#### Year 11,

You will be taking:

- 3 Combined Science exams each 1 hour 15 minutes long.
  - Biology, Chemistry and Physics.
  - o 70 marks per paper.
- Ensure you have a black pen, pencil, ruler, scientific calculator.

Details regarding the papers are below:

### Biology Paper 1

#### What's assessed

Biology topics 1-4: Cell Biology; Organisation; Infection and response; and Bioenergetics.

### How it's assessed

- · Written exam: 1 hour 15 minutes
- · Foundation and Higher Tier
- 70 marks
- 16.7% of GCSE

#### Questions

Multiple choice, structured, closed short answer, and open response.

### Chemistry Paper 1



#### What's assessed

Chemistry topics 8–12: Atomic structure and the periodic table; Bonding, structure, and the properties of matter; Quantitative chemistry; Chemical changes; and Energy changes.

### How it's assessed

- · Written exam: 1 hour 15 minutes
- · Foundation and Higher Tier
- 70 marks
- 16.7% of GCSE

#### Questions

Multiple choice, structured, closed short answer, and open response.

## Physics Paper 1

### What's assessed

Physics topics 18–21: Energy; Electricity; Particle model of matter; and Atomic structure.

### How it's assessed

- · Written exam: 1 hour 15 minutes
- · Foundation and Higher Tier
- 70 marks
- 16.7% of GCSE

#### Questions

Multiple choice, structured, closed short answer, and open response.

# The PPE topics are below:

Topi	c B	I —	Cell	Bio!	loav

Cells1	
Microscopy12	2
More on Microscopy1	3
Cell Differentiation and Specialisation14	4
Chromosomes and Mitosis19	
Stem Cells16	б
Diffusion	7
Osmosis18	8
Active Transport19	9
Exchange Surfaces20	
Exchanging Substances2	1
More on Exchanging Substances22	2
Revision Questions for Topic B12	3

# Topic B2 — Organisation

Cell Organisation	
Enzymes	25
Investigating Enzymatic Reactions	26
Enzymes and Digestion	27
More on Enzymes and Digestion	28
Food Tests	29
The Lungs	30
Circulatory System — The Heart	31
Circulatory System — Blood Vessels	
Circulatory System — Blood	
Cardiovascular Disease	34
More on Cardiovascular Disease	35
Health and Disease	36
Risk Factors for Non-Communicable Diseases	37
Cancer	
Plant Cell Organisation	
Transpiration and Translocation	40
Transpiration and Stomata	

## Topic B3 — Infection and Response

Communicable Disease	43
Viral, Fungal and Protist Diseases4	44
Bacterial Diseases and Preventing Disease	45
Fighting Disease	16
Fighting Disease — Vaccination	47
Fighting Disease — Drugs	48
Developing Drugs	49

## Topic B4 — Bioenergetics

Photosynthesis and Limiting Factors	50
The Rate of Photosynthesis	.51
Respiration and Metabolism	54
Aerobic and Anaerobic Respiration	55
Exercise	56

# Topic C1 - Atomic Structure and the Periodic Table \_\_\_\_96 ......97 Elements..... Chemical Equations.......99 Mixtures and Chromatography......100 More Separation Techniques......101 Distillation......102 The History of the Atom......103 Electronic Structure......104 Development of the Periodic Table......105 The Modern Periodic Table......106 Metals and Non-Metals......107 Group 1 Elements......108 Group 7 Elements......109 Group O Elements......110 Revision Questions for Topic C1......111 Topic C2 — Bonding, Structure and Properties of Matter Formation of Ions..... Ionic Bonding......113 Ionic Compounds......114 Covalent Bonding......115 Simple Molecular Substances......116 Polymers and Giant Covalent Structures......117 Allotropes of Carbon\_\_\_\_\_\_118 Metallic Bonding......119 Changing State......121 Revision Questions for Topic C2......122 Topic C3 — Quantitative Chemistry Relative Formula Mass......123 The Mole......124 Conservation of Mass......125 The Mole and Equations......126 Limiting Reactants......127 Concentrations of Solutions......128 Topic C4 — Chemical Changes Acids and Bases......129 Strong Acids and Weak Acids......130 Reactions of Acids......131 The Reactivity Series......132 Separating Metals from Metal Oxides......133

### Topic C5 — Energy Changes

Exothermic and Endothermic Reactions138
More Exothermic and Endothermic Reactions139
Bond Energies140
Revision Questions for Topic C514

Topic Pl — Energy	
Energy Stores and Systems	167
Kinetic and Potential Energy Stores	
Specific Heat Capacity	
Conservation of Energy and Power	170
Reducing Unwanted Energy Transfers	171
Efficiency	172
Energy Resources and Their Uses	173
Wind, Solar and Geothermal	174
Hydro-electricity, Waves and Tides	175
Bio-fuels and Non-renewables	176
Trends in Energy Resource Use	177
Revision Questions for Topic P1	178
Topic P2 — Electricity	
Current and Circuit Symbols	179
Resistance and V = IR	180
Resistance and I-V Characteristics	181
Circuit Devices	182
Series Circuits	183
Parallel Circuits	184
Investigating Resistance	
Electricity in the Home	
Power of Electrical Appliances	
More on Power	
The National Grid	
Revision Questions for Topic P2	190
Topic P3 — Particle Model	of Matter
The Particle Model and Motion in Gases	191
Density of Materials	192
Internal Energy and Changes of State	193
Specific Latent Heat	
Topic P4 — Atomic Structur	
Developing the Model of the Atom	195
Isotopes and Nuclear Radiation	196
Nuclear Equations	197
Half-life	198
Irradiation and Contamination	199
Revision Questions for Tonics P3 & P4	200