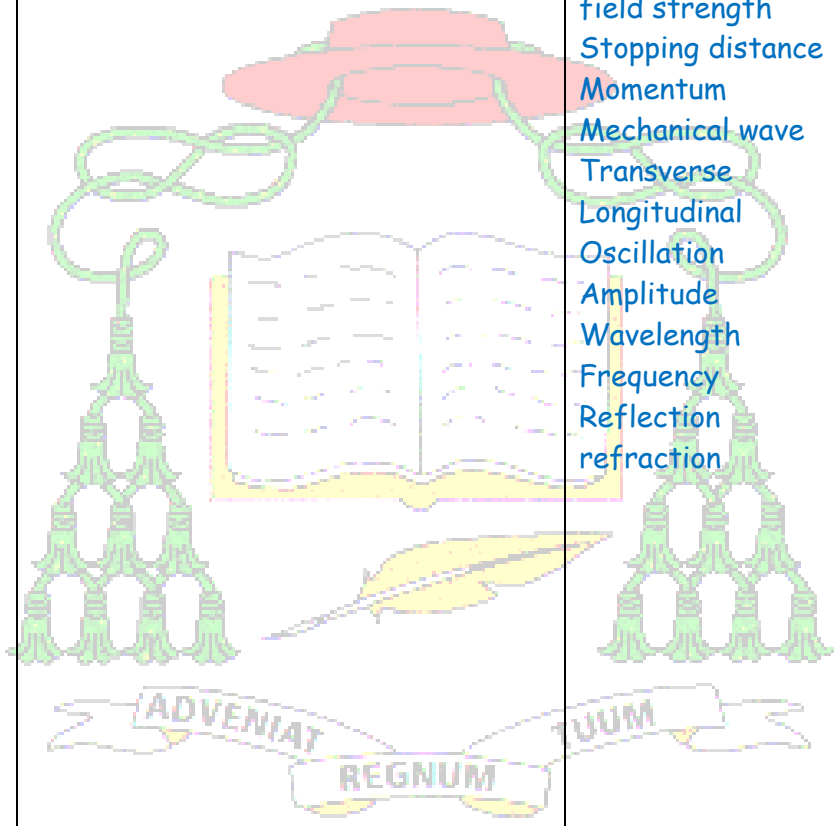
Archbishop Beck Catholic College Long Term Plan for **Science**

