

Holmer Green Senior School

Science

2025-26



Curriculum Intent

Work Hard, Be Kind, Have Passion

End Game:

- To develop students who are inquisitive about science and able to apply their scientific knowledge to everyday scenarios.
- To develop competent technical scientists with the relevant laboratory skills.
- To instill a sense of awe and wonder about the world

Challenge:

- Apply understanding to everyday scenarios
- Develop the BIG IDEAS of Science through spiral learning.

Skills Developed:

- HSW and Scientific numeracy
 - ANALYSE- analyse patterns, discuss limitations, draw conclusions, present data
 - COMMUNICATE- communicate ideas, construct explanations, critique claims, justify opinions
 - ENQUIRE- collect data, devise questions, plan variables, test hypotheses
 - SOLVE- estimate risks, examine consequences, review theories, interrogate sources
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- A decorative graphic at the bottom of the page consists of several overlapping, wavy bands in shades of blue and gold, creating a sense of movement and depth.

HGSS Curriculum Map

Year 7 Science



Exam Board: AQA		Careers: teacher, scientist, electrician.			Co-Curricular: STEAM club		Sequencing:	
	Autumn 1	Autumn 2	Spring 1	AP1	Spring 2	Summer 1	Summer 2	AP2
Content	Growth	Forces Reproduction	Atoms, elements and compounds. Space	Testing understanding of all topics covered in a written exam.	Space Interdependence	Mixtures Energy transfers	Electrical circuits -Current and potential difference	Testing understanding of all topics covered in a written exam. .
Skills:	Produce clear, labelled scientific drawings. Use models to represent data, events, processes, behaviours and other scientific phenomena. Measure volumes of liquids accurately Safe use of heating devices and techniques, including Bunsen burner, electric heater and water bath.	Make and record observations and measurements using a range of apparatus and methods. Construct and interpret frequency tables and results tables. Consider the best way to present data. Produce clear, labelled scientific drawings	Measurement of rates of reaction by a variety of methods including production of gas, uptake of water and colour change of indicator. Understand how scientific methods and theories develop over time.		Understand how scientific methods and theories develop over time. Describe representative sampling techniques. Apply representative sampling techniques to different scenarios and explain why it is appropriate. Interpret a line (scatter) graph	Identify hazard symbols. Describe sensible precautions to reduce risk. Identify names and uses of basic lab equipment and apparatus Define the terms precise, accurate and valid, and be able to use these terms in the context of data	Use of appropriate apparatus to measure current, potential difference (voltage) and resistance, and to explore the characteristics of a variety of circuit elements	

HGSS Curriculum Map

Year 8 Science



Exam Board: AQA		Careers: Teacher, scientist, space science			Co-Curricular: STEAM club			
	Autumn 1	Autumn 2	Spring 1	AP1	Spring 2	Summer 1	Summer 2	AP2
Content	Tissues and organs Atoms, elements and compounds	Movement and pressure Respiration and photosynthesis	Changing substances magnetism	Testing understanding of all topics covered in a written exam.	Life diversity space	Electrical circuits nutrition	Electrical circuits	Testing understanding of all topics covered in a written exam.
Skills:	Measurement of rates of reaction by a variety of methods including production of gas, uptake of water and colour change of indicator	Measure motion, including determination of speed and rate of change of speed (acceleration/deceleration) Observing and measuring biological changes and/or processes, including safe and ethical use of living organisms. Identify and assess risks to health related to lifestyle habits and the risk of disease.	Use of appropriate qualitative reagents and techniques to analyse and identify unknown samples or products including gas tests, flame tests, precipitation reactions, and the determination of concentrations of strong acids and strong alkalis		Obtain a clear image using a light microscope Understand how scientific methods and theories develop over time.	Use of appropriate apparatus to measure current, potential difference (voltage) and resistance, and to explore the characteristics of a variety of circuit elements Identify and assess risks to health related to lifestyle habits and the risk of disease.	Use of circuit diagrams to construct and check series and parallel circuits including a variety of common circuit elements	

