

# Programme of Study



Subject: Biology (AQA Exam board)

Year: 12

## Autumn 1

- Biological molecules – Carbohydrates, Proteins, Lipids
- Enzyme action and Inhibition
- Nucleic Acids
- Energy and ATP
- Water and its Functions
- Microscopic measurements and calculations
- Eukaryotic cell structure
- Prokaryotic cells and Viruses

## Autumn 2

- Mitosis and Cell cycle
- Structure of the cell surface membrane
- Diffusion, Osmosis and active transport
- Co-transport and absorption of glucose in the ileum
- Defense mechanisms
- Phagocytosis, T Lymphocytes and B lymphocytes
- Antibodies, Vaccination and Human immunodeficiency virus

## Spring 1

- Gas exchange in single celled organisms, insects and fishes
- Anatomy and Physiology of human exchange system
- Enzymes, digestion and absorption of products of digestion
- Haemoglobin and transport by haemoglobin.
- Structure of heart
- The cardiac cycle
- Blood vessels and their functions

## Spring 2

- Transport of water in the xylem
- Transport of organic molecules in the phloem
- Investigating transport in plants
- Genes and the triplet code
- DNA and Chromosomes
- The structure of RNA
- Protein Synthesis

## Summer 1

- **Mutations**
- **Meiosis and genetic variation**
- **Genetic diversity and adaptation**
- **Types of selection**
- **Species and taxonomy**
- **Diversity within a community**

## Summer 2

- **Species diversity and human activity**
- **Investigating diversity**
- **Quantitative investigations of variation**
- **Revision**