

Science Academic Curriculum Overview

Year	<i>Term – substantive knowledge - Content</i>						<i>Disciplinary knowledge/ Transition Milestones</i>
	Sept – Oct	Oct- Dec	Jan-Feb	Feb-Mar	April – May	June-July	By the end of the year students will have learned to apply the following skills through the content studied.....
7	Working in a lab Investigation topic – planning, concluding, analysing Cells and movement	The particle model and separating mixtures, including the structure of the atom Energy costs and energy transfers	Variation and human reproduction Voltage, resistance and current	Interdependence and plant reproduction Periodic table and the elements	Speed and Gravity Earth’s structure and the universe	Working scientifically and investigation planning CREST Award	Apparatus and technique skills Working safely in a lab Names and functions of equipment Data analysis and graph drawing Investigation planning including identification of variables. Producing a basic risk assessment. Changing the subject of an equation Producing word equations when given the reactants or products.
8	Breathing and digestion Acids and alkalis, metals and non-metals	Work, heating and cooling Evolution and inheritance	Chemical energy and types of reaction	Wave properties and wave effects, sound and light	Photosynthesis and respiration Magnets and electromagnets	Contact forces and pressure John Muir Award	Apparatus and technique skills Working safely in a lab and outside Names and functions of equipment Sampling, data analysis and graph drawing Changing the subject of an equation Modelling scientific phenomena Evaluating scientific models and simulations Investigation planning Producing a basic risk assessment. Producing word equations when given the reactants or products.
9	Physics – P6 Molecules and Matter (as far as internal energy) and Density required practical Biology – B1 Cell structure and the microscope. Required practical microscopes. Chemistry – C1 – Atoms, chemical equations, separating mixtures, atomic structure	Physics – P6 Molecules and matter continuing from specific latent heat P2 Energy transfer by heating from specific heat capacity including the required practical Biology – B1 Cell transport including osmosis required practical. Chemistry – C1 – History of the atom, ions, isotopes	Physics – P1 Conservation and dissipation of energy Biology – B2 Cell division Chemistry – C2 – History of the periodic table, group 1	Physics – P2 Energy transfer by heating, heating and insulating buildings and thermal conductivity P3 Energy resources Biology – B3 Organisation and the digestive system including food tests required practical Chemistry C2 – Group 7, Group 0 C3 – States of matter	Physics – P7 Radioactivity Biology – B3 Organisation and the digestive system including enzymes required practical Chemistry – C3 – ionic, covalent	Physics – P7 Radioactivity continuing from Decay equations Biology – B4 Organising animals and plants, just the blood and blood vessels Chemistry – C3 - metallic bonding, properties	Apparatus and technique skills. Developing the analysis of primary and secondary data. Use the periodic table to determine the structure of atom, the compounds of this atom; properties of these compounds and explain how they will react. Modelling scientific phenomena. Evaluating scientific models and simulations. Manipulation of data in equations, conversion of units. Producing balanced symbol equations. Developing scientific literacy skills to describe and explain scientific concepts.

