

## Curriculum Content Summary

**SUBJECT:** Science – years 7 and 8

	Year 7	Year 8
<b>Term One</b>	<u>Interdependence:</u> <ul style="list-style-type: none"> <li>• Classifications of organisms</li> <li>• Study of plants</li> <li>• Food chains and webs</li> <li>• Effects of environmental factors on the population of different species</li> </ul>	<u>Forces:</u> <ul style="list-style-type: none"> <li>• Pressure points</li> <li>• Turning forces and moments</li> <li>• Joints as Levers</li> <li>• Speed</li> <li>• Gravity and weight</li> <li>• Space</li> </ul>
<b>Term Two</b>	<u>Forces:</u> <ul style="list-style-type: none"> <li>• Balanced and unbalanced forces</li> <li>• Speed</li> <li>• Friction and air resistance</li> <li>• Magnetism and Electromagnetism</li> <li>• The solar system</li> </ul>	<u>Interdependence:</u> <ul style="list-style-type: none"> <li>• Global warming</li> <li>• The effect of acid on our plants</li> <li>• How clean is our air?</li> <li>• Environment</li> <li>• Pathogens and diseases</li> <li>• Vaccination</li> <li>• How to get rid of microbes</li> </ul>
<b>Term Three</b>	<u>Particles and Materials:</u> <ul style="list-style-type: none"> <li>• Burning</li> <li>• Acids and Alkalis</li> <li>• Particles</li> <li>• Diffusion</li> <li>• Chemical Reactions</li> <li>• Distillation</li> <li>• Chromatography</li> </ul>	<u>Particles and Materials:</u> <ul style="list-style-type: none"> <li>• Elements and compounds</li> <li>• Chemical equations</li> <li>• Metals and acids</li> <li>• Displacement of metals</li> <li>• Predicting reactions</li> <li>• Corrosion of metals</li> <li>• Acids, alkalis and bases</li> <li>• Carbonates and acid</li> <li>• Precipitating salts</li> </ul>
<b>Term Four</b>	<u>Life:</u> <ul style="list-style-type: none"> <li>• Using a microscope</li> <li>• Cells, tissues and organs</li> <li>• Reproduction</li> <li>• Digestion</li> <li>• Respiration</li> <li>• Circulation</li> <li>• Effects of alcohol, tobacco and cannabis on the body</li> </ul>	<u>Energy:</u> <ul style="list-style-type: none"> <li>• Sound</li> <li>• The ear and hearing</li> <li>• Light</li> <li>• Reflection and refraction</li> <li>• Colours</li> </ul>
<b>Term Five</b>	<u>Energy:</u> <ul style="list-style-type: none"> <li>• Types of energy</li> <li>• Energy transfer</li> <li>• Fuels and energy</li> <li>• Electric circuits</li> <li>• Power stations</li> <li>• Burning problems</li> <li>• Renewable energy</li> <li>• Heat transfer</li> <li>• Home insulation</li> </ul>	<u>Life:</u> <ul style="list-style-type: none"> <li>• Inheritance</li> <li>• Selective Breeding and cloning</li> <li>• Photosynthesis</li> <li>• Biomass</li> <li>• The importance of plants</li> <li>• Reproduction in flowering plants</li> <li>• Fertilisers and Growing more crops</li> </ul>
<b>Term Six</b>	<u>Geology:</u> <ul style="list-style-type: none"> <li>• Rocks</li> <li>• Weathering</li> <li>• Transporting rocks</li> <li>• Fossils</li> <li>• Type of rocks</li> <li>• Theories about the Earth</li> <li>• Volcanoes and folds</li> <li>• The rock cycle</li> </ul>	<u>Practical skills - How science works</u>

## Curriculum Content Summary

**SUBJECT:** Triple Science – years 9, 10 and 11

Year 10 and 11 are taught on rotation – so different groups may study these topics in different orders.