HGSS Curriculum Map

Year 9 Science



Exam Board: AQA			Careers: health scientist, electrician, chemist		Co-Curricular: STEAM club			
	Autumn 1	Autumn 2	Spring 1	AP1	Spring 2	Summer 1	Summer 2	AP2
Content	Growth and differentiation Periodic table	Acceleration Human interaction	Quantitative Chemistry Heating	Testing understanding of all topics covered in a written exam	Genetics	Using resources Sound and waves	Sound and waves Home electricity	Testing understanding of all topics covered in a written exam
Skills:	Application of aseptic technique. Prepare a slide with cells for viewing under the light microscope. Measure pH.	Recognise the importance of scientific quantities and understand how they are determined. Describe and evaluate, with the help of data, methods that can be used to tackle problems caused by human impacts on the environment.	Describe a practical procedure for a specified purpose. Mathematical and statistical analysis		Recognise that scientific methods and theories change over time	Cite sources of information. Interpret the reliability of sources of information Making observations of waves in fluids and solids to identify the suitability of apparatus to measure speed, frequency and wavelength. Making observations of the effects of the interaction of electromagnetic waves with matter.	Making observations of waves in fluids and solids to identify the suitability of apparatus to measure speed, frequency and wavelength. Making observations of the effects of the interaction of electromagnetic waves with matter.	

HGSS Curriculum Map

Year 10 Triple Science



Exam Board: N/A		Careers: writer, copywriter, journalist, teacher, analyst.			Co-Curricular:			
	Autumn 1	Autumn 2	Spring 1	AP1	Spring 2	Summer 1	Summer 2	AP2
Content	<u>Chemistry</u> C6 Electrolysis <u>Biology</u> B7 Non communicable disease B8 Photosynthesis B9 Respiration	<u>Biology</u> B7 Non communicable disease B10 The human nervous system B11 Hormonal response <u>Chemistry</u> C7 Energy changes C8 Rates and equilibrium	<u>Biology</u> B11 Hormonal response B12 Homeostasis in action <u>Physics</u> P7 Radioactivity P8 Forces in balance	Testing understanding of all topics covered to date	<u>Physics</u> P10 Forces and motion P11 Pressure and surfaces	<u>Physics</u> P12 Waves properties P13 Electromagnetic waves <u>Biology</u> B12 Homeostasis in action B13 Reproduction	<u>Physics</u> P14 Light <u>Revision</u> Mock revision and mock sitting	Testing understanding of all topics covered to date
Skills:	Each topic provides opportunities to develop both maths and practical skills. In addition, pupils complete required practicals to show their developing competence in practical skills, Pupils will cover exam questions in all topics to further develop exam skills							

HGSS Curriculum Map

Year 11 Triple Science



Exam Board: N/A		Careers: writer, copywriter, journalist, teacher, analyst.			Co-Curricular:			
	Autumn 1	Autumn 2	Spring 1	AP1	Spring 2	Summer 1	Summer 2	AP2
Content	<u>Biology</u> B14 Variation B15 Genetics and evolution <u>Chemistry</u> C9 Crude oils and fuels C10 Organic reactions C11 Polymers	Mock revision <u>Biology</u> B16 Adaptations, interdependence and competition B17 Organising an ecosystem <u>Chemistry</u> C11 Polymers C13 The Earth's atmosphere	<u>Biology</u> B17 Organising an ecosystem B18 Biodiversity and ecosystems <u>Chemistry</u> C14 The Earth's resources C15 Using our resources <u>Revision</u>	Testing understanding of all topics covered to date	Revision	GCSE EXAMS	GCSE EXAMS	GCSE EXAMS
Skills:	Each topic provides opportunities to develop both maths and practical skills. In addition, pupils complete required practicals to show their developing competence. Pupils will complete exams questions to ensure their exam skills are further developed							

