

| | Term 1 | | Term 2 | | Term 3 | |
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| Key focus | Unit 3: Science Investigation Skills | Unit 3: Science Investigation Skills | Unit 10: Biological Molecules and Metabolic Pathways | Unit 10: Biological Molecules and Metabolic Pathways | Unit 10: Biological Molecules and Metabolic Pathways | Completion of Coursework |
| Purpose of the scheme | The purpose of this scheme is to develop the essential skills underpinning practical scientific investigations. | The purpose of this scheme is to develop the essential skills underpinning practical scientific investigations. | Understand the structure and function of biological molecules and their importance in maintaining biochemical processes. | Explore the effect of activity on respiration in humans and factors that can affect respiratory pathways. | Explore the factors that can affect the pathways and the rate of photosynthesis in plants. | |
| Pre read (suggested) | BBC iPlayer - Changing Landscapes | Inside Science – BBC Radio 4 | BBC Radio 4 - The Life Scientific, Richard Henderson zooms in on the molecules of life | Research the effects that drug misuse can have on the body e.g., cocaine, ketamine | Maths – $y = mx + c$, scatter graphs, gradients, tangents, areas/volumes of regular shapes Maths – decimals, standard form | |
| Key knowledge and skills | <ul style="list-style-type: none"> Plants in the environment Energy Content and Fuels Enzymes in Action | <ul style="list-style-type: none"> Electrical Circuits Diffusion of Molecules | <ul style="list-style-type: none"> Structure of biological molecules Function and role of biological molecules in living organisms Disease caused by the disruption of biological processes involving biological molecules | <ul style="list-style-type: none"> Stages in the human respiratory pathway Investigate factors that affect respiration Harmful substances and their effect on respiration. Analysis of primary and secondary data | <ul style="list-style-type: none"> Stages in photosynthesis Investigate factors that affect photosynthesis Link the factors that affect photosynthesis to their commercial importance | |
| Key words/ vocabulary | Peptide Link Alpha Amino Acid Enzyme Substrate Complex Limiting Factor Homologous Series | Diffusion Concentration Gradient Semi-Permeable Membrane Absolute Zero | Glycolysis Link Reaction Krebs Cycle Oxidative Phosphorylation Chemiosmosis | Glycolysis Link Reaction Krebs Cycle Oxidative Phosphorylation v | Light Dependent Reaction Electron Transport Chain Coenzyme Calvin Cycle Hexose Sugar | |
| Exam board | Pearson BTEC Level 3 National Extended Certificate in Applied Science | | | | | |
| End point | External Exam | External Exam | Assignment Coursework | Assignment Coursework | Assignment Coursework | Assignment Coursework |
| Assessment method | Mock Exam | Mock Exam | Assignment coursework External Exam | Assignment coursework | Assignment coursework | Assignment coursework |
| Wider reading / links / research | Geography: For ecology we study large scale ecosystems such as biomes; deserts and rainforests, then small scale ecosystems such as sand dunes and ponds. We examine food chains and webs. | Maths –change subject of equation Maths – means, significant figures, scatter graphs, lines of best fit | P.E/BTEC Sport – Respiratory System/Exercise Food Technology – Nutrition/Diabetes/Obesity | P.E/BTEC Sport – Respiratory System/Exercise Food Technology – Nutrition/Diabetes/Obesity | P.E/BTEC Sport – Respiratory System/Exercise Maths – means, significant figures, scatter graphs, lines of best fit | |

Curriculum Map – Applied Science – Year 13



Immanuel College
Church of England Academy

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| Careers links | Field Ecologist Conservation Management | Electrician Laboratory Technician | Paramedic Nurse Dental Nurse Veterinary Nurse | Biomedical Scientists Forensic Scientist | Nutritionist Sports Scientist | |
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