Subject Academic Curriculum Overview							
Year	***Term – substantive knowledge - Content***						***Disciplinary knowledge/ Transition Milestones***
	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	Induction unit in science – working scientifically skills Investigation topic – planning, concluding, analysing	- Cells and movement - The particle model and separating mixtures - Energy cost and energy transfers	- Energy cost and energy transfers - Variation and human reproduction	- Voltage, resistance and current - Interdependence and plant reproduction	- Periodic table and elements - Speed and gravity	- HSW skills 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.
8	- Breathing and digestion - Metals and non-metals - Acids and alkalis	- 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 HSW skills, investigation planning and GCSE prep	- HSW skills, investigation planning and GCSE prep John Muir	Apparatus and technique skills Working safely in a lab Names and functions of equipment Data analysis and graph drawing Investigation planning
9	Physics- Density +req prac Kinetic theory Biology – Cell structure and the microscope. Required practical microscopes. Chemistry C1 – Atoms, chemical equations, separating mixtures, atomic structure	Physics: Specific Latent heat Specific heat capacity Biology – Cell transport including osmosis required practical. Chemistry C1 – History of the atom, ions, isotopes C2 – History of the periodic table, group 1	Physics: Conservation of energy Energy calculations Energy efficiency Biology - Cell division Chemistry C2 – Group 7, Group 0 C3 – States, bonding	Physics: Heating and insulating buildings and thermal conductivity Energy resources Biology - Organisation in animals and plants including food tests required practical Chemistry C3 – ionic covalent and metallic bonding, properties	Physics : Types of radioactivity Half life Discovery of the nucleus Biology - Organisation in animals and plants including enzymes required practical Chemistry C5- The reactivity series & displacements	Physics: Decay equations Medical uses Biology – Organising animals and plants, the heart. Chemistry C5 - Extraction of metals, acid reactions	Initial GCSE content following AQA specifications Apparatus and technique skills as covered by the specification 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.
10	Physics Electricity Current and charge Series and parallel circuits Resistance and components required practicals. Biology – Organising animals and plants, blood, gas exchange and transport systems in plants. Chemistry C5 – Neutralisation and salts	Physics Mains electricity Plugs, fuses and earth wires Energy and charge Power and efficiency Biology – communicable disease Chemistry C6 – Electrolysis of molten and aqueous substances	Forces and motion Vectors and scalars Resultant forces Velocity and acceleration Motion graphs Biology - disease. Chemistry C7 – Endothermic and exothermic reactions, and uses	Physics Weight and mass Hooke's law required practical Terminal velocity Stopping distances Biology - photosynthesis and respiration Rate of photosynthesis required practical. Chemistry C4 – Chemical calculations	Physics Retrieval paper 1 with extended writing and calculation skills revisited Energy resources and electricity Biology – nervous system and hormonal control. Human reaction time, required practical. Chemistry C8 – Kinetic theory, effect of [ ] and temperature on rate	Mock exams Physics Retrieval paper 1 with extended writing and calculation skills revisited Atomic structure/radioactivity and molecules and matter Biology – nervous system and hormonal control. Human reaction time, required practical. Chemistry C8 – Effect of surface area and catalysts on rate, dynamic equilibrium	Complete various chemical reactions and explain the observations using atomic knowledge. Developing the analysis of primary and secondary data Investigation planning including identification of variables.

11	Physics Types of waves Wave equation and calculations Reflection and refraction Retrieval forces and paper 1 Biology – Reproduction C9 – Crude oil distillation and uses	Physics Electromagnetic spectrum Wave required practical Interleave with molecules and matter Retrieval forces Biology – Variation and evolution. C9 – Hydrocarbons C12 – Chemical analysis, gas tests, chromatography	Physics Magnetic fields Electromagnets interleave with electricity retrieval Motor effect Retrieval waves, radioactivity Biology - Adaptation, interdependence and competition. C13 – Evolution and modern alteration of the atmosphere	C14 – Use, reuse and recycling of water, metals and other products Physics revision and A02 Biology revision and A02 Biology - Biodiversity and ecosystems. Interdependence required practical.	Revision/exams	revision/exams	Apply chemical understanding to industry and the planet Explain the induction of magnetic and electric fields Describe the reliance of organisms on each other within an ecosystem