Year 11 recovery

Key: Physics Chemistry Biology

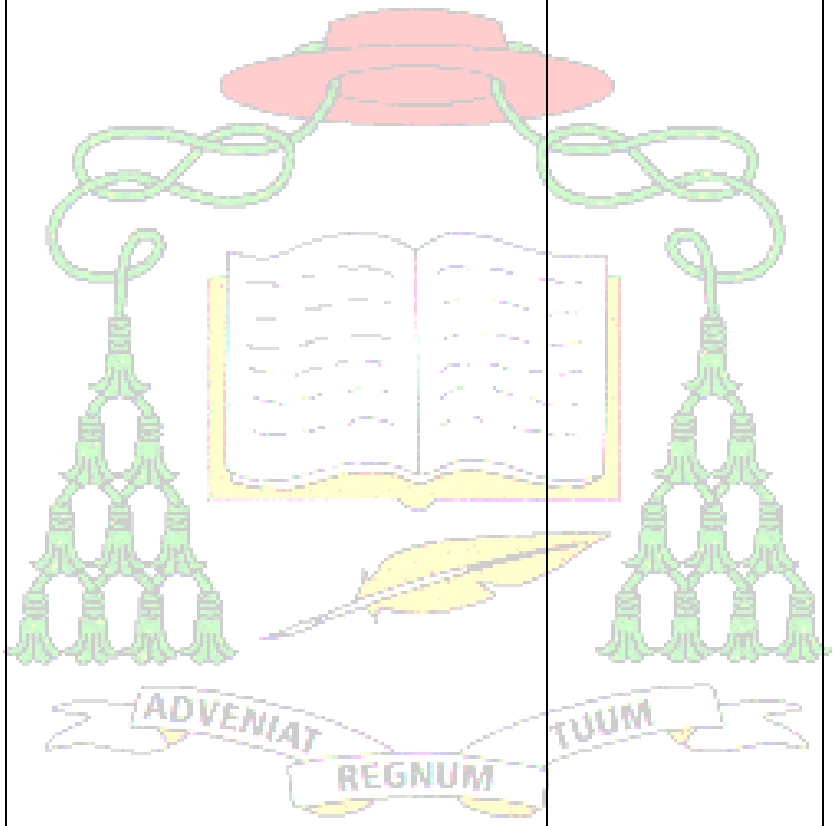
Year 11

Autumn Half Term 1	Half Term 2	Key Vocabulary/Reading Opportunities		
Topic Areas to be covered:	Topic Areas to be covered:	Vector	Electrolysis	Carcinogen
Forces in balance	Wave properties	Scalar	Electrolyte	Correlation
Physics required practical: force and extension	Physics required practical: ripple tank	Displacement	Electrode	Benign
		Magnitude	Anode	Malignant
Motion	Rates and equilibrium	Driving force	Cathode	Photosynthesis
Forces and motion	chemistry required practical: investigating effect of concentration	Friction	Inert	Endothermic
		Newtons	Ionic	Limiting factors
Physics required practical: force and acceleration		Resultant force	Aqueous	Chlorophyll
	Crude oil and fuels	Centre of mass		Aerobic
		Equilibrium	Exothermic	Anaerobic
electrolysis	Chemical analysis	Elasticity	Endothermic	Exothermic
Chemical required practical: electrolysis	Chemistry required practical: chromatography	extension	Activation	Glycogen
		Speed	energy	Oxygen debt
Energy changes		Velocity	Reaction	Metabolism
Chemistry required practical: investigating temperature changes		Acceleration	profile	Homeostasis
	Respiration	Deceleration	Rate of	Neurones
	The nervous system	Acceleration	reaction	Receptors
Non communicable disease	Biology required practical: reaction time	Weight	Collision theory	Effectors
Photosynthesis		Mass	Kinetic	Synapse
	Hormonal coordination	Terminal velocity	Temperature	

Biology required practical: photosynthesis		Gravitational field strength Stopping distance Momentum Mechanical wave Transverse Longitudinal Oscillation Amplitude Wavelength Frequency Reflection refraction	Concentration Catalyst Pressure Reversible Equilibrium Hydrocarbon Alkane Alkene Saturated Unsaturated Fractional distillation Combustion Cracking Thermal decomposition Pure substance Mixture Formulation Chromatogram	Central nervous system Reflex Endocrine system Pituitary gland Hormone Insulin Diabetes Puberty Oestrogen Testosterone Ovulation Contraception
		Reading: AQA Physics for Combined Sciences: Trilogy, Breithaupt et al. AQA Biology for Combined Sciences: Trilogy, Fullick et al.		

		AQA Chemistry for Combined Sciences: Trilogy, Ryan et al. Journal articles as appropriate

Spring Half Term 3	Half Term 4	Key Vocabulary/Reading Opportunities		
Topic Areas to be covered: Electromagnetic waves Physics required practical: infrared radiation Electromagnetism The Earth's atmosphere The Earth's resources Reproduction Variation and evolution Genetics and evolution	Adaptation interdependence and competition Biology required practical: measuring population size Organising an ecosystem Biodiversity and ecosystems Topic Areas to be covered: Consolidation of topics students have underperformed on in assessments. Consolidation and extension of all required practicals.	Electromagnetic wave Infrared ultraviolet Magnetic field Field line Solenoid Electromagnet Motor	Atmosphere Methane Greenhouse gas Climate change Pollution Finite Renewable Non-renewable Potable Ore Life cycle assessment Recycle Environment	Asexual Gamete Mitosis Meiosis Fertilisation Homozygous Heterozygous Allele Gene Genome Recessive Dominant Inheritance Chromosomes screening variation evolution natural selection selective breeding genetic engineering ethical extinction resistance

				classification Community Ecosystem Interdependence Abiotic Biotic Distribution Quadrat Transect Competition adaptation Producer Consumer Photosynthesis Respiration Combustion Biodiversity Pollution Deforestation Global warming Greenhouse effect
		Reading: AQA Physics for Combined Sciences: Trilogy, Breithaupt et al. AQA Biology for Combined Sciences: Trilogy, Fullick et al.		

		AQA Chemistry for Combined Sciences: Trilogy, Ryan et al. Journal articles as appropriate		
Summer Half Term 5	**Half Term 6**	**Key Vocabulary**		
Topic Areas to be covered: Revision for exams	Topic Areas to be covered: Revision for exams			

Year 11

Capital Cultural Experiences throughout the Academic Year	**Learning Characteristics instilled in the curriculum**	**Career Opportunities**
Please stipulate term and approx. date. Half term 1: Presentation in the hall on how to revise for Science effectively.	**Confidence** Manipulation of apparatus, consolidation tasks, knowledge tests to build confidence, weekly quiz, group work, practical work to involve different students being leaders of their group, required practicals completed more than once but with different variables to build confidence with them. **Positive** Use of praise and rewards. Engaging lessons. Competitions. Positive feedback and encouragement to participate. Use of positive comments/texts home. Practical work. **Respectful**	

	Class rules to be followed, meet and greet at door. Encourage respect for all. Treat equipment with respect.	

Metacognition Methods applied in Teaching
High 5 lesson format Consolidation at the start of lesson – departmental format of 4 questions for all plus an extension question. Modelling of practical technique and written answers Questioning to stretch and challenge Work of an appropriate level of challenge Scaffolding where appropriate Independent practice mnemonics Chunking of information, avoid overloading pupils with new concepts. Opportunities to plan own investigations to develop planning and problem solving skills. Use of key vocabulary and opportunities to use this in written work. Knowledge tests.