HGSS Curriculum Map

Year 12 Biology



Exam Board: AQA		Careers: Health care / medicine, Animal welfare, Conservation, Genetics, Research and lab work , teaching, sports science				Co-Curricular:		Sequencing:	
	Autumn 1	Baseline	Autumn 2	Spring 1	AP1	Spring 2	Summer 1	Summer 2	AP2
Content:	<p>Math and Practical</p> <ul style="list-style-type: none"> Apparatus and techniques Uncertainty, percentages and graphs <p>Cells</p> <ul style="list-style-type: none"> Prokaryotic Eukaryotic Methods of studying cells Cell cycle and mitosis <p>Biological molecule</p> <ul style="list-style-type: none"> Water Carbohydrates Lipids Proteins Nucleic acids 	<p>Math skills CPAC skills e.g. graphs</p> <p>GCSE recall</p>	<p>Cell Membranes</p> <ul style="list-style-type: none"> Membrane structure Transport across <p>Enzymes and Digestion</p> <ul style="list-style-type: none"> Structure / function Induced fit Inhibitors Industrial uses Human digestion 	<p>Immunity</p> <ul style="list-style-type: none"> Cell recognition Immune response HIV Monoclonal antibodies ELIZA <p>Gas Exchange</p> <ul style="list-style-type: none"> SA:Vol ratios Gas exchange in: <ul style="list-style-type: none"> Insects Fish Mammals structure, function adaptations 	<p>Knowledge and understanding of all topic to date. Includes RPs and CPAC skills</p>	<p>Protein Synthesis</p> <ul style="list-style-type: none"> DNA, genes and chromosomes Protein synthesis Mutation Meiosis <p>Mass Transport</p> <ul style="list-style-type: none"> Insects Fish Mammals <p>Genetic Diversity</p> <ul style="list-style-type: none"> Genetic diversity (variation) Adaptation and natural selection Evolution 	<p>Biodiversity</p> <ul style="list-style-type: none"> Taxonomy Species richness Simpsons index Measuring diversity <p>Mass Transport in Plants</p> <ul style="list-style-type: none"> Transpiration Translocation <p>AS Synoptic and revision</p>	<p>Energy and Ecosystems</p> <ul style="list-style-type: none"> Food webs GNP and NNP Data Analysis Farming Nutrient cycles fertilisers <p>Populations and ecosystems (ecology)</p> <ul style="list-style-type: none"> Ecosystems Habitats Abiotic / biotic Population size techniques MRR Statistical tests Conservation 	<p>EOY 12</p> <p>AS style exam: 2 x 1.5Hr</p> <p>Covers entire Y12 content. Includes RPs and CPAC skills</p>
Skills:	Each topic provides opportunities to develop both maths and practical skills. In addition, pupils complete and write up six required practicals to show their developing competence in practical skills.								
Independent Study	Pupils are expected to complete 5HRS of independent study. This includes homework and revision as well as self-study tasks: Complete text book reading and make notes prior to each topic; Complete text book questions and mark at the end of each topic; Library of support texts available in S9; A / A* consider subscription to review magazine (some copies available in S9); Zig Zag learning grids; Topic workbooks with answers available; ISAAC Biology online practice.								

HGSS Curriculum Map

Year 13 Biology



Exam Board: AQA		Careers: Health care / medicine, Animal welfare, Conservation, Genetics, Research and lab work , teaching, sports science				Co-Curricular:		Sequencing:	
	Autumn 1	Predictive Exam	Autumn 2	Spring 1	AP1	Spring 2	Summer 1	Summer 2	AP2
Content:	<p>Populations and ecosystems (ecology)</p> <ul style="list-style-type: none"> Ecosystems Habitats Abiotic / biotic Population size techniques MRR Statistical tests <p>Genetics</p> <ul style="list-style-type: none"> Mono/dihybrid Linkage and sex linkage Epistasis Chi squared test <p>Photosynthesis</p> <ul style="list-style-type: none"> ATP revision Structure Practical and ROR 	All content to date including RPs and CPAC skills	<p>Respiration</p> <ul style="list-style-type: none"> Chemiosmosis Glycolysis and Krebb's Aerobic vs anaerobic Measuring respiration <p>Respond to the environment</p> <ul style="list-style-type: none"> Survival and response Behavior Growth substances in plants <p>Photosynthesis</p> <ul style="list-style-type: none"> Biochemistry <p>Essay skills</p> <p>Math (2)</p> <ul style="list-style-type: none"> Statistics Key formulae 	<p>Nerves and muscles</p> <ul style="list-style-type: none"> Receptors Reflexes Transmission of impulses Synapses Control of HR Contraction of skeletal muscles <p>Control Gene Expression</p> <ul style="list-style-type: none"> Mutations alter proteins Totipotency Pluripotency Genetic redundancy Control of protein synthesis Epigenetics apoptosis Genomes 	Knowledge and understanding of all topic to date. Includes RPs and CPAC skills	<p>Homeostasis</p> <ul style="list-style-type: none"> Homeostasis Control of: <ul style="list-style-type: none"> Temperature Blood sugar Water and ions Disorders and their treatment Endocrine system Action of hormones <p>Gene technology</p> <ul style="list-style-type: none"> Recombinant In vivo In Vitro Gene therapy Uses of gene tech 	<p>Synoptic Exam Technique</p> <p>Revision and practice</p> <p>Timed essays</p>	<p>A Level Exams</p> <p>3x 2Hr papers</p> <p>Paper 1 Y1 content</p> <p>Paper 2 Year 2 content</p> <p>Paper 3 All content, CPAC skills and essay.</p>	
Skills:	Each topic provides opportunities to develop both maths and practical skills. In addition, pupils complete and write up six required practicals to show their developing competence in practical skills.								
Independent Study	Pupils are expected to complete 5HRS of independent study. This includes homework and revision as well as self-study tasks: Complete text book reading and make notes prior to each topic; Complete text book questions and mark at the end of each topic; Library of support texts available in S9; A / A* consider subscription to review magazine (some copies available in S9); Zig Zag learning grids; Topic workbooks with answers available; ISAAC Biology online practice.								

