



Year 10		BIOLOGY				
		Autumn 1 & 2		Spring 1 & 2		Summer 1 & 2
Topic	Cell Biology	Organisation	Infection & Response	Bioenergetics	Ecology	
Key Concepts	<ul style="list-style-type: none"> Cell structure Microscopy & magnification Prokaryotes & eukaryotes Differentiation & specialised cells Cell cycle & mitosis Stem cells Diffusion Osmosis Active transport 	<ul style="list-style-type: none"> Organisation & digestive system Enzymes Heart & circulation Blood vessels & blood components Coronary heart disease Lung structure & functions Plant tissue Plant transport 	<ul style="list-style-type: none"> Cancer Health and lifestyle factors & disease Pathogens Defence against disease Vaccination Antibiotics & painkillers Drug trials Plant diseases & response Monoclonal antibodies & uses 	<ul style="list-style-type: none"> Photosynthesis Limiting factors, greenhouses & uses of glucose Aerobic respiration & metabolism Anaerobic respiration Response to exercise 	<ul style="list-style-type: none"> Classification Communities, abiotic & biotic factors Adaptations including extremophiles Food chains & predator prey relationships Water & carbon cycles, decomposition* Land use & waste management Maintaining biodiversity Trophic levels & pyramids of biomass Food security, farming techniques & sustainable fisheries Role of biotechnology 	

Year 10		CHEMISTRY						
		Autumn 1 & 2			Spring 1 & 2		Summer 1 & 2	
Topic	Atomic Structure	Structure & Bonding	Chemical Calculations I	Energy Changes	Separation	Chemical Changes II	Salts	
Key Concepts	<ul style="list-style-type: none"> Atoms, elements and compounds History of the atom Atomic structure Ions and isotopes 	<ul style="list-style-type: none"> Ionic bonding Covalent bonding Metallic bonding Nanoscience 	<ul style="list-style-type: none"> Relative masses & moles Masses & balanced equations 	<ul style="list-style-type: none"> Endothermic & exothermic reactions Reaction profile diagrams Bond enthalpy Conservation of mass Gas calculations 	<ul style="list-style-type: none"> Filtration Crystallisation Distillation 	<ul style="list-style-type: none"> Extraction of metals Electrolysis of molten compounds Electrolysis of aqueous compounds Half-equations Chemical & fuel cells 	<ul style="list-style-type: none"> Salts from metals Salts from insoluble bases Neutralisation and pH Strong and weak acids Concentrations of solutions 	
	<p>The Periodic Table</p> <ul style="list-style-type: none"> Development of the periodic table Metals, non-metals and transition elements Groups 1, 7 and 0 Transition metals 						<p>Chemical Changes I</p> <ul style="list-style-type: none"> Reactivity series Oxidation & reduction (REDOX) 	<p>Chemical Calculations II</p> <ul style="list-style-type: none"> Yield & atom economy Measurements & uncertainties

Year 10		PHYSICS				
		Autumn 1	Autumn 2	Spring 1	Spring 2 & Summer 1	Summer 2
Topic	Energy	Electricity	Particle Model	Waves	Atomic Structure	
Key Concepts	<ul style="list-style-type: none"> Energy stores Changes in energy Energy changes in systems Power Energy transfers Efficiency Energy resources 	<ul style="list-style-type: none"> Circuit symbols Charge & current Ohm's Law & resistance Series & parallel circuits Thermistors & LDRs Electricity at home Power & energy Static charge & electric fields 	<ul style="list-style-type: none"> Density of regular shaped objects Density of irregular shaped objects Particle model Changes of state Physical & chemical changes Specific heat capacity Internal energy & latent heat Motion of particles in a gas Pressure in gases 	<ul style="list-style-type: none"> Wave properties Reflection of waves Sound waves Waves for detection & exploration Electromagnetic waves Refraction Changes in atoms & radio waves 	<ul style="list-style-type: none"> The atom Radioactive decay Nuclear decay equations Half life Radiation safety Hazards & uses of radioactive emissions & background radiation Nuclear 	



