

Curriculum Sequencing Grid: **Trilogy Combined Science**

Year 10	Term 1	Term 2	Term 3
Unit (Tablet in 39-week plan)	<ul style="list-style-type: none"> • B4.3 Infection • B4.4 Bioenergetics • C5.3 Quantitative • C5.4 Chemical changes • P6.3 Particle model • P6.5 Forces (part) 	<ul style="list-style-type: none"> • B4.5 Homeostasis • C5.5 Energy changes • C5.7 Organic • P6.5 Forces (part) • P6.6 Waves (part) 	<ul style="list-style-type: none"> • B5.7 Ecology • C5.6 Rates • P6.6 Waves (part)
Key Retainable Knowledge (Required for Y11/13) <ul style="list-style-type: none"> • What... How.... Why.... 	<ul style="list-style-type: none"> • White bloods cells, antibodies, and vaccines • Pathogens • Photosynthesis • Respiration • Mathematical skills and calculations • Remembering and application of formulae/units • Relative formula mass • Percentage Yield • Word and symbol equations • Reactions and products • Writing and reading formulae • Everyday reactions • Density • Specific heat capacity • Internal energy • Particle motion in gases • Required Practical skills • Interaction of forces • Newton's Laws • Motion graphs 	<ul style="list-style-type: none"> • Nervous system • Reflex actions • Fertility • Exothermic • Endothermic • Carbon chemistry • Required Practical skills • Interaction of forces • Newton's Laws • Motion graphs • Electromagnetic waves 	<ul style="list-style-type: none"> • Abiotic • Biotic • Communities • Adaptations • Organisation levels • Graph analysis • Particle theory • Electromagnetic waves •

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<p>Key Technical Vocabulary (To be modelled and deliberately practiced in context.)</p>	<ul style="list-style-type: none"> • Moles, Relative formula mass, yield, concentration, • Reaction, Reactants, Products, Reversible, Equilibrium • Specific heat capacity, gases, density, volume, mass • Force, Newton, gravity, mass, weight, distance, speed, velocity, vector, scalar, extension, resultant force, pressure 	<ul style="list-style-type: none"> • Homeostasis, control, diabetes, hormones, fertility, dialysis • Neutralisation, displacement, exothermic, endothermic, Cells, fuel cells • Force, Newton, gravity, mass, weight, distance, speed, velocity, vector, scalar, extension, resultant force, pressure • Longitudinal, transverse, wavelength, frequency, wave speed, peak, trough, amplitude, electromagnetic spectrum, infrared radiation 	<ul style="list-style-type: none"> • Quadrat, Transect, Variation, Population, Ecosystem, Interdependence • Temperature, Surface area, catalyst, concentration, equilibrium, rate • Longitudinal, transverse, wavelength, frequency, wave speed, peak, trough, amplitude, electromagnetic spectrum, infrared radiation
<p>Opportunities for Reading</p>	<ul style="list-style-type: none"> • Development of Covid-19 vaccine • Researching different types of engineering jobs and how these links to different parts of this topic • Research Brownian motion and the Smoke Cell Experiment 	<ul style="list-style-type: none"> • Hormones involved in growth • Leah Betts news story • The news in terms of recent updates about energy resources 	<ul style="list-style-type: none"> • Conservation of snow leopard, Successful breeding of Giant Pandas in Edinburgh Zoo
<p>Developing Cultural Capital (exposure to very best- essential knowledge and skills of educated citizens – appreciation of human creativity and achievement.)</p>	<ul style="list-style-type: none"> • Development of Covid-19 vaccine • Job Links = chemical analyst, chemical engineering, mechanical engineering • Appreciation of human creativity and achievement = Avogadro's discoveries 	<ul style="list-style-type: none"> • Job Links = pharmacist, doctor, nurse, family & sexual health clinic worker, care worker, chemical engineering, food production, telecommunications, communications • Appreciation of human creativity and achievement = Doppler 	<ul style="list-style-type: none"> • Job Links = ecologist, conservationist, environmental engineering, telecommunications, communications • Appreciation of human creativity and achievement = Doppler

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Cross Curricular Links (Authentic Connections)	<ul style="list-style-type: none"> • Health and social care – vaccines and social care • Maths – formula: application of formula and units, rearranging formula • Maths – line graphs: drawing and interpreting 	<ul style="list-style-type: none"> • Maths – formula: application of formula and units, rearranging formula • Maths – line graphs: drawing and interpreting 	<ul style="list-style-type: none"> • Maths – formula: application of formula and units, rearranging formula • Maths – line graphs: drawing and interpreting
Key Assessment	<ul style="list-style-type: none"> • End of Unit Tests 	<ul style="list-style-type: none"> • End of Unit Tests 	<ul style="list-style-type: none"> • End of Unit Tests • Y10 Mock
How Science Work Skills in Science	<ul style="list-style-type: none"> • These skills will continuously throughout the year, some, or all of which will be covered within each topic <ul style="list-style-type: none"> ○ Variables ○ Equipment ○ Risk assessments ○ Writing a method ○ Presenting data (bar charts and line graphs) ○ Interpreting data ○ Types of error (measuring, systematic, random) ○ Equations, calculations, and units ○ Evaluating ○ Models 		