HGSS Curriculum Map

Year 12 Chemistry



Exam Board: AQA		Careers: Health care / medicine, Veterinary Sciences, Chemical engineering, Research and lab work , teaching				Co-Curricular:		Sequencing:	
	Autumn 1	Baseline	Autumn 2	Spring 1	AP1	Spring 2	Summer 1	Summer 2	AP2
Content:	<p>Essential maths and practical skills</p> <p>Atomic structure</p> <ul style="list-style-type: none"> • Fundamental particles • Configuration • Ionization energies • ToF Spectrometry <p>Amount of substance</p> <ul style="list-style-type: none"> • RAM and Moles • Formulae • Gas equation • Atom economy <p>Organic:</p> <ul style="list-style-type: none"> • Nomenclature • Isomerism <p>Alkanes</p> <ul style="list-style-type: none"> • Distillation • Cracking 	<p>Math skills CPAC skills e.g. graphs</p> <p>GCSE recall</p>	<p>Bonding and bond properties</p> <ul style="list-style-type: none"> • Types of bonding • Intermolecular forces • Shapes of molecules • Properties and bonding <p>Energetics</p> <ul style="list-style-type: none"> • Enthalpy change • Hess's Law • Thermochemical cycles • Bond enthalpy <p>Halogenoalkanes</p> <ul style="list-style-type: none"> • Formation of • Reactions of <p>Alkenes</p> <ul style="list-style-type: none"> • Reactions of • Polymerisation of 	<p>Kinetics</p> <ul style="list-style-type: none"> • Collision theory • MB distribution • Catalysts <p>Alcohols</p> <ul style="list-style-type: none"> • Ethanol production • Intro to • Reactions of <p>Analysis</p> <ul style="list-style-type: none"> • Test tube reactions • Mass spec • IR spec 	<p>Knowledge and understanding of all topic to date.</p> <p>Includes RPs and CPAC skills</p>	<p>Periodicity</p> <ul style="list-style-type: none"> • Periodic table • Period 3 <p>Group 2</p> <p>Patterns Uses</p> <p>Equilibria</p> <ul style="list-style-type: none"> • reversible reactions • Equilibrium constant • Equilibria in industry • Le Chatelier • Calculations 	<p>Redox</p> <ul style="list-style-type: none"> • Redox • Oxidation states <p>Equation</p> <p>Halogens</p> <ul style="list-style-type: none"> • Patterns • Uses • Chlorines <p>AS Synoptic Revision and practice</p> <p>Exam technique</p>	<p>Acids Bases and Buffers</p> <ul style="list-style-type: none"> • Definitions • pH scale • Weak acids and Alkalis • Titrations • Indicators • Buffers 	<p>EOY 12</p> <p>AS style exam: 2 x 1.5Hr</p> <p>Covers entire Y12 content. Includes RPs and CPAC skills</p>
Skills:	Each topic provides opportunities to develop both maths and practical skills. In addition, pupils complete and write up six required practicals to show their developing competence in practical skills.								
Independent Study	Pupils are expected to complete 5HRS of independent study. This includes homework and revision as well as self-study tasks: Complete text book reading and make notes prior to each topic; Complete text book questions and mark at the end of each topic; Library of support texts available in S9; A / A* consider subscription to review magazine (some copies available in S9); Zig Zag learning grids; Topic workbooks with answers available; ISAAC Chemistry online practice.								

