

# Applied Human Biology - Year 13 Curriculum Overview

Sequencing of topics	What knowledge will students develop? (Including key terminology)	What skills will students develop? (Including literacy & numeracy)	Assessment opportunities	Homework opportunities	Personal development (Ursuline Values, Catholic Social Teaching, Cultural Capital, Cross-curricular, Careers)	Curriculum links
<b>Autumn Term 1</b>						
Unit 3: Human Biology and Health Issues	<ul style="list-style-type: none"> <li>○ A1 Understand health issues and associated initiatives and research</li> <li>○ A2 Understand the influence of organisations/individuals on health issues</li> </ul>	<ul style="list-style-type: none"> <li>○ Learners will select and apply knowledge of fundamental human biology, such as cells and tissues, human body systems and functions, immune response and genetics</li> <li>○ Infections</li> <li>○ Health and lifestyle initiatives</li> <li>○ Genetic initiatives</li> <li>○ Medical prevention and treatments</li> <li>○ Learners will understand the influence that different organisations/individuals have on health issues and any associated initiatives and research.</li> <li>○ Government and global organisations</li> <li>○ Non-government organisations, and associations</li> <li>○ Individuals, such as pioneers; service users, such as patients.</li> </ul>	<ul style="list-style-type: none"> <li>○ Targeted Questioning</li> <li>○ End of topic assessment</li> </ul>	<ul style="list-style-type: none"> <li>○ Practice exam questions done throughout</li> <li>○ Research Tasks/Projects</li> <li>○ Flipped Learning worksheets</li> <li>○ Satchel/Neeto Quizzes</li> </ul>	<ul style="list-style-type: none"> <li>○ United in harmony</li> <li>○ Grateful and Generous</li> <li>○ Listening and attentive</li> <li>○ Acting with truth and integrity</li> <li>○ Courageous and resilient</li> <li>○ Dignity of God's people</li> <li>○ Care for Creation</li> <li>○ Community and participation</li> <li>○ Physical</li> <li>○ Personal</li> <li>○ Cultural</li> <li>○ PE</li> <li>○ Sociology</li> <li>○ Psychology</li> <li>○ RE</li> <li>○ Politics</li> <li>○ Biomedical Scientist</li> <li>○ Doctor</li> <li>○ Nurse</li> <li>○ Midwife Paramedic</li> <li>○ Teacher</li> <li>○ Healthcare worker</li> </ul>	<ul style="list-style-type: none"> <li>KS1/2               <ul style="list-style-type: none"> <li>○ Healthy human development</li> </ul> </li> <li>KS3               <ul style="list-style-type: none"> <li>○ Inheritance</li> <li>○ Variation</li> <li>○ Cells</li> </ul> </li> <li>KS4               <ul style="list-style-type: none"> <li>○ Cells and Microscopy</li> <li>○ Stem cells</li> <li>○ Health and disease</li> <li>○ Inherited disorders</li> <li>○ Generic engineering</li> </ul> </li> <li>KS5               <ul style="list-style-type: none"> <li>○ A Level topic 1- Lifestyle health and risk</li> <li>○ Topic 2 Genes and Health</li> <li>○ Topic 6 Infection and Immunity</li> <li>○ BTEC applied Human Bio – Unit 1, 2 and 4</li> </ul> </li> </ul>

**Autumn Term 2**

<p>Unit 3: Human Biology and Health Issues</p>	<ul style="list-style-type: none"> <li>○ B1 Interpret, analyse and evaluate scientific information</li> </ul>	<ul style="list-style-type: none"> <li>○ Learners will interpret, analyse and evaluate scientific information that informs health issues to make judgements on the validity of conclusions drawn, selecting and applying knowledge of scientific methods from the investigation carried out</li> <li>○ Primary and secondary research.</li> <li>○ Qualitative evidence – reference to established sources of information.