LEARNING JOURNEY

Organic

Chemistry

Year 12 Spring Term

Halogenoalkanes; Alkenes; Alcohols

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 are named using the International Union of Pure and Applied Chemistry (IUPAC) system and the structure or formula of molecules can be represented in various different ways. Organic mechanisms are studied, which enable reactions to be explained.

Halogenoalkanes

- 3.3.3.1 Nucleophilic substitution
- 3.3.1.2 Elimination
- 3.3.1.3 Ozone depletion
- End of Unit assessment

Halogenoalkanes are much more reactive than alkanes. They have many uses, including as refrigerants, as solvents and in pharmaceuticals. The use of some halogenoalkanes has been restricted due to the effect of chlorofluorocarbons (CFCs) on the atmosphere.

Alkenes

- 3.3.4.1 Structure, bonding and reactivity
- 3.3.4.2 Addition reactions of alkenes
- 3.3.4.3 Addition polymers
- End of Unit assessment

In alkenes, the high-electron density of the carbon–carbon double bond leads to attack on these molecules by electrophiles. This section also n alkenes, the high electron density of the carbon–carbon double bond leads to attack on these molecules by electrophiles. This section also covers the mechanism of addition to the double bond and introduces addition polymers, which are commercially important and have many uses in modern society.

Alcohols

- 3.3.5.1 Alcohol production
- 3.3.5.2 Oxidation of alcohols
- **Required Practical RQP 5 -** Distillation of a product from a reaction
- 3.3.5.3 Elimination
- End of Unit assessment

Alcohols have many scientific, medicinal and industrial uses. Ethanol is one such alcohol and it is produced using different methods, which are considered in this section. Ethanol can be used as a biofuel.

TUDOR HABITS

You will work on the new processes learnt and self-regulation to develop an understanding of the different ways compounds can be drawn and how isomerism can be used to represent substances with the same general formula.

VOCABULARY:

Substitution, Elimination, Free radicals, Depletion, CFC's, Electron density, Polymers, Plasticisers, Fermentation, Oxidation.