HGSS Curriculum Map

Year 13 Chemistry



Exam Board: AQA		Careers: Health care / medicine, Veterinary Sciences, Chemical engineering, Research and lab work , teaching				Co-Curricular:		Sequencing:	
	Autumn 1	Predictive Exam	Autumn 2	Spring 1	AP1	Spring 2	Summer 1	Summer 2	AP2
Content:	Periodicity 2 <ul style="list-style-type: none"> • Period 3 • Oxides P3 Transition elements Complexes Buffers <ul style="list-style-type: none"> • Titrations • Buffers Kinetics 2 <ul style="list-style-type: none"> • Rate order • Arrhenius equation • Rate determination Nomenclature and isomerism <ul style="list-style-type: none"> • Carbonyl group • Synthesis optically active compounds 	All content to date including RPs and CPAC skills	Transition elements <ul style="list-style-type: none"> • Variable Oxidation • Ligands • Redox Inorganic solutions <ul style="list-style-type: none"> • Transition metal ions • Metal ions Carbonyl group <ul style="list-style-type: none"> • Aldehydes and ketones • Carboxylic acids and esters • Acylation Aromatics <ul style="list-style-type: none"> • Properties • Synthesis Amines	Thermodynamics 2 <ul style="list-style-type: none"> • Enthalpy change • Born-Haber • Reactions Equilibria 2 <ul style="list-style-type: none"> • Partial pressure • Kp Polymerisation Proteins and nucleic acids <ul style="list-style-type: none"> • Amino acids • Polypeptides • Proteins • Enzymes • DNA • Anti-cancer drugs Organic synthesis	Knowledge and understanding of all topic to date. Includes RPs and CPAC skills	Electrochemistry <ul style="list-style-type: none"> • Potentials • Cells Structure determination <ul style="list-style-type: none"> • NMR • Proton NMR • Spectral analysis Chromatography	Synoptic Exam Technique Revision and practice	A Level Exams 3 x 2Hr Papers: Paper 1 Physical and inorganic (inc. RPs) Paper 2 Physical and Organic (inc. RPs) Paper 3 All content, CPAC skills and multiple choice	
Skills:	Each topic provides opportunities to develop both maths and practical skills. In addition, pupils complete and write up six required practicals to show their developing competence in practical skills.								
Independent Study	Pupils are expected to complete 5HRS of independent study. This includes homework and revision as well as self- study tasks: Complete text book reading and make notes prior to each topic; Complete text book questions and mark at the end of each topic; Library of support texts available in S9; A / A* consider subscription to review magazine (some copies available in S9); Zig Zag learning grids; Topic workbooks with answers available; ISAAC Biology online practice.								

HGSS Curriculum Map

Year 12 Physics



Exam Board: AQA		Careers: Medicine, radiology, Medical physics, Engineering, Computing, Architecture Research and lab work, Astrophysics				Co-Curricular:		Sequencing:	
	Autumn 1	Baseline	Autumn 2	Spring 1	AP1	Spring 2	Summer 1	Summer 2	AP2
Content:	<p>Math and Practical Skills</p> <ul style="list-style-type: none"> Apparatus and techniques Uncertainty, standard form, SI units, trig Graphs <p>Matter</p> <ul style="list-style-type: none"> Atoms and isotopes nuclear decay photons particle interactions <p>Materials</p> <ul style="list-style-type: none"> density Young's modulus <p>Waves</p> <ul style="list-style-type: none"> wave properties Progressive waves 	<p>Math skills CPAC skills e.g. graphs</p> <p>GCSE recall</p>	<p>Particle</p> <ul style="list-style-type: none"> particle interactions Classification Conservation rules <p>Quantum</p> <ul style="list-style-type: none"> Photoelectric effect energy levels and spectra wave particle duality <p>Waves</p> <ul style="list-style-type: none"> Phase Superposition Standing waves <p>Refraction</p> <ul style="list-style-type: none"> refraction Critical angle TIR 	<p>Forces</p> <ul style="list-style-type: none"> Freebody diagrams moments equilibrium Statics <p>Diffraction</p> <ul style="list-style-type: none"> Interference Single slit Young's slits <p>Diffraction gratings</p>	<p>Knowledge and understanding of all topic to date. Includes RPs and CPAC skills</p>	<p>Linear motion</p> <ul style="list-style-type: none"> Velocity and linear accⁿ Freefall Projectiles <p>Circuits</p> <ul style="list-style-type: none"> Current and charge PD and power Resistance and resistivity Circuit components Circuit rules 	<p>Newton's laws</p> <ul style="list-style-type: none"> F=ma terminal velocity Vehicle safety <p>Momentum</p> <ul style="list-style-type: none"> Impulse Momentum Collisions and explosions <p>Energy</p> <ul style="list-style-type: none"> Work KE and PE Power efficiency <p>DC Circuits</p> <ul style="list-style-type: none"> EMF and internal resistance Potential divider 	<p>Circular motion</p> <ul style="list-style-type: none"> Uniform circular motion Centripetal force <p>Simple Harmonic Motion</p> <ul style="list-style-type: none"> Principles Sine Waves Applications Free and forced vibrations Resonance <p>Thermal Physics</p> <ul style="list-style-type: none"> Temperature and internal energy Specific and Latent heat 	<p>EOY 12</p> <p>AS style exam: 2 x 1.5Hr</p> <p>Covers entire Y12 content. Includes RPs and CPAC skills</p>
Skills:	Each topic provides opportunities to develop both maths and practical skills. In addition, pupils complete and write up six required practicals to show their developing competence in practical skills.								
Independent Study	Pupils are expected to complete 5HRS of independent study. This includes homework and revision as well as self-study tasks: Complete text book reading and make notes prior to each topic; Complete text book questions and mark at the end of each topic; Library of support texts available in S9; A / A* consider subscription to review magazine (some copies available in S9); Zig Zag learning grids; Topic workbooks with answers available; ISAAC Chemistry online practice.								

