INTENT-

- To develop knowledge and understanding of key scientific principles within Biology.
- Students to apply this knowledge and explain key ideas within Biology, applying them to a range of typical and frequent assessment points.
- Students will be able to analyse scientific data and will be able to evaluate scientific discoveries in order to approach enquiry questions based on the topics studied.

The bigger picture:
The year 12 curriculum revisits many ideas from GCSE, grouping them in a similar fashion to how they are typically presented in exams (also reflected in the assessments) – this also includes application of knowledge from the 6 required practical's that they carry out.

Bilton School Planning for Progress over Time
Programme of Study

IMPLEMENTATION

	Term 1								Term 2								Term 3								Term 4								Term 5								Term 6							
KS5	01/09/2025	08/09/2025	15/09/2025	22/09/2025	29/09/2025	06/10/2025	13/10/2025	20/10/2025	**HOLIDAY: 1**	03/11/2025	10/11/2025	17/11/2025	24/11/2025	01/12/2025	08/12/2025	15/12/2025	**HOLIDAY: 2 WEEKS**	05/01/2026	12/01/2026	19/01/2026	26/01/2026	02/02/2026	9/02/2026	**HOLIDAY: 1 WEEK**	23/02/2026	02/03/2026	9/03/2026	16/03/2026	23/03/2026	**HOLIDAY: 2 WEEKS**	13/04/2026	20/04/2026	27/04/2026	04/05/2026	11/05/2026	18/05/2026	**HOLIDAY: 1 WEEK**	01/06/2026	08/06/2026	15/06/2026	22/06/2026	29/06/2026	06/07/2029	13/07/2026
Year 12 Biology THU (2hr/wk) LXR (2hr/wk) ZCM (1hr/wk)	(TTD x2) Head Start Revision	Head Start Revision & Assessment	2.A.1 Eukaryotic Cells and organelles, 2.A.2 Prokaryotic cells and Viruses, 1.B.1 DNA and RNA,.1.A.1 Moleculesof life and 1.A.2 Sugars,	2.A.3 Analysis of cell components 2.A.4 Cell division – mitosis 1.B.2 Transcription 1.A.3 Polysaccharides, 1.A.4 Lipids	2.A.5 Investigating mitosis, Cancer lesson missed due to trip 1.a.5 Proteins, 1.A2.5 Food tests	2.A..5.RQP (prep) 2.A..5 RQP 2 1.B.2 Translation1.A.6 Enzymes, 1.A.7 Factors Affecting Enzyme Activity	RQP2 Write up, Topic 2.A ETT, 1.B.3 ATP 1.A.8 Enzymes RQP prep 1.A.8 Enzymes RQP 1	Topic 2A Reteach 2.B.1 Cell membranes 1.B.4 Water RQP 1 write up Topic 1A ETT		2.B.2 Diffusion 2.B.3 Osmosis, 1.B.5 Inorganic ions Topic 1A Reteach 3.A.1 Size and surface area	RQP3, RQP 3 Write up . 8 ETT3.A.2 Gas exchange 3.A.3. Gas exchange in humans,	2.B.4 Active Transport , RQP4 4.C.1 Classification of organisms, 3.A.4 Lung diseases 3. A.5 Interpreting lung disease data	RQP 4 Write up. 2.C.1 Antigens 4.C.2 Courtship behaviour RQP5, RQP 5 Write up	2.C.2 The immune response,2.C.3 Immunity and vaccines 2 4.C.3 Classification using DNA or proteins 3.B.1 Digestion and Absorption3.B.2 The Circulatory System	2.C.4 Antigenic variation 2.C.5 Antibodies in medicine 4.C.4 Using gene technologies 3.B.2 Haemoglobin3.B.3 The circulatory system	2.C.6 Interpreting data about vaccines and antibodies 2.C.7 HIV and viruses 4.C.5 Investigating variation 3.B.4 The , Heart3.B.5 cardiovascular disease		RQP6,RQP 6 Write up 4.C.6 Biodiversity 3.B.6 Xylem3.B.7 Phloem	2B and 2C ETT Topic 2B and 2C reteach 4.C.7 Agriculture and Biodiversity Topic 3A and 3B ETT, Topic 3A and 3B reteach	4.B.1 Meiosis and genetic variation 4.B.2 Mutations Topic Topic4B ETT4.A.1 DNA, 4.A.2 Genes and chromosomes	4.B.3 Genetic diversity 4.B.4 Natural Selection Topic 4C Reteach 4.A.3 RNA and protein synthesis	4.B.5 The effects of selection 4.b.6 Investigating selection 4.A.4 Transcription and Translation recap 4.A.5 The genetic code and nucleic acids	PPEs – Revision		PPEs	PPEs	PPE feedback	Topic 2A Revision, Topic 1B Revision, Topic 1A Revision	Topic 2B Revision, Topic 1B Revision, Topic 3A Revision		Topic 2C Revision, Topic 4C revision, Topic 3B Revision	Topic 4B Revision, Topic 4C Revision, Topic 4A revision	Required practical focus	Required practical focus	**Further Yr13 Content or Catch up**	**Further Yr13 Content or Catch up**		AS Revision Paper 1	AS Revision Paper 1	AS Revision Paper 2	AS Revision Paper 2	EOY Assessment – AS Paper 1 and Paper 2	Work Experience – No lessons	Yr13 – Content/ RQP
Progress and assessment	End of topic test (ETT) Retrieval starters to test previous knowledge through the Unit. FAR completed approximately every 6 lessons.								End of topic test (ETT) Retrieval starters to test previous knowledge through the Unit. FAR completed approximately every 6 lessons.								End of topic test (ETT) Retrieval starters to test previous knowledge through the Unit. FAR completed approximately every 6 lessons.							End of topic test (ETT) Retrieval starters to test previous knowledge through the Unit. FAR completed approximately every 6 lessons.							End of topic test (ETT) Retrieval starters to test previous knowledge through the Unit. FAR completed approximately every 6 lessons.							End of topic test (ETT) Retrieval starters to test previous knowledge through the Unit. FAR completed approximately every 6 lessons.						
Required Practical (RP)	2 – Investigating mitosis 1 – Factors affecting enzyme controlled reaction rates								3 – Investigation osmosis 4 – Membrane permeability 5- Dissection								6 – Antibiotics and antibacterial agents								Revision of all RQP								Revision of all RQP														
Numeracy Skills	• Interpreting and analysing data in exam questions. • Analysing data from practicals.								• Interpreting and analysing data in exam questions. • Analysing data from practicals.								• Interpreting and analysing data in exam questions. • Analysing data from practicals.								• Interpreting and analysing data in exam questions. • Analysing data from practicals.								• Interpreting and analysing data in exam questions. • Analysing data from practicals.								• Interpreting and analysing data in exam questions. • Analysing data from practicals.						
Homework *(ensure that this is NOT stand alone, but clearly advances or embeds knowledge and understanding)*	Use of Seneca								Use of Seneca								Use of Seneca								Use of Seneca								Use of Seneca								Use of Seneca						