	Year 9	Year 10	Year 11
<b>Term One</b>	<p><u>Is there life on other planets?</u> Organisms are organised on a cellular basis Organisms require a supply of energy and materials for which they are often dependent on or in competition with other organisms Genetic information is passed down from one generation of organisms to another</p>	<p><u>Biology 1</u> Keeping Healthy Coordination and Control Medicine and Drugs Adaptation for survival Energy in Biomass Variation, reproduction and new technology Evolution</p> <p><u>Chemistry 1</u> Fundamental Ideas Rocks and Building Materials Metals and their Uses</p>	<p><u>Chemistry Unit 2</u> How much Rates and Energy Salts and Electrolysis</p> <p>Controlled Assessments</p> <p><u>Physics Unit 2</u> Motion Forces</p>
<b>Term Two</b>	<p><u>Could we ever colonise Mars?</u> Our solar system is a very small part of one of millions of galaxies in the Universe The knowledge produced by science is used in some technologies to create products to serve human ends Applications of science often have ethical, social, economic and political implications</p>	<p>Crude Oils and Fuels Products from Oil Plant Oils Our Changing Planet</p> <p><u>Physics 1</u> Energy Transfer by Heating Using Energy Electrical Energy Generating Electricity</p>	<p>Work, Energy and Momentum Current Electricity Mains Electricity Radioactivity Energy from the Nucleus</p> <p>Controlled Assessments</p>
<b>Term Three</b>	<p><u>What if there was no moon?</u> Objects can affect other objects at a distance Changing the movement of an object requires a net force to be acting on it Science assumes that for every effect there is one or more causes</p>	<p>Waves Electromagnetic Waves</p> <p>Controlled Assessments</p> <p><u>Biology 2</u> Cells, Tissues and Organs Organisms in the environment Enzymes Energy from Respiration Simple Inheritance in Animals and Plants Old and New Species</p>	<p><u>Chemistry Unit 3</u> The Periodic Table Water Energy Calculations Analysis and Synthesis Organic Chemistry</p> <p>Controlled Assessments</p> <p><u>Physics Unit 3</u> Medical Applications of Physics</p>

<b>Term Four</b>	<p><u>How will the Earth system change in the future?</u>  The total amount of energy in the Universe is always the same but energy can be transformed when things change or are made to happen  The composition of the Earth and its atmosphere and the processes occurring within them shape the Earth's surface and its climate  The diversity of organisms, living and extinct, is the result of evolution</p>	<p><u>Chemistry 2</u>  Structure and Bonding  Structure and Properties  How much  Rates and Energy  Salts and Electrolysis</p>	<p>Using Physics to Make Things Work  Using Magnetic Fields to Keep Things Moving  Controlled Assessments</p>
<b>Term Five</b>	<p><u>Will the Universe ever end?</u>  All material in the Universe is made of very small particles  Our solar system is a very small part of one of millions of galaxies in the Universe  Scientific explanations, theories and models are those that best fit the facts known at a particular time</p>	<p><u>Physics 2</u>  Motion  Forces  Work, Energy and Momentum  Current Electricity  Mains Electricity  Radioactivity  Energy from the Nucleus</p>	<p>Preparation for Exams</p>
<b>Term Six</b>	<p><u>Science fact or fiction?</u>  The knowledge produced by science is used in some technologies to create products to serve human ends  Applications of science often have ethical, social, economic and political implications</p>	<p><u>Biology 2</u>  Cells, Tissues and Organs  Organisms in the environment  Enzymes  Energy from Respiration  Simple Inheritance in Animals and Plants  Old and New Species  Controlled Assessments</p>	<p>Preparation for Exams</p>

## Curriculum Content Summary

**SUBJECT:** Triple Science – years 9, 10 and 11

Year 10 and 11 are taught on rotation – so different groups may study these topics in different orders.

