Exam Paper Content Overview – Y10 Mid-Year Assessment

Outlined below are the list of topics that could come up in your Y10 mid-year assessment, so you know where to focus your revision for each.

Y10 Content	**1. Human Biology** • Aerobic respiration • Anaerobic respiration • Lungs and Ventilation • Gas Exchange • Fermentation • The Heart • Blood vessels and Blood flow • Blood composition • Coronary Heart Disease • Non communicable disease • The digestive system • Enzymes • Optimal conditions for enzymes • Testing for food groups (R.Practical) • pH and Enzymes 1 (R.Practical) • pH and Enzymes 2 (R.Practical) • Rates of reaction in the body • Diffusion • Diffusion and Surface area **2. Plant Biology** • Food webs • Ecosystems • Predator and Prey • Ecological Sampling techniques including quadrats (R.Practical) • Plant cells, tissues and organs • Osmosis • Osmosis (R.Practical) • Active transport • Transpiration • Translocation • Photosynthesis & Limiting Factors • Photosynthesis (R.Practical) • Using glucose and nitrogen in plants
Y9 Content	**1. Atomic structure and the periodic table** • Atoms • Elements • Isotopes • Compounds • Chemical Equations • Mixtures • Paper Chromatography • Separating Techniques • The History of the Atom • Electronic Structure • Development of the Periodic Table

- The Modern Periodic Table
- Metals and Non-metals
- Group 1 - The Alkali Metals
- Group 7 - The Halogens
- Group 0 - The Noble Gases

2. Bonding, structure, and the properties of matter

- Ions and Ionic Bonding
- Ionic Compounds
- Covalent Bonding
- Simple Molecular Substances
- Larger Covalent Substances
- Allotropes of Carbon
- Metallic Bonding
- States of Matter
- Changing State

3. Quantitative chemistry

- Relative Formula Mass
- Conservation of Mass

4. Chemical changes

- Acids and Alkalis
- Strong Acids and Weak Acids
- Reactions of Acids
- Reactivity of Metals
- Metal Oxides and Redox
- Redox Reactions
- Electrolysis

5. Cell Biology

- Cell structure
- Microscopy
- Cell differentiation and Specialisation
- Chromosomes
- Mitosis
- Stem Cells
- Diffusion
- Osmosis
- Active Transport
- Exchange surfaces
- Exchanging substances

6. Infection and Response

- Communicable Disease
- Viral Diseases
- Fungal and Protist Diseases
- Bacterial Diseases and
- Preventing Disease
- Fighting Disease
- Fighting Disease – Vaccination and Drugs
- Developing Drugs

7. Energy

	• Energy Stores and Transfers • Kinetic and Potential Energy Stores • Specific Heat Capacity • Power • Conduction and Convection • Reducing Unwanted Energy Transfers • Efficiency • Energy Resources and Their Uses • Wind, Solar and Geothermal • Hydroelectricity. Waves and Tidies • Biofuels and Non-renewables • Trends in Energy Resource Use **8. Forces** • Scalar and vector quantities • Types of forces • Weight • Resultant forces • Speed and velocity • Distance time graphs • Acceleration and deceleration • Velocity time graphs • Terminal Velocity • Newton's first law • Newton's second law • Investigate Newton's Second Law of motion (R. Practical) • Newton's third law • Stopping distances • Factors that affect thinking distance • RP - Relationship between force and extension (R. Practical)