Key Vocabulary/literacy opportunities	Atomic Structure Acceleration, Atom, Atomic nucleus, Atomic number, Electron, Electron configuration, Electron impact ionisation, Electrospray ionisation, First ionisation energy, Ion detection, Ion drift, Ionisation, Isotope, Mass number, Mass spectrometer, Mass spectrometry, Neutron, Nuclear charge, Proton, Second ionisation energy, Sub-shells (orbitals, Time of Flight (TOF) spectrometer, Amount of Substance Atom economy, Avogadro's constant, Concentration, Empirical formula, Limiting reactant, Mole, Molecular formula, Percentage by mass, Percentage yield, Relative atomic mass, Relative molecular mass, Bonding Co-ordinate bond, Covalent bond, Dipole, Electron pair repulsion, Electronegativity, Electrostatic forces, Hydrogen bonding, Intermolecular forces, Ionic bond, Ionic compound, Lattice, Macromolecular crystal structure, Metallic bond, Permanent dipole-dipole forces, Polar bond, Simple molecular crystal structure, Van der Waals, VSEPR theory, Periodicity Atomic radius trend, Element classification, Ionisation energy trend, Periodicity, Proton number, Group 2 and Group 7	Energetics Calorimetry, Endothermic reaction, Enthalpy change (ΔH), Exothermic reaction, Hess's law, Mean bond enthalpy, Molar enthalpy change, Standard enthalpy of combustion (Δ c H Θ), Standard enthalpy of formation (Δ f H Θ), Chemical Equilibria and REDOX Catalyst, Closed system, Dynamic equilibrium, Effect of changing concentration on equilibrium, Effect of changing pressure on equilibrium, Effect of changing temperature on equilibrium, Equilibrium constant (K C), Heterogeneous system, Homogeneous system, Le Chatelier's principle, Reversible reaction, Half equation, Oxidation, Oxidation state, Oxidising agent, Redox reaction, Reducing agent, Reduction, Intro to Organic Chemistry Chain isomers, Displayed formula, Empirical formula, E-Z isomerism, Free-radical, Functional group, Functional group isomers, General formula, Homologous series, Molecular formula, Position isomer, Skeletal formula, Stereoisomerism, Structural formula, Structural isomerism, Catalytic converter, Catalytic cracking, Combustion of alkanes, Cracking, Crude oil, Fractional distillation, Hydrocarbons, Saturated, Thermal cracking,	Alkenes Addition polymer, Addition polymerisation, Alkenes, Carbocation, Electrophile, Major/minor products, Monomer, Plasticiser, Polymer, Repeat unit, Unsaturated, Halogenoalkanes Chlorofluorocarbons, Electrophile, Elimination, Free radicals, Free radical substitution, Nucleophile, Nucleophilic substitution, Ozone, Ozone depletion, Polar bond, Alcohols Alcohols, Biofuel, Carbon-neutral fuel, Classification of alcohols, Distillation, Fermentation of glucose, Hydration of alkenes, Oxidation of alcohols, Organic Analysis Alcohol, Aldehyde, Alkene, Carboxylic Acid, Fingerprint Region, Functional Group, Infrared Spectroscopy, Mass spectrometer, Mass Spectrometry, Molecular Formula, Relative atomic mass, Relative molecular mass, Wavenumber,	Rate Equation and Kp Concentration-time graph, Order of reaction, Overall order of a reaction, Rate-concentration data, Rate constant, Rate determining step, Rate equation, Catalyst, Closed system, Dynamic equilibrium, Effect of changing concentration on equilibrium, Effect of changing pressure on equilibrium, Effect of changing temperature on equilibrium, Equilibrium constant (K C), Heterogeneous system, Homogeneous system, Le Chatelier's principle, Reversible reaction, Isomerism and Carbonyl Compounds Chiral Carbon, Displayed Formula, Enantiomers, Optical isomerism, Racemic Mixture (racemate), Structural Formula, Aldehyde, Carbonyl group, Curly Arrow, Enantiomers, Hydroxynitrile, Ketone, Nucleophile, Nucleophilic Addition,.	Carbonyl Compounds Acid Anhydride, Acyl Chloride, Biodiesel, Carboxylic Acids, Esters, Hydrolysis of esters, Melting Point Apparatus, Nucleophile, Nucleophilic addition-elimination, Primary Amide, Recrystallisation,	