</li> <li>○ Quantitative evidence – numerical data, including calculations, graphs, tables and statistics.</li> <li>○ Use of accurate/reliable sources of information.</li> <li>○ Trends/patterns/anomalous data and sources of error in data.</li> <li>○ Comparisons of primary and secondary data.</li> <li>○ Validity and reliability, including:                         <ul style="list-style-type: none"> <li>○ sample size</li> <li>○ number and suitability of references to publications</li> <li>○ use of peer review</li> </ul> </li> <li>○ Use and misuse of data – extracting or misquoting data</li> <li>○ Authenticity – date of publication, author/source of information</li> <li>○ article(s)</li> <li>○ Influence of funding source</li> <li>○ Validity of conclusions identified and relevance to the purpose of the investigation.</li> <li>○ Evidence to support conclusions/claims made.</li> </ul>	<ul style="list-style-type: none"> <li>○ Targeted Questioning</li> <li>○ End of topic assessment</li> </ul>	<ul style="list-style-type: none"> <li>○ Practice exam questions done throughout</li> <li>○ Research Tasks/Projects</li> <li>○ Flipped Learning worksheets</li> <li>○ Satchel/Neeto Quizzes</li> </ul>	<ul style="list-style-type: none"> <li>○ Listening and attentive</li> <li>○ Acting with truth and integrity</li> <li>○ Courageous and resilient</li> <li>○ Dignity of God’s people</li> <li>○ Dignity at work</li> <li>○ Care for Creation</li> <li>○ Community and participation</li> <li>○ Peace and reconciliation</li> <li>○ Physical</li> <li>○ Personal</li> <li>○ Moral</li> <li>○ Social</li> <li>○ PE</li> <li>○ Mathematics</li> <li>○ Sociology</li> <li>○ Psychology</li> <li>○ Politics</li> <li>○ Biomedical Scientist</li> <li>○ Doctor</li> <li>○ Research Scientists</li> <li>○ Teacher</li> </ul>	<ul style="list-style-type: none"> <li>KS1/2                         <ul style="list-style-type: none"> <li>○ Recording and presenting data</li> <li>○ Making predictions based on test results</li> <li>○ Using scientific ideas in arguments</li> </ul> </li> <li>KS3                         <ul style="list-style-type: none"> <li>○ Planning to answer scientific questions</li> <li>○ Analysing and evaluating</li> </ul> </li> <li>KS4                         <ul style="list-style-type: none"> <li>○ Communicable disease</li> <li>○ Fighting disease</li> <li>○ Global warming and deforestation</li> </ul> </li> <li>KS5                         <ul style="list-style-type: none"> <li>○ Topic 5 on the Wild Side</li> <li>○ BTEC unit 1, 2 and 4</li> </ul> </li> </ul>
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**Spring Term 1**

<p>Unit 3: Human Biology and Health Issues</p>	<ul style="list-style-type: none"> <li>○ C1 Understand how health issues and initiatives are reported in different media and for different audiences</li> </ul>	<ul style="list-style-type: none"> <li>○ Learners will understand how scientific information is presented in relation to the target audience and reporting medium, and be able to synthesise relevant information for different audiences.</li> <li>○ Reporting medium</li> <li>○ Specialist journals, peer-reviewed journals</li> <li>○ Health science magazines</li> <li>○ Internet and social media</li> <li>○ Broadcasting media and newspaper articles.</li> <li>○ Target audience, general public, healthcare professionals, healthcare users, scientific community, political representatives</li> <li>○ Presentation and reporting: detail and accuracy, level of language used, writing style and correct use of terminology, referencing, technical language and quotations, visuals – use of graphs, diagrams, tables, charts, use of bias, quantity and quality of scientific information, e.g. a scientific article versus tabloid extract.