Year 11	Term 1	Term 2	Term 3
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<p>Unit (Tablet in 39-week plan)</p>	<ul style="list-style-type: none"> • B4.7 Ecology • B4.6 Genetics (part) • C5.6 Rates • C5.7 Organic • C5.8 Chemical analysis • P6.5 Forces recap • P6.6 Waves 	<ul style="list-style-type: none"> • B4.6 Genetics (part) • B4.5 Homeostasis • C5.9 Atmosphere • C5.10 Resources • P6.7 Magnets 	<ul style="list-style-type: none"> • Revision
<p>Key Retainable Knowledge (Required for Y11/13)</p> <ul style="list-style-type: none"> • What... How.... Why.... 	<ul style="list-style-type: none"> • Abiotic • Biotic • Communities • Adaptations • Organisation levels • Sexual and asexual reproduction • Variation • Evolution • Carbon chemistry • Chromatography • Mixtures 	<ul style="list-style-type: none"> • Sexual and asexual reproduction • Variation • Evolution • Nervous system • Reflex actions • Fertility • Changes to carbon dioxide levels • Combustion of fuels • Evolution of plants and animals • Economic problems with producing enough potable water globally • Interaction of magnets • Earth's magnetic field • Electromagnets 	<ul style="list-style-type: none"> • EVERYTHING!
<p>Key Technical Vocabulary (To be modelled and deliberately practiced in context.)</p>	<ul style="list-style-type: none"> • Quadrat, Transect, Variation, Population, Ecosystem, Interdependence • Sexual, Asexual, Reproduction, Fertilisation, Mitosis, Clone, Variation, Meiosis, Mitosis, Gamete, Fertilisation, Clone, Chromosome, DNA, Genome 	<ul style="list-style-type: none"> • Sexual, Asexual, Reproduction, Fertilisation, Mitosis, Clone, Variation, Meiosis, Mitosis, Gamete, Fertilisation, Clone, Chromosome, DNA, Genome • Homeostasis, control, diabetes, hormones, fertility, dialysis 	

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	<ul style="list-style-type: none"> Alkanes, alkenes, hydrocarbons, fractional distillation, cracking, combustion Chromatography, analysis, Rf value 	<ul style="list-style-type: none"> Climate change, carbon dioxide, oxygen, photosynthesis, respiration, combustion Potable water, renewable, non-renewable, finite Attract, repel, electromagnet, core, field, solenoid, Flemming's Left Hand Rule, motor effect, generator effect, transformer, potential difference, induced, current, movement 	
Opportunities for Reading	<ul style="list-style-type: none"> Conservation of snow leopard, Successful breeding of Giant Pandas in Edinburgh zoo Theories of evolution 	<ul style="list-style-type: none"> Theories of evolution Hormones involved in growth Leah Betts news story Carbon capture Researching how a compass works 	
Developing Cultural Capital (exposure to very best- essential knowledge and skills of educated citizens – appreciation of human creativity and achievement.)	<ul style="list-style-type: none"> Job Links = ecologist, conservationist, environmental engineering Debating ethics of genetic engineering and cloning 	<ul style="list-style-type: none"> Debating ethics of genetic engineering and cloning Job Links = pharmacist, doctor, nurse, family & sexual health clinic worker, care worker, environmental chemistry, geologist 	
Cross Curricular Links (Authentic Connections)	<ul style="list-style-type: none"> Maths – formula: application of formula and units, rearranging formula Maths – line graphs: drawing and interpreting 	<ul style="list-style-type: none"> Maths – formula: application of formula and units, rearranging formula Maths – line graphs: drawing and interpreting 	

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	<ul style="list-style-type: none"> English: Extended writing and comprehension tasks. History: History of classification and DNA discovery. Links to history of medicine. 		
Key Assessment	<ul style="list-style-type: none"> End of Unit Tests Paper 1 Y11 Mocks 	<ul style="list-style-type: none"> End of Unit Tests Paper 2 Y11 Mocks 	<ul style="list-style-type: none"> Real Exams!!!
How Science Work Skills in Science	<ul style="list-style-type: none"> These skills will continuously throughout the year, some, or all of which will be covered within each topic <ul style="list-style-type: none"> Variables Equipment Risk assessments Writing a method Presenting data (bar charts and line graphs) Interpreting data Types of error (measuring, systematic, random) Equations, calculations, and units Evaluating Models 		