



Science Department

Long-term sequencing Year 11 GCSE

<p>HALF TERM 1: STUDENTS MUST KNOW:</p> <p><u>Homeostasis and Response</u></p> <ul style="list-style-type: none"> •The structure & function of the human nervous system •How reflexes aid the body & the function of synapse •Required practical – Ruler drop test •The role of hormones in the body •The hormonal control of the human reproductive cycle <p><u>The rate and extent of a chemical change</u></p> <ul style="list-style-type: none"> •Collision theory •Factors affecting the Rate of a Chemical reactions (Temperature, Concentration, Surface area, Catalysts) •Rate graphs •Reversible Reactions and Le Chatelier's Principle. •RP 11 – Effect of concentration on the rate of reaction <p><u>Forces</u></p> <ul style="list-style-type: none"> • Determining resultant forces in free body diagrams. • Forces and elasticity - Hooke's law and elastic/inelastic extensions. • Motion-time graphs • Motion with constant acceleration • Newton's Laws of Motion • Factors affecting stopping distance. • (HT) Momentum calculations and qualitative descriptions of conservation. • REQUIRED PRACTICAL 6 – Investigate the relationship between force and extension for a spring. <p>HOW THIS WILL BE ASSESSED:</p>	<p>HALF TERM 2: STUDENTS MUST KNOW:</p> <p><u>Inheritance, variation and Evolution</u></p> <ul style="list-style-type: none"> •Establish causes of variation between individuals •Compare mitosis and meiosis •How selective breeding is carried out •How genetic engineering is carried out <p><u>Organic Chemistry</u></p> <ul style="list-style-type: none"> •The development of Crude Oil, •Separation, Properties and uses of Crude oil fractions, •Alkanes and Alkenes, •Complete and Incomplete combustion, •Cracking <p><u>Chemical Analysis</u></p> <ul style="list-style-type: none"> •What defines Purity and a Formulation, •Paper chromatography and calculating R_f, •How the R_f is used in analysis, •Testing for Gases (Cl₂, O₂, CO₂ and H₂) <p><u>Waves</u></p> <ul style="list-style-type: none"> •Progressive waves - transverse and longitudinal waves. • Wave properties - time period, wavelength, frequency, wavespeed • Order the electromagnetic spectrum in terms of wavelength • Suggest uses of all aspects of the electromagnetic spectrum • Draw ray diagrams for refraction of light at a boundary. • Qualitative treatment of refraction. • (HT) Describing how antennas convert radio waves to electrical signals. <p>HOW THIS WILL BE ASSESSED:</p>	<p>HALF TERM 3: STUDENTS MUST KNOW:</p> <p><u>Inheritance, variation and Evolution</u></p> <ul style="list-style-type: none"> •How antibiotic resistance evolves in bacteria •How we classify living organisms •The evidence for evolution including fossil evidence <p><u>Chemistry of the atmosphere; and using resources</u></p> <ul style="list-style-type: none"> •The Greenhouse Gases and their effect on Global warming and •Climate change, •Reducing Carbon footprints, •Atmospheric pollutants and their effects on the environment •Natural and synthetic resources. •Renewable and Finite resources. •Sustainable development. •Alternative Methods of metal extraction. •Reusing and Recycling materials, •Life cycle assessments, •Potable water and wastewater treatment. •RP13- How to test and distil salt water <p><u>Magnetism and Electromagnetism</u></p> <ul style="list-style-type: none"> •Permanent magnets, induced magnets - drawing field lines, plotting compasses •Electromagnets - factors affecting the magnetic field strength •(HT) Fleming's Left hand Rule and the motor effect <p>HOW THIS WILL BE ASSESSED:</p>
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Stuart Bathurst Catholic High School

<p>Low stakes quizzing, questioning, retrieval practice and recall. Mid -point knowledge check through each unit. End of topic test at the end of every unit.</p>	<p>Low stakes quizzing, questioning, retrieval practice and recall. Mid- point knowledge check through each unit. End of topic test at the end of every unit.</p>	<p>Low stakes quizzing, questioning, retrieval practice and recall. Mid- point knowledge check through each unit. End of topic test at the end of every unit.</p>
<p><u>HALF TERM 4:</u> STUDENTS MUST KNOW: Ecology</p> <ul style="list-style-type: none"> •How organisms are adapted for survival •How ecological communities are organised •How abiotic and biotic factors affect organisms • How ecosystems are organised • How materials are recycled in ecosystems <p>Pace</p> <ul style="list-style-type: none"> • Stellar evolution of stars with mass similar to the Sun and much greater than the Sun •Red shift •Evidence for the Big Bang Theory •Orbital motion, natural and artificial satellites <p>HOW THIS WILL BE ASSESSED: Low stakes quizzing, questioning, retrieval practice and recall. Mid -point knowledge check through each unit. End of topic test at the end of every unit.</p>	<p><u>HALF TERM 5:</u> STUDENTS MUST KNOW:</p> <ul style="list-style-type: none"> • Biology revision • Chemistry revision • Physics revision • <p>HOW THIS WILL BE ASSESSED: Low stakes quizzing, questioning, retrieval practice and recall. Past paper questions, timed exams.</p>	<p><u>HALF TERM 6:</u></p> <ul style="list-style-type: none"> • Biology revision • Chemistry revision • Physics revision • <p>HOW THIS WILL BE ASSESSED: Low stakes quizzing, questioning, retrieval practice and recall. Past paper questions, timed exams.</p>
<p>Home learning set will consist of a combination of: Seneca and self quizzing using knowledge organisers. In some cases when funding is available student workbooks may be used as an alternative</p>		