	Year 9	Year 10	Year 11
<b>Term One</b>	<p><u>Is there life on other planets?</u> Organisms are organised on a cellular basis Organisms require a supply of energy and materials for which they are often dependent on or in competition with other organisms Genetic information is passed down from one generation of organisms to another</p>	<p><u>Biology 1</u> Keeping Healthy Coordination and Control Medicine and Drugs Adaptation for survival Energy in Biomass Variation, reproduction and new technology Evolution</p> <p><u>Chemistry 1</u> Fundamental Ideas Rocks and Building Materials Metals and their Uses</p>	<p><u>Chemistry Unit 2</u> How much Rates and Energy Salts and Electrolysis</p> <p>Controlled Assessments</p> <p><u>Physics Unit 2</u> Motion Forces</p>
<b>Term Two</b>	<p><u>Could we ever colonise Mars?</u> Our solar system is a very small part of one of millions of galaxies in the Universe The knowledge produced by science is used in some technologies to create products to serve human ends Applications of science often have ethical, social, economic and political implications</p>	<p>Crude Oils and Fuels Products from Oil Plant Oils Our Changing Planet</p> <p><u>Physics 1</u> Energy Transfer by Heating Using Energy Electrical Energy Generating Electricity</p>	<p>Work, Energy and Momentum Current Electricity Mains Electricity Radioactivity Energy from the Nucleus</p> <p>Controlled Assessments</p>
<b>Term Three</b>	<p><u>What if there was no moon?</u> Objects can affect other objects at a distance Changing the movement of an object requires a net force to be acting on it Science assumes that for every effect there is one or more causes</p>	<p>Waves Electromagnetic Waves</p> <p>Controlled Assessments</p> <p><u>Biology 2</u> Cells, Tissues and Organs Organisms in the environment Enzymes Energy from Respiration Simple Inheritance in Animals and Plants Old and New Species</p>	<p><u>Chemistry Unit 3</u> The Periodic Table Water Energy Calculations Analysis and Synthesis Organic Chemistry</p> <p>Controlled Assessments</p> <p><u>Physics Unit 3</u> Medical Applications of Physics</p>

<p><b>Term Four</b></p>	<p><u>How will the Earth system change in the future?</u>  The total amount of energy in the Universe is always the same but energy can be transformed when things change or are made to happen  The composition of the Earth and its atmosphere and the processes occurring within them shape the Earth's surface and its climate  The diversity of organisms, living and extinct, is the result of evolution</p>	<p><u>Chemistry 2</u>  Structure and Bonding  Structure and Properties  How much  Rates and Energy  Salts and Electrolysis</p>	<p>Using Physics to Make Things Work  Using Magnetic Fields to Keep Things Moving  Controlled Assessments</p>
<p><b>Term Five</b></p>	<p><u>Will the Universe ever end?</u>  All material in the Universe is made of very small particles  Our solar system is a very small part of one of millions of galaxies in the Universe  Scientific explanations, theories and models are those that best fit the facts known at a particular time</p>	<p><u>Physics 2</u>  Motion  Forces  Work, Energy and Momentum  Current Electricity  Mains Electricity  Radioactivity  Energy from the Nucleus</p>	<p>Preparation for Exams</p>
<p><b>Term Six</b></p>	<p><u>Science fact or fiction?</u>  The knowledge produced by science is used in some technologies to create products to serve human ends  Applications of science often have ethical, social, economic and political implications</p>	<p><u>Biology 2</u>  Cells, Tissues and Organs  Organisms in the environment  Enzymes  Energy from Respiration  Simple Inheritance in Animals and Plants  Old and New Species  Controlled Assessments</p>	<p>Preparation for Exams</p>