</li> </ul>	<ul style="list-style-type: none"> <li>○ Targeted Questioning</li> <li>○ End of topic assessment</li> </ul>	<ul style="list-style-type: none"> <li>○ Practice exam questions done throughout</li> <li>○ Research Tasks/Projects</li> <li>○ Flipped Learning worksheets</li> <li>○ Satchel/Neeto Quizzes</li> </ul>	<ul style="list-style-type: none"> <li>○ Leading for Justice</li> <li>○ Listening and attentive</li> <li>○ Acting with truth and integrity</li> <li>○ Courageous and resilient</li> <li>○ Dignity of God’s people</li> <li>○ Dignity at work</li> <li>○ Community and participation</li> <li>○ Peace and reconciliation</li> <li>○ Personal</li> <li>○ Moral</li> <li>○ Social</li> <li>○ Ecology</li> <li>○ Mathematics</li> <li>○ Sociology</li> <li>○ Psychology</li> <li>○ Politics</li> <li>○ Biomedical Scientist</li> <li>○ Doctor</li> <li>○ Research Scientists</li> <li>○ Teacher</li> <li>○ Politician</li> <li>○ Ecologist</li> <li>○ Data Analyst</li> <li>○ Journal editor</li> </ul>	<p>KS1/2</p> <ul style="list-style-type: none"> <li>○ Planning scientific enquiries</li> <li>○ Control variables</li> <li>○ Taking measurements</li> </ul> <p>KS3</p> <ul style="list-style-type: none"> <li>○ Planning to answer scientific questions</li> <li>○ Analysing and evaluating</li> <li>○ Critiquing claims and justifying opinions</li> <li>○ Risks and benefits</li> <li>○ Reviewing theories</li> </ul> <p>KS4</p> <ul style="list-style-type: none"> <li>○ Communicable disease</li> <li>○ Fighting disease</li> <li>○ Global warming and deforestation</li> </ul> <p>KS5</p> <ul style="list-style-type: none"> <li>○ Topic 5 on the Wild Side</li> <li>○ BTEC unit 1, 2 and 4</li> </ul>
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**Spring Term 2**

<p>Unit 4: Functional Physiology</p>	<p>A Examine the structure, function and disorders of the muscular and skeletal systems</p>	<p>Muscular tissue</p> <ul style="list-style-type: none"> <li>○ Characteristics and ultrastructure of muscular tissue, smooth (visceral/involuntary) striated (skeletal/voluntary), cardiac</li> <li>○ Structure of the following-sarcolemma, sarcoplasmic reticulum, motor end plate,</li> </ul>	<ul style="list-style-type: none"> <li>○ Targeted Questioning</li> <li>○ End of topic assessment</li> <li>○ Learning Aim A Assignment</li> </ul>	<ul style="list-style-type: none"> <li>○ Practice exam questions done throughout</li> <li>○ Research Tasks/Projects</li> <li>○ Flipped Learning worksheets</li> <li>○ Satchel/Neeto Quizzes</li> </ul>	<ul style="list-style-type: none"> <li>○ Leading for Justice</li> <li>○ Grateful and Generous</li> <li>○ Listening and attentive</li> <li>○ Acting with truth and integrity</li> <li>○ Courageous and resilient</li> </ul>	<p>KS1/2</p> <ul style="list-style-type: none"> <li>○ Healthy human development</li> <li>○ Circulatory system</li> <li>○ Human development</li> </ul> <p>KS3</p>
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		<p>muscle fibres, adenosine triphosphate (ATP), myosin, actin, myofibrils.</p> <ul style="list-style-type: none"> <li>○ Function of the muscular system, movement, levers, motor units, antagonistic pairs</li> <li>○ Attachment of muscles: to bone via tendons, to fascia.</li> <li>○ Contraction of muscle: contraction cycle, motor neurons, neuromuscular junctions, neurotransmitters, sliding filament theory, electrochemical gradient, calcium ions.