HGSS Curriculum Map

Year 13 Physics



Exam Board: AQA		Careers: Medicine, radiology, Medical physics, Engineering, Computing, Architecture Research and lab work, Astrophysics				Co-Curricular:		Sequencing:	
	Autumn 1	Predictive Exam	Autumn 2	Spring 1	AP1	Spring 2	Summer 1	Summer 2	AP2
Content:	<p>Practical Skill (2)</p> <ul style="list-style-type: none"> • Small angle rule • Inverse square law • linearising graphs <p>Harmonic Motion</p> <ul style="list-style-type: none"> • Forced vibrations • Resonance <p>Radioactivity</p> <ul style="list-style-type: none"> • History of atom • Radioactivity • Nuclear radius <p>Gas Laws</p> <ul style="list-style-type: none"> • Ideal gas law • Kinetic theory <p>Gravitation</p> <ul style="list-style-type: none"> • Field Strength • Potential 	All content to date including RPs and CPAC skills	<p>Electric fields</p> <ul style="list-style-type: none"> • Fields and field strength • Potential • Coulomb's law • Comparing fields <p>Nuclear</p> <ul style="list-style-type: none"> • Stability and decay • Energy and mass • Binding energy • Fission and fusion • Nuclear reactor 	<p>Astrophysics</p> <ul style="list-style-type: none"> • Lens • Telescopes • Astronomical Magnitudes <p>Capacitance</p> <ul style="list-style-type: none"> • Capacitance • Energy stored • Charging / discharging • Dielectrics <p>Magnetic fields</p> <ul style="list-style-type: none"> • Magnetic fields • Motor Effect • Charged particles in magnetic fields 	Knowledge and understanding of all topic to date. Includes RPs and CPAC skills	<p>Astrophysics</p> <ul style="list-style-type: none"> • Stellar classification • Stellar life cycles • Spectra • Cosmology <p>Magnetic fields</p> <ul style="list-style-type: none"> • EM induction • Generators • Transformers 	Synoptic Exam Technique Revision and practice	<p>A Level Exams</p> <p>3 x 2Hr Papers:</p> <p>Paper 1 Physical and inorganic (inc. RPs)</p> <p>Paper 2 Physical and Organic (inc. RPs)</p> <p>Paper 3 All content, CPAC skills and multiple choice</p>	
Skills:	Each topic provides opportunities to develop both maths and practical skills. In addition, pupils complete and write up six required practicals to show their developing competence in practical skills.								
Independent Study	Pupils are expected to complete 5HRS of independent study. This includes homework and revision as well as self-study tasks: Complete text book reading and make notes prior to each topic; Complete text book questions and mark at the end of each topic; Library of support texts available in S9; A / A* consider subscription to review magazine (some copies available in S9); Zig Zag learning grids; Topic workbooks with answers available; ISAAC Biology online practice.								