## Curriculum Content Summary

**SUBJECT:** Biology, Chemistry and Physics AS level – year 12

	<b>Biology AS</b>	<b>Chemistry AS</b>	<b>Physics AS</b>
<b>Term One</b>	<ul style="list-style-type: none"> <li>Introduction to A level biology</li> </ul> <u>UNIT 1</u> KPA <ul style="list-style-type: none"> <li>Lungs and lung disease</li> <li>Heart and heart disease</li> </ul> FFE <ul style="list-style-type: none"> <li>Causes of disease</li> <li>Enzymes and digestive system</li> </ul> + end of topic assessments	<u>UNIT 1</u> AZ <ul style="list-style-type: none"> <li>Atomic Structure</li> <li>Periodicity</li> </ul> VR – Unit 1 <ul style="list-style-type: none"> <li>Amount of Substance</li> </ul> PSA assessment	<u>UNIT 1</u> <ul style="list-style-type: none"> <li>Matter and Radiation</li> <li>Quarks and Leptons</li> <li>Quantum Phenomena</li> </ul> UNIT 3 Practice
<b>Term Two</b>	KPA <ul style="list-style-type: none"> <li>Immunity</li> </ul> FFE <ul style="list-style-type: none"> <li>Cells and movement in and out of them</li> <li>Practice controlled assessment</li> </ul> + end of topic assessments	AZ 1 <ul style="list-style-type: none"> <li>Introduction to Organic Chemistry</li> <li>Alkanes</li> </ul> VR <ul style="list-style-type: none"> <li>Bonding</li> </ul> PSA assessment/ UNIT 3 Practice	<ul style="list-style-type: none"> <li>Electric Current</li> <li>Direct Current Circuits</li> <li>Alternating Currents</li> </ul> UNIT 3 Practice
<b>Term Three</b>	<u>UNIT 2</u> KPA <ul style="list-style-type: none"> <li>Variety of life</li> <li>Exchange and transport in animals</li> <li>Controlled assessment</li> </ul> FFE <ul style="list-style-type: none"> <li>Variation</li> <li>DNA and meiosis</li> <li>Genetic diversity</li> </ul> + end of topic assessments	UNIT 3 Practice  <u>UNIT 2</u> AZ <ul style="list-style-type: none"> <li>Haloalkanes</li> <li>Alkenes</li> <li>Alcohols</li> </ul> VR <ul style="list-style-type: none"> <li>Redox</li> <li>Energetics</li> </ul> UNIT 3 – assessed practical PSA assessment	UNIT 3 – assessed practical  <u>UNIT 2</u> <ul style="list-style-type: none"> <li>Forces in equilibrium</li> <li>Linear Motion</li> <li>Motion and Force</li> </ul>
<b>Term Four</b>	KPA <ul style="list-style-type: none"> <li>Exchange and transport in plants</li> <li>Classification</li> </ul> FFE <ul style="list-style-type: none"> <li>Cell cycle</li> <li>Cellular organisation</li> <li>Controlled assessment</li> </ul> + end of topic assessments	AZ <ul style="list-style-type: none"> <li>Group 7</li> <li>Group 2</li> <li>The extraction of metals</li> <li>Analytical Techniques</li> </ul> VR <ul style="list-style-type: none"> <li>Kinetics</li> <li>Equilibria</li> </ul>	UNIT 3 – assessed practical <ul style="list-style-type: none"> <li>Work, energy and power</li> <li>Materials</li> <li>Waves</li> <li>Optics</li> </ul>

		UNIT 3 – assessed practical PSA assessment	
<b>Term Five</b>	KPA <ul style="list-style-type: none"> <li>• Biodiversity</li> </ul> FFE <ul style="list-style-type: none"> <li>• Evidence for relationships between organisms</li> <li>• Adaptation and selection</li> </ul> + end of topic assessments	Finishing UNIT 2  Exam preparation	Finishing UNIT 2  Exam preparation
<b>Term Six</b>	KPA and FFE <ul style="list-style-type: none"> <li>• Revisiting areas of difficulty</li> </ul>	<u>UNIT 4 (A2 Chemistry)</u>  AZ <ul style="list-style-type: none"> <li>• Nomenclature and isomerism in organic chemistry</li> </ul> VR <ul style="list-style-type: none"> <li>• Kinetics</li> </ul>	<u>UNIT 4 (A2 Physics)</u> <ul style="list-style-type: none"> <li>• Force and Momentum</li> <li>• Circular Motion</li> <li>• Simple Harmonic Motion – beginning section</li> </ul>