</li> </ul> <p>Skeletal system</p> <ul style="list-style-type: none"> <li>○ Structure of skeletal system to include major bones</li> <li>○ Structure/ultrastructure and function of bones to include: long bones, short bones, flat bones, irregular bones, sesamoid bones, basic structure of a typical long bone to include, articular cartilage, spongy bone, bone marrow, endosteum, compact bone, periosteum, medullary cavity and blood vessels</li> <li>○ Functions of the skeletal system</li> <li>○ Structure and function of tendons, ligaments and cartilage</li> <li>○ Classification of joints: fibrous/fixed, e.g. skull, cartilaginous/slightly moveable, e.g. sternum, pubic symphysis, mandible</li> </ul> <p>Disorders of muscular and skeletal systems</p>			<ul style="list-style-type: none"> <li>○ Discerning and Joyful</li> <li>○ Dignity of God's people</li> <li>○ Dignity at work</li> <li>○ Community and participation</li> <li>○ Peace and reconciliation</li> <li>○ Solidarity</li> <li>○ Moral</li> <li>○ Social</li> <li>○ Cultural</li> <li>○ PE</li> <li>○ Mathematics</li> <li>○ Sociology</li> <li>○ Psychology</li> <li>○ Politics</li> <li>○ Biomedical Scientist</li> <li>○ Doctor</li> <li>○ Research Scientists</li> <li>○ Physiotherapist</li> <li>○ Radiographer</li> </ul>	<ul style="list-style-type: none"> <li>○ Movement</li> <li>○ Breathing</li> <li>○ Digestion</li> <li>○ Skeletal system</li> <li>○ Muscular system</li> </ul> <p>KS4</p> <ul style="list-style-type: none"> <li>○ Cell division – mitosis</li> <li>○ Cell organisation</li> <li>○ Enzymes &amp; digestion</li> <li>○ The lungs</li> <li>○ Circulatory system</li> <li>○ Health and disease</li> </ul> <p>KS5</p> <ul style="list-style-type: none"> <li>○ Topic 1 Lifestyle, health and risk</li> <li>○ Topic 7 Run for your life</li> <li>○ BTEC unit 1</li> </ul>
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**Summer Term 1**

<p>Unit 4: Functional Physiology</p>	<p>B Understand the structure, function and disorders of the endocrine and nervous systems</p>	<p>Endocrine system</p> <ul style="list-style-type: none"> <li>○ Target organs, ductless glands, hormones, transported in blood.</li> <li>○ Hypothalamus – control of pituitary gland via releasing hormones, control of daily rhythms.</li> <li>○ Pituitary gland – control of growth, function of sex organs, osmoregulation.</li> <li>○ Thyroid gland – regulation of growth and function of many body systems, role in regulation of blood calcium levels.</li> <li>○ Pancreas – regulation of blood sugar via production of insulin and glucagon.</li> <li>○ Disorders of the endocrine system</li> <li>○ Under production of hormones, e.g. Cushing’s disease, hypothyroidism. • Overproduction of hormones, e.g. gigantism (acromegaly), polycystic ovary syndrome.</li> <li>○ Nervous System Learners will understand the components, organisation and role of <ul style="list-style-type: none"> <li>○ The central nervous system (CNS): o brain and spinal cord, motor neurons,</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>○ Targeted Questioning</li> <li>○ End of topic assessment</li> <li>○ Learning Aim B Assignment</li> </ul>	<ul style="list-style-type: none"> <li>○ Practice exam questions done throughout</li> <li>○ Research Tasks/Projects</li> <li>○ Flipped Learning worksheets</li> <li>○ Satchel/Neeto Quizzes</li> </ul>	<ul style="list-style-type: none"> <li>○ Leading for Justice</li> <li>○ Grateful and Generous</li> <li>○ Listening and attentive</li> <li>○ Acting with truth and integrity</li> <li>○ Courageous and resilient</li> <li>○ Discerning and Joyful</li> <li>○ Dignity of God’s people</li> <li>○ Dignity at work</li> <li>○ Community and participation</li> <li>○ Peace and reconciliation</li> <li>○ Solidarity</li> <li>○ Physical</li> <li>○ Moral</li> <li>○ Social</li> <li>○ Spiritual</li> <li>○ PE</li> <li>○ RE</li> <li>○ Mathematics</li> <li>○ Psychology</li> <li>○ Politics</li> <li>○ Health and Social Care</li> <li>○ Biomedical Scientist</li> <li>○ Doctor</li> </ul>	<p>KS1/2</p> <ul style="list-style-type: none"> <li>○ Healthy human development</li> <li>○ Digestion</li> </ul> <p>KS3</p> <ul style="list-style-type: none"> <li>○ Digestion</li> <li>○ Human Reproduction</li> </ul> <p>KS4</p> <ul style="list-style-type: none"> <li>○ Enzymes &amp; digestion</li> <li>○ Stem cells</li> <li>○ The nervous system</li> <li>○ The brain</li> <li>○ The eye</li> <li>○ The endocrine system</li> <li>○ Controlling blood glucose</li> <li>○ Puberty and menstrual cycle</li> <li>○ Adrenalin and thyroxine Plant hormones</li> </ul> <p>KS5</p> <ul style="list-style-type: none"> <li>○ Topic 7 run for your life</li> </ul>
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		<ul style="list-style-type: none"> <li>sensory neurons, nerve cells</li> <li>The peripheral nervous system (PNS): o nerves and ganglia outside the brain and spinal cord o somatic nervous system o autonomic nervous system.</li> <li>The parasympathetic nervous system.</li> <li>The sympathetic nervous system.</li> <li>Disorders of the nervous system Learners will understand the causes and symptoms of: Parkinson's disease, multiple sclerosis (MS), motor neurone disease.</li> </ul>			<ul style="list-style-type: none"> <li>Research Scientists</li> <li>Physiotherapist</li> <li>Radiographer</li> <li>Paramedic</li> <li>Councilor</li> <li>Nurse</li> <li>Midwife</li> <li>Geneticist</li> <li>Care worker</li> </ul>	<ul style="list-style-type: none"> <li>Topic 3 voice of the genome</li> <li>Topic 2 Genes and health</li> </ul>
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**Summer Term 2**

Unit 4: Functional Physiology	C Understand the role of homeostasis in controlling and coordinating the body systems	<p>Homeostasis Learners will understand the purpose of homeostasis in relation to</p> <ul style="list-style-type: none"> <li>Terminology, optimum, variable, stimulus, receptors/sensors, control centres, effectors, feedback</li> <li>Negative feedback loops, blood pressure, body fluids (osmoregulation), gas concentration, blood sugar levels</li> <li>Positive feedback loops, blood clotting, labour contractions, lactation.</li> <li>Interrelationship between nervous and endocrine system</li> <li>Role of the autonomic nervous system, breathing</li> <li>Hypothalamus, link between endocrine and nervous system</li> </ul>	<ul style="list-style-type: none"> <li>Targeted Questioning</li> <li>End of topic assessment</li> <li>Learning Aim C Assignment</li> </ul>	<ul style="list-style-type: none"> <li>Practice exam questions done throughout</li> <li>Research Tasks/Projects</li> <li>Flipped Learning worksheets</li> <li>Satchel/Neeto Quizzes</li> </ul>	<ul style="list-style-type: none"> <li>Grateful and Generous</li> <li>Listening and attentive</li> <li>Acting with truth and integrity</li> <li>Courageous and resilient</li> <li>Discerning and Joyful</li> <li>Dignity of God's people</li> <li>Community and participation</li> <li>Peace and reconciliation</li> <li>Solidarity</li> <li>Physical</li> <li>Social</li> <li>Spiritual</li> <li>PE</li> </ul>	<p>KS1/2</p> <ul style="list-style-type: none"> <li>Healthy human development</li> <li>Digestion</li> </ul> <p>KS3</p> <ul style="list-style-type: none"> <li>Digestion</li> <li>Human Reproduction</li> </ul> <p>KS4</p> <ul style="list-style-type: none"> <li>The Nervous System</li> <li>Homeostasis</li> <li>Enzymes &amp; digestion</li> <li>Stem cells</li> <li>The nervous system</li> <li>The brain</li> <li>The eye</li> </ul>
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