HGSS Curriculum Map

Year 12 BTEC Applied Science



Exam Board: Pearson		Careers: Health care, nursing, physiotherapy, sports science, research, lab work, environmental science and conservation				Co-Curricular:		Sequencing:	
	Autumn 1	Baseline	Autumn 2	Spring 1	AP1	Spring 2	Summer 1	Summer 2	AP2
Content:	<p>Unit1 Biology B1 – Cell structure and function B2 – Cell specialisation</p> <ul style="list-style-type: none"> •palisade mesophyll •sperm and egg cells •root hair cells in plants •blood cells <p>Unit 1 Chemistry A1 – Structure and Bonding</p> <ul style="list-style-type: none"> •Structure of atom •Electro config •bonding •Intermolecular forces •Equations, mass and moles •Amounts 	<p>Math skills CPAC skills e.g. graphs</p> <p>GCSE recall</p>	<p>Unit 1 Biology cont. B3 – <i>Tissue</i> structure and function</p> <ul style="list-style-type: none"> • CV system • Respiratory system • Skeletal muscle • Nervous system <p>Unit 1 Chemistry Cont. A2 – Production and uses of substances</p> <ul style="list-style-type: none"> • Periodic table • Physical properties • Chemical properties <p>Unit 3 This is the practical skills exam Maths and statistics</p>	<p>Unit 1 Physics C1 – Working with waves</p> <ul style="list-style-type: none"> • Progressive waves • Wave equation • diffraction <p>Unit 3 Sections A – C method, graphs, data analysis, evaluations etc.</p> <p>D – enzymes</p>	<p>Knowledge and understanding of all topic to date.:</p> <p>B1, B2, B3, A1, A2 and unit 3 math skill</p>	<p>Unit 1 Physics Cont. C2 – Optics</p> <ul style="list-style-type: none"> • Refraction • Optic fibres <p>C3 Communication</p> <ul style="list-style-type: none"> • Invers square law • Communications <p>Unit 3 E - Diffusion</p> <p>G – Fuels</p> <p>H - Electricity</p>	<p>Unit 1 Revision booklets – bio, chem and phys.</p> <p>Unit 3 F - plants and their environment</p> <p>External exams early May</p>	<p>Begin unit 2 Practical coursework</p>	<p>Unit 1 and 3 external exams</p>
Skills:	Pupils will develop in depth laboratory skills as part of unit 3 in Y12 and unit 2 in year 13. Pupils are expected to develop reserch and referencing skills								
Independent Study	Pupils are expected to complete 5HRS of independent study. This includes homework and revision as well as self- study tasks: Complete text book reading and make notes prior to each topic; organise and add to class notes; Complete guided research tasks; Library of support texts available in S9.								

HGSS Curriculum Map

Year 13 BTEC Applied Science



Exam Board: Pearson		Careers: Health care, nursing, physiotherapy, sports science, research, lab work, environmental science and conservation				Co-Curricular:		Sequencing:
	Autumn 1	Deadline 1	Autumn 2	Spring 1	AP1	Spring 2	Final Deadlines	Summer 1
Content:	Assignment 2A – Concentrations <ul style="list-style-type: none"> Standard solutions Titrations Colorimetry Assignment 9A - Nervous System <ul style="list-style-type: none"> Organisation and function Nervous impulses Control of the cardiovascular and respiratory systems Diseases 	Submit U2A1 Aut 1 Submit U9A9 Aut 2	Assignment 2B – Cooling Curves <ul style="list-style-type: none"> Calorimetry Cooling curves Determine the rate of cooling Assignment 9B – Homeostasis <ul style="list-style-type: none"> Hormones Homeostasis Blood sugar Temperature Water balance disease 	Assignment 2C – Chromatography <ul style="list-style-type: none"> Produce chromatograms Explain chromatography Analyse wrt factors that affect the separation of mixtures Evaluate the chromatographic techniques used in relation to outcomes 	Submit U2A2 Submit U9A2	Assignment 9C – Reproduction <ul style="list-style-type: none"> Structure and function of reproductive anatomy. Role of hormones in gamete development and conception. Reproductive health. Evaluate how conception may be prevented and promoted Unit 2D - Evaluation task <ul style="list-style-type: none"> key personal competencies improvements to own practice. potential for future progression. 	U2A3 U2A4 U9A3	Completion of any extensions Resubmission completion All complete by Early May
Skills:	Pupils will develop in depth laboratory skills as part of unit 3 in Y12 and unit 2 in year 13. Pupils are expected to develop research and referencing skills							
Independent Study	Pupils are expected to complete 5HRS of independent study. This includes homework and revision as well as self- study tasks: Complete text book reading and make notes prior to each topic; organise and add to class notes; Complete guided research tasks; Library of support texts available in S9.							