Years 10 & 11 Curriculum *continued*

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Year 11		BIOLOGY			
		Autumn 1 & 2		Spring 1 & 2	
Topic	Homeostasis		Inheritance, Variation & Evolution		
Key Concepts	<ul style="list-style-type: none"> The human nervous system The brain Structure of the eye & accommodation Homeostasis, endocrine & body temperature Control of blood glucose & diabetes 	<ul style="list-style-type: none"> Hormones & the menstrual cycle Hormones & infertility/contraception Plant hormones & uses Control of water levels in the body Kidney function, ADH & kidney failure 	<ul style="list-style-type: none"> Sexual & asexual reproduction DNA & the genome Meiosis Protein synthesis & the effect of mutation Inheritance & gender Genetic disorders 	<ul style="list-style-type: none"> Types of variation Evolution, natural selection & speciation Evidence for evolution Selective breeding & genetic engineering Cloning 	

Year 11		CHEMISTRY					
		Autumn 1 & 2			Spring 1 & 2		
Topic	Organic Chemistry I	Rates of Reaction	Chemical Calculations III	Chemical analysis	The Earth's Atmosphere	Organic Chemistry II	Using Resources
Key Concepts	<ul style="list-style-type: none"> Crude oil, hydrocarbons and alkanes Fractional distillation Combustion Alkenes & cracking Polymers 	<ul style="list-style-type: none"> Rate of reaction & collision theory Factors affecting rate Reversible reactions Equilibria The Haber process 	<ul style="list-style-type: none"> Moles, balancing equations From masses to balanced equations Limiting reactants Concentrations Titrations 	<ul style="list-style-type: none"> Ion tests Instrumental techniques Chromatography 	<ul style="list-style-type: none"> The Earth's atmosphere Greenhouse gases The greenhouse effect Global climate change 	<ul style="list-style-type: none"> Alcohols and their reactions Carboxylic acids and their reactions Polymerisation methods (addition & condensation) Biological molecules 	<ul style="list-style-type: none"> Life Cycle Assessments (LCAs) Potable water/cleaning water Alternative methods of extracting metals Corrosion Alloys Ceramics, polymers & composites Potable water

Year 11		PHYSICS		
		Autumn 1 & 2	Spring 1	Spring 2
Topic	Forces		Magnetism & Electromagnetism	Space
Key Concepts	<ul style="list-style-type: none"> Forces & their interactions Resultant forces Forces & elasticity Moments, levers & gears Describing motion along a line Distance and Velocity time graphs Acceleration 	<ul style="list-style-type: none"> Newton's 1st, 2nd & 3rd Laws Stopping distances & reaction times Forces & braking Momentum & changes in momentum Pressure in fluids Atmospheric pressure 	<ul style="list-style-type: none"> Magnets & magnetic fields Electromagnetism Flemings left hand rule & electric motors (HT only) Loudspeakers Induced potential & the generator effect Transformers 	<ul style="list-style-type: none"> Lifetime of a star Our solar system Orbital motion Redshift



Years 10 & 11 Assessment

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All pupils will sit several knowledge tests and a mock examination in Year 10. In Year 11, pupils will sit an assessment and a mock examination.

	Year 10		Year 11		Revision Resources
	Knowledge Tests	Mock Exam	Assessment	Mock Exam	
	Autumn/Spring Terms	Summer Term	Autumn Term	Spring Term	
Style of Assessment	Each knowledge test will consist of 20 multiple-choice questions	Each assessment will contain a variety of questions including multiple choice, structured, closed short answer, and open response			<i>Kennet Resources</i> <ul style="list-style-type: none"> Core Questions Knowledge Organisers Learning Habits
Topics Assessed	<ul style="list-style-type: none"> Core knowledge taught until that point in the academic year 	<ul style="list-style-type: none"> Biology: Cell biology, organisation, infection, and response, bioenergetics Chemistry: Atomic structure and the periodic table, bonding & structure, and quantitative chemistry Physics: Energy, electricity, particle model of matter, waves 	<ul style="list-style-type: none"> Biology: Cell biology, organisation, infection, and response, bioenergetics Chemistry: Atomic structure and the periodic table, bonding & structure, quantitative chemistry, chemical changes, and energy changes Physics: Energy and electricity, particle model of matter, waves, atomic structure 	<ul style="list-style-type: none"> Biology: Cell biology, organisation, infection and response, bioenergetics, homeostasis and response, inheritance, and ecology Chemistry: Atomic structure and the periodic table, bonding and structure, quantitative chemistry, chemical changes, and energy changes (<i>Paper 1</i>) Physics: Energy, electricity, particle model of matter and atomic structure (<i>Paper 1</i>) 	<i>External Resources</i> <ul style="list-style-type: none"> www.educake.co.uk www.educationquizzes.com www.bbc.com/bitesize www.youtube.com