Rainford High School – Department: Science

	Year 9 Curriculum		
Term	**Term 1**	**Term 2**	**Term 3**
Topics	**Biology:** Health & Disease **Chemistry:** Rate of Reaction **Physics:** Exploring space	**Biology:** Cell Biology **Chemistry:** Atomic structure & the periodic table **Physics:** Energy	**Biology:** Cell Biology **Chemistry:** Atomic structure & the periodic table **Physics:** Energy
Essential knowledge, skills and understanding	**Biology** • Correlation vs causation • Smoking & alcohol • Recreational drugs • Effects of exercise • Microbes & disease • Preventing transmission • Defence against disease • Vaccination • Aseptic technique **Chemistry** • Describe & explain • Reversible & irreversible reactions • Rate of reaction • Measuring Rates • Catalysts • Conservation of mass	**Biology** • Eukaryotes • Cell differentiation & specialisation • Stem cells • Uses of stem cells & therapeutic cloning • Mitosis & the cell cycle • Prokaryotes • Types of microscope • Magnification **Chemistry** • Structure of the atom • Electron structure • Isotopes • Development of the model of the atom • Atoms, elements and compounds • Relative formula mass (Mr) • Conservation of mass & balancing equations • Filtering and evaporation • Simple distillation	**Biology** • Diffusion & factors affecting diffusion • Osmosis • Osmosis in plant tissue • Active transport • Surface area to volume ratio • Exchange surfaces **Chemistry** • Periodic table • Development of the periodic table • Metals & non-metals • Metallic bonding & alloys • Group 0 & Transition metals • Group 1 • Group 7 • Displacement of halogens

	<u>Physics</u> • SI Units & conversions • Nuclear fusion • Life cycle of a star • Dark energy & black holes • Space exploration • Living in space • Living on mars • Cosmic radiation • Rocket science	**<u>Physics</u>** • Energy stores & systems • Conservation of energy • Energy transfers in a system • Work done • Kinetic energy • Gravitational potential energy	**<u>Physics</u>** • Power • Energy efficiency • Thermal conductivity • Thermal insulators • Fossil fuels • Nuclear energy • Renewable energy
Assessment	Retrieval testing of knowledge organiser throughout End of topic assessment: Biology: Health and disease Chemistry: Rate of reaction Physics: Exploring space **ASSESSMENT WINDOW 1** Biology, Chemistry and Physics from Y7	Retrieval testing of knowledge organiser throughout End of topic assessment: Biology: Cell biology Chemistry: Atomic structure and periodic table Physics: Energy **ASSESSMENT WINDOW 2** Biology, Chemistry and Physics from Y8	Retrieval testing of knowledge organiser throughout End of topic assessment: Biology: Cell biology Chemistry: Atomic structure and periodic table Physics: Energy Summative assessment 3: End of year assessment from Terms 2&3