

## Year 11 - Science

	Topic / Objectives	Knowledge taught	Big picture links	Keywords	Key Skills
Autumn 1 <sup>st</sup> Half-term	B3 & B5- Biological Responses & Ecology	Adaptations, Interdependence and competition Organising an ecosystem Biodiversity and ecosystems Homeostasis & Nervous system Hormonal coordination; diabetes, menstrual cycle and fertility	SPDM- Manufacturing Art- Individual Projects	community, ecosystem, adaptation, competition, interdependence, biodiversity, reflex, homeostasis, endocrine	
Autumn 2 <sup>nd</sup> Half- Term	C3- Rates, equilibrium and organic chemistry	Rates of reaction Dynamic equilibrium Crude oil, fuels and hydrocarbons	SPDM- Manufacturing Art- Individual Projects	equilibrium, surface area, collision theory, crude oil, cracking, alkenes, alkanes	
Spring 1 <sup>st</sup> Half-Term	P3- Forces in Action	Forces in balance; vectors, scalars, resultant forces Motion; speed, acceleration, velocity and distance-time graphs Stopping distances- reaction time Momentum Elasticity- hookes law	SPDM- Manufacturing Art- Exam topic	vectors, scalars, displacement, reaction time, braking, elasticity, extension, force, motion	
Spring 2 <sup>nd</sup> Half-Term	B4- Genetics & Reproduction	Types of reproduction DNA, the genome and genetics Variation and evolution Evidence for evolution and classification system	SPDM- Manufacturing Art- Exam topic	meiosis, mitosis, genetics, reproduction, alleles, punnet square, environmental, genome, natural selection, extinction, selective breeding, genetic engineering	
Summer 1 <sup>st</sup> Half-Term	C4- Analysis & The Earth's resources	Chemical analysis of mixtures, gases and pure substances Chromatography History of the atmosphere, greenhouse gases, climate change and pollution Renewable and non-renewable resources, water, recycling and life cycle assessments	SPDM- Manufacturing	formulation, mixture, chromatography, pollution, global warming, radiation, sewage, atmosphere	
Summer 2 <sup>nd</sup> Half- Term	P2- Particles at work	Electric circuits and components Electricity in the home Molecules & matter; density, changes of state Radioactivity	SPDM- Manufacturing	parallel, series, transformers, components, density, volume, mass, alpha, beta, gamma	