Atomic structure and the periodic table**
Students will learn about atoms, elements, and compounds, discovering how atomic structure relates to position in the periodic table and chemical properties.

**Combined** **Triple**

2

**Bonding, Structure, and the Properties of Matter**
Students will investigate how different types of chemical bonding affect the structure and properties of materials, including metals, ionic compounds, and polymers.

**Combined** **Triple**

**Energy Changes**
Students will explore exothermic and endothermic reactions, measuring temperature changes and understanding the role of bond energies in chemical reactions.

**Combined** **Triple**

3

**Quantitative Chemistry**
Students will develop skills in calculating chemical quantities, including conservation of mass, moles, and reacting masses in chemical equations..

**Combined** **Triple**

4

**Chemical Changes**
Students will study the reactivity of metals and acids, exploring reactions such as displacement, neutralisation, and electrolysis.

**Combined** **Triple**

5

**The Rate and Extent of Chemical Change**
Students will examine factors that affect the rate of chemical reactions and learn how reversible reactions reach equilibrium

**Combined** **Triple**

6

**Chemical Analysis**
Students will investigate the composition of substances using techniques like chromatography, tests for gases, and identifying ions in compounds.

**Combined** **Triple**

7

**Organic Chemistry**
Students will explore the chemistry of carbon compounds, focusing on hydrocarbons, crude oil, and the reactions of functional groups like alkenes and alcohols..

**Combined** **Triple**

8

**Using Resources**
Students will evaluate how Earth's resources are used sustainably, looking at water treatment, recycling, and the environmental impact of chemical production.

**Combined** **Triple**

9