## Curriculum Content Summary

**SUBJECT:** Biology, Chemistry and Physics A2 level – year 13

	<b>Biology A2</b>	<b>Chemistry A2</b>	<b>Physics A2</b>
<b>Term One</b>	<p>Introduction to A2 biology</p> <p><u>UNIT 4</u></p> <p>KPA</p> <ul style="list-style-type: none"> <li>• Energy and ecosystems</li> </ul> <p>FFE</p> <ul style="list-style-type: none"> <li>• Populations</li> <li>• ATP</li> </ul> <p>+ end of topic assessments</p>	<p><u>UNIT 4</u></p> <p>AZ</p> <ul style="list-style-type: none"> <li>• Compounds containing the carbonyl group</li> <li>• Aromatic chemistry</li> <li>• Amines</li> <li>• Amino Acids</li> </ul> <p>VR</p> <ul style="list-style-type: none"> <li>• Kinetics</li> <li>• Equilibria</li> </ul> <p>PSA assessment</p>	<p><u>UNIT 4</u></p> <ul style="list-style-type: none"> <li>• Simple Harmonic Motion</li> <li>• Gravitational Fields</li> <li>• Electric Fields</li> </ul> <p>Resit UNIT 3 – assessed practical</p>
<b>Term Two</b>	<p>KPA</p> <ul style="list-style-type: none"> <li>• Inheritance and selection</li> <li>• Practice controlled assessments</li> </ul> <p>FFE</p> <ul style="list-style-type: none"> <li>• Photosynthesis</li> <li>• Respiration</li> </ul> <p>+ end of topic assessments</p>	<p>AZ</p> <ul style="list-style-type: none"> <li>• Polymerisation</li> <li>• Organic Synthesis and Analysis</li> </ul> <p>VR</p> <ul style="list-style-type: none"> <li>• Acids, bases and buffers</li> </ul> <p>Resit UNIT 3 – assessed practical</p> <p>PSA assessment</p>	<ul style="list-style-type: none"> <li>• Capacitors</li> <li>• Magnetic Fields</li> <li>• Electromagnetic Induction</li> </ul> <p>UNIT 6 Practice</p>
<b>Term Three</b>	<p><u>UNIT 5</u></p> <p>KPA</p> <ul style="list-style-type: none"> <li>• Response to stimuli</li> <li>• Coordination</li> </ul> <p>FFE</p> <ul style="list-style-type: none"> <li>• Genetic control of protein structure and function</li> <li>• Controlled assessment</li> </ul> <p>+ end of topic assessments</p>	<p>UNIT 6 Practice</p> <p>AZ</p> <ul style="list-style-type: none"> <li>• Structure determination</li> </ul> <p><u>UNIT 5</u></p> <p>VR</p> <ul style="list-style-type: none"> <li>• Thermodynamics</li> <li>• Redox Equilibria – start</li> </ul> <p>UNIT 6 – assessed practical</p> <p>PSA assessment</p>	<p>UNIT 6 Practice</p> <p><u>UNIT 5</u></p> <ul style="list-style-type: none"> <li>• Radioactivity</li> <li>• Nuclear Energy</li> <li>• Thermal Physics</li> <li>• Gases</li> </ul> <p>UNIT 6 – assessed practical</p>
<b>Term Four</b>	<p>KPA</p> <ul style="list-style-type: none"> <li>• Muscle contraction</li> <li>• Practice controlled assessment</li> </ul> <p>FFE</p> <ul style="list-style-type: none"> <li>• Control of gene expression</li> <li>• Controlled assessment</li> </ul> <p>+ end of topic assessments</p>	<p>UNIT 6 – assessed practical</p> <p>AZ</p> <ul style="list-style-type: none"> <li>• Periodicity</li> <li>• The Transition Metals</li> </ul> <p>VR</p> <ul style="list-style-type: none"> <li>• Redox Equilibria – finish</li> <li>• Reactions of</li> </ul>	<p>UNIT 6 – assessed practical</p> <p>Optional Unit – to be decided</p>



		Inorganic Compounds in Aqueous Solution	
		PSA assessment	
<b>Term Five</b>	KPA <ul style="list-style-type: none"> <li>• Homeostasis</li> <li>• Feedback mechanisms</li> </ul> FFE <ul style="list-style-type: none"> <li>• DNA technology</li> </ul> + end of topic assessments	Finishing UNIT 5  Exam Preparation	Finishing Optional Unit  Exam Preparation
<b>Term Six</b>	KPA and FFE <ul style="list-style-type: none"> <li>• Revisiting areas of difficulty</li> </ul>	Exam Preparation	Exam Preparation