Year 11 Combined Science Curriculum Plan								
Unit		Core		Hinterland		NC Coverage	Assessment	Whole Education Opportunities
		Knowledge	Skills	Knowledge	Skills			
Biology	Exchange and transport in animals (CB8)	• Substances that need to be transported • Surface area: volume ratio • Circulatory system • Structure of the heart and cardiac output • Cellular respiration (aerobic and anaerobic) • Core practical: Respiration rates	• Prefixes • Ratios • Calculating surface area of cubes • Simple calculations using substitution • Word equations for chemical reactions • Interpreting scatter graphs • Following practical methods • Taking measurements using analogue equipment	• The process of reverse osmosis • Scientific literacy: The first heart transplant	• Application of reverse osmosis knowledge to saltwater purification • Reading scientific literature • Applying knowledge to a medical scenario	B8.1 to B8.12	End of topic assessment (35 marks) PR points use mixed topic assessments	• SMSC—Debate on organ donors and myths associated with being an organ donor • SMSC—Debating whether a brain transplant would be possible relating to knowledge on veins capillaries and arteries of the circulatory system • Careers—Perfumer, clinical perfusion scientist, respiratory physiologist. • RSHE—Ways of identifying, treating and preventing coronary heart disease and heart attacks • RSHE—Scientific literacy on coronary angioplasty
	Ecosystems and material cycles (CB9)	• Food webs • Abiotic factors • Core practical – Quadrats and transects • Biotic factors • Parasitism and mutualism • Human impact on biodiversity • Eutrophication • Conservation and preserving biodiversity • The water cycle • The carbon cycle • The nitrogen cycle	• Sampling using quadrats • Simple calculations using substitution • Analysing abiotic factors using belt transacts • Analysing line graphs of populations	• Impacts on declining pollinator populations • Carbon cycle - links to fuels and atmospheric science topic in chemistry (see below) and renewable/non renewable resources in Physics (year 9), combustion topic in year 8 • The symbiotic relationship between gut bacteria and humans.	• Identifying co-dependence of organisms in complex ecosystems • Relate knowledge on ecological relationships to microorganisms	B9.1 to B9.19	End of topic assessment (35 marks) PR points use mixed topic assessments	• SMSC—The effect humans have on the carbon, nitrogen and water cycle. • SMSC—Debating the process of culling and the impact it has on ecosystems. • Careers-- Ecologist and nature conservationist. • RSHE—Scientific literacy on the distribution of clean water to populations around the world. • RSHE—Water borne diseases associated with not having access to clean drinking water. The purification of water for human consumption.