Applied Science Double Award Curriculum Overview

	Y12			
	Unit 1	**Unit 2**	**Unit 4**	**Unit 6**
Half Term 1	Physics: Waves characteristics The electromagnetic Spectrum	Learning Aim A Analysing solutions	Learning AIm A Health and safety in organisations	Learning Aim A and B: ● Choose investigative project ● Research various methods that could be used.
Half Term 2	Physics:Uses of regions of the electromagnetic spectrum Biology: Cell ultrastructure, eukaryotic and Prokaryotic cells, cell specialisation.	Learning Aim B Chromatography of mixtures Learning Aim C Analysing solutions	Learning Aim B Developing techniques in chemical synthesis.Making a useful organic liquid	Learning Aim A and B: ● Carry out preliminary investigative work ● Write a detailed, referenced plan
Half Term 3	Physics: Refraction and fibre optics Biology: Epithelial and endothelial tissue, atherosclerosis and COPD Chemistry: Atomic Structure	Learning Aim D Reflecting on progress and evaluating strengths and weaknesses	Comparing laboratory synthesis of liquids with their industrial manufacture Learning Aim C Developing techniques in chemical synthesis.Making a useful organic solid	Learning Aim C Obtain data for the investigation in line with the plan

Half term 4	Physics: Diffraction and diffraction gratings Biology: Muscle Tissue, muscle action, nervous tissue Chemistry Amount of substance, Structure and Bonding. Trends in physical properties	Completed- focus now on Unit 1 in this lesson time.	Learning Aim C Developing techniques in chemical synthesis.Making a useful organic solid Comparing laboratory methods of synthesis of solids with industrial manufacture	Learning Aim C Review data and in the light of this review obtain further data to support the investigation into the hypothesis
Half term 5	Physics: Stationary waves Biology: Action potentials and neurotransmitters Chemistry		Learning AIm D Laboratory information systems. Investigating systems used in industry	Learning Aim D Process the data obtained from the experiment using statistical and graphical techniques.
Half term 6	Investigative Science Variables Planning valid investigations Analysing data Evaluating processes and data.		Comparing laboratory information systems in industry with those used in school.	Learning Aim D Complete a final report on the investigation including processed data, conclusions and a thorough evaluation.

	Y13			
	Unit 3	**Unit 12**	**Unit 5**	**Unit 17 Microbiology**
Half Term 1	Developing skills in planning, carrying out, analysing and evaluating scientific investigations through the study of: Factors affecting the rate of enzyme action	**Learning Aim A** Pathogens and infectious diseases; dietary and environmental diseases; genetic and degenerative diseases; progression of disease over time	Physics: Thermal Physics- Gas laws, heat engines, refrigerators and heat pumps Biology: Heart, blood vessels, cardiac cycle Chemistry: Chemical properties of substances	**Learning Aim A** Using different microscopes to make observations Characteristics of different microorganism
Half Term 2	Developing skills in planning, carrying out, analysing and evaluating scientific investigations through the study of: Factors affecting the rate of diffusion	**Learning Aim B** Methods by which infectious diseases can be spread; methods by which infectious diseases can be prevented from spreading; management of infectious diseases	Physics: Thermal Physics- Changes of state; specific heat Biology: ECGs, CVD, respiratory system Chemistry:Obtaining useful materials; using useful materials	**Learning Aim B:** Classifying microorganisms Applications of classification in industry and medicine Report writing

Half Term 3	Developing skills in planning, carrying out, analysing and evaluating scientific investigations through the study of: Plant growth	**Learning Aim C** Methods of treatment; access to and acceptance of treatment	Physics: Using materials- stress and strain; Young's modulus Biology: Respirometry, effect of exercise on the respiratory system; kidney structure Chemistry: Organic Chemistry- bonding and structure; nomenclature of hydrocarbons	**Learning Aim C** Investigating factors that affect microbial growth
Half term 4	Developing skills in planning, carrying out, analysing and evaluating scientific investigations through the study of: Energy from fuels	**Learning Aim D** Defence Mechanisms (Specific and non-specific); cell mediated and humoral responses	Physics: Using Materials- elasticity and Hooke's law Biology: Excretion, kidney disease Chemistry: Organic Chemistry- properties and reactions of hydrocarbons	**Learning Aim D** Evaluating methods of working with microorganisms including work in industry and medicine
Half term 5	Developing skills in planning, carrying out, analysing and evaluating scientific investigations through the study of: Power in electrical circuits	Final review and report writing	Physics: Fluids in motion- viscosity, drag, flow Biology: Fluid mosaic model of cell membranes, cell transport mechanisms Chemistry: Energy changes	**Learning Aims C and D** Final review and report writing

Half term 6				