	Barium meals, Extraction of titanium, Flue gases, Solubility, Sparingly soluble, Test for sulfates, Wet scrubbing, Displacement, Disproportionation, Electronegativity, Oxidising ability, Redox reaction, Reducing ability,			Oxidation of Aldehydes, Reduction of Aldehydes, Reduction of Ketones,		
Connected knowledge	KS3 – Atoms and Elements, Compounds and Mixtures, Particles KS4 – Atomic Structure and the Periodic Table, Structure, Bonding and the Properties of Matter, Quantitative Chemistry, Chemical Changes, KS5 – Bonding, Organic Chemistry, Energetics	KS3 – Atoms and Elements, Compounds and Mixtures, Particles KS4 – Atomic Structure and the Periodic Table, Structure, Bonding and the Properties of Matter, Chemical Changes, Organic Chemistry, Rate and the Extent of Chemical Change KS5 – Bonding, Organic Chemistry, Further Organic Chemistry, Organic Analysis,	KS3 – Atoms and Elements, Compounds and Mixtures, Particles KS4 – Atomic Structure and the Periodic Table, Structure, Bonding and the Properties of Matter, Chemical Changes, Organic Chemistry, Rate and the Extent of Chemical Change KS5 – Bonding, Organic Chemistry, Further Organic Chemistry, Organic Analysis,	KS3 – Atoms and Elements, Compounds and Mixtures, Particles KS4 – Atomic Structure and the Periodic Table, Structure, Bonding and the Properties of Matter, Chemical Changes, Organic Chemistry, Rate and the Extent of Chemical Change KS5 – Bonding, Organic Chemistry, Further Organic Chemistry, Organic Analysis,	KS3 – Atoms and Elements, Compounds and Mixtures, Particles KS4 – Atomic Structure and the Periodic Table, Structure, Bonding and the Properties of Matter, Chemical Changes, Organic Chemistry, Rate and the Extent of Chemical Change KS5 – Bonding, Organic Chemistry, Further Organic Chemistry, Organic Analysis,	
Spiritual, Moral, Social and cultural.						
British Values	Respect and tolerance, collaboration during experiments and group work. Following the laboratory rules when conducting practical work.	Respect and tolerance, collaboration during experiments and group work. Following the laboratory rules when conducting practical work.	Respect and tolerance, collaboration during experiments and group work. Following the laboratory rules when conducting practical work.	Respect and tolerance, collaboration during experiments and group work. Following the laboratory rules when conducting practical work.	Respect and tolerance, collaboration during experiments and group work. Following the laboratory rules when conducting practical work.	Respect and tolerance, collaboration during experiments and group work. Following the laboratory rules when conducting practical work.
Cultural Capital	Science - Careers display on W side corridor. Careers posters in all Science rooms	Science - Careers display on W side corridor. Careers posters in all Science rooms	Science - Careers display on W side corridor. Careers posters in all Science rooms	Science - Careers display on W side corridor. Careers posters in all Science rooms	Science - Careers display on W side corridor. Careers posters in all Science rooms	Science - Careers display on W side corridor. Careers posters in all Science rooms