

Year 12 Half Term 4 Curriculum

Subject	Half Term 4 – Topic/Summary of Powerful Knowledge
English Literature	<p><u>Introduction to Crime:</u></p> <ul style="list-style-type: none"> • Recall and deepening of knowledge of Victorian Era (class system, workhouses and Poor Law, child labour, voyeurism, science, supernatural, religion, poverty) • Deepening of understanding of Crime fiction genre: Victorian, Golden-Age, Hard Boiled Detective and Modern • The aftermath of WW1 • The Roaring 20s and Prohibition • The Great Depression • Post-Depression • Understanding of the tropes of Crime Fiction including: <ul style="list-style-type: none"> • Traditional plot, archetypal character and themes, authorial methods, structure and genre through close textual analysis • Begin to understand the different ways to read literature and how to analyse a text using the following lenses: Marxist, feminist, post-colonial. <p><i>Set texts:</i> Unseen Crime extracts (various) Crime Poetry (Crabbe, Browning, Wilde) <i>Oliver Twist</i> (Dickens)</p>
Maths	<p><u>Hypothesis testing</u></p> <ul style="list-style-type: none"> • Hypothesis • Critical regions and values • One tailed tests • Two tailed tests <p><u>Exponentials and Logarithms</u></p> <ul style="list-style-type: none"> • Sketch exponential graphs. • Use an interpret models that use exponential functions. • Be able to differentiate e^{kx}. • Understand the log function and use laws of logs. • Use logarithms to estimate values of constants in non-linear models. <p><u>Differentiation</u></p> <ul style="list-style-type: none"> • Find the derivative of polynomials. • Find equations of tangents and normal to curves. • Identify increasing and decreasing functions. • Find and understand the second derivative $\frac{d^2y}{dx^2}$ or $f''(x)$ • Find stationary points and determine their nature. • Sketch a gradient function. • Model real-life problems. <p><u>Integration</u></p> <ul style="list-style-type: none"> • Find y given $\frac{dy}{dx}$ • Evaluate definite integrals, and hence the area under a curve. • Find areas bound between two different lines.

Science	<p>Biology</p> <p><u>Mass Transport in Animals and Plants</u></p> <ul style="list-style-type: none"> • The haemoglobins are a group of chemically similar molecules found in many different organisms. • Haemoglobin is a protein with a quaternary structure. • The role of haemoglobin and red blood cells in the transport of oxygen. The loading, transport and unloading of oxygen in relation to the oxyhaemoglobin dissociation curve. • The cooperative nature of oxygen binding to show that the change in shape of haemoglobin caused by binding of the first oxygens makes the binding of further oxygens easier. The effects of carbon dioxide concentration on the dissociation of oxyhaemoglobin (the Bohr effect). • Many animals are adapted to their environment by possessing different types of haemoglobin with different oxygen transport properties. • The general pattern of blood circulation in a mammal. Names are required only of the coronary arteries and of the blood vessels entering and leaving the heart, lungs and kidneys. • The gross structure of the human heart. Pressure and volume changes and associated valve movements during the cardiac cycle that maintain a unidirectional flow of blood. • The structure of arteries, arterioles and veins in relation to their function. • The structure of capillaries and the importance of capillary beds as exchange surfaces. The formation of tissue fluid and its return to the circulatory system. • Required practical 5: Dissection of animal or plant gas exchange system or mass transport system or of organ within such a system. • Xylem as the tissue that transports water in the stem and leaves of plants. The cohesion-tension theory of water transport in the xylem. • Phloem as the tissue that transports organic substances in plants. The mass flow hypothesis for the mechanism of translocation in plants. The use of tracers and ringing experiments to investigate transport in plants. <p><u>Cell recognition and the immune system</u></p> <p>Each type of cell has specific molecules on its surface that identify it. These molecules include proteins and enable the immune system to identify:</p> <ul style="list-style-type: none"> • pathogens • cells from other organisms of the same species • abnormal body cells • toxins. <p>Definition of antigen. The effect of antigen variability on disease and disease prevention.</p> <p>Phagocytosis of pathogens. The subsequent destruction of ingested pathogens by lysozymes.</p> <p>The response of T lymphocytes to a foreign antigen (the cellular response).</p> <ul style="list-style-type: none"> • The role of antigen-presenting cells in the cellular response. • The role of helper T cells (T_H cells) in stimulating cytotoxic T cells (T_C cells), B cells and phagocytes. The role of other T cells is not required. <p>The response of B lymphocytes to a foreign antigen, clonal selection and the release of monoclonal antibodies (the humoral response).</p> <ul style="list-style-type: none"> • Definition of antibody. • Antibody structure.
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	<ul style="list-style-type: none"> • The formation of an antigen-antibody complex, leading to the destruction of the antigen, limited to agglutination and phagocytosis of bacterial cells. • The roles of plasma cells and of memory cells in producing primary and secondary immune responses. <p>The use of vaccines to provide protection for individuals and populations against disease. The concept of herd immunity. The differences between active and passive immunity.</p> <p>Physics</p> <p>Current electricity</p> <ul style="list-style-type: none"> • Basics of electricity • Current–voltage characteristics • Resistivity • Circuits • Potential divider • Electromotive force and internal resistance <p>Refraction, diffraction and interference</p> <ul style="list-style-type: none"> • Interference • Diffraction • Refraction at a plane surface
History	<ul style="list-style-type: none"> • The Vietnam War – why did the US lose the war? • Nixon and Vietnamisation
Geography	<p>Population and the environment:</p> <ul style="list-style-type: none"> • Environment and disease • Population change • Population pyramids • Population ecology
Art	<p><u>A-Level - Personal Investigation</u></p> <ul style="list-style-type: none"> • Mixed Media and Printmaking workshops. Review and refine ideas. • Continuation of collation of primary and secondary source material. • Continue research of new and current artists. Written notes and critical analysis. <p><u>BTEC - Unit 1- Visual Recording and Communication – External Unit</u></p> <ul style="list-style-type: none"> • Development of ideas including written notes and annotation.
Business	<p>Unit 1: Exploring Enterprise</p> <p>Students will explore how the market structure and influences on supply and demand affect the pricing and output decisions for a given business.</p> <p>Unit 3 Personal & Business Finance</p> <p>Complete statements of comprehensive income</p> <ul style="list-style-type: none"> • Calculation of gross profit, cost of goods sold expenses and net profit • Adjustments for depreciation (straight-line and reducing balance) • Adjustments for prepayments, accruals • Interpretation, analysis and evaluation of statements <p>Complete statements of financial position</p>

	<ul style="list-style-type: none"> Using a vertical presentation to include non-current assets; current assets; current liabilities; net current assets/liabilities; non-current liabilities; net assets; and capital Interpretation, analysis, and evaluation of statements <p>Evaluate a business's performance</p> <p>Calculation, interpretation, analysis and evaluation of profitability, liquidity and efficiency ratios.</p>		
Computing	<p>Online systems – students will describe digital devices that form part or all of IT systems such as multifunctional devices, personal computers, mobile devices, servers, entertainment systems. digital cameras (still, video), navigation systems, data capture and collection systems, communication devices and systems.</p> <p>Describe the function and use of digital devices for:</p> <p>education and training</p> <p>personal</p> <p>social</p> <p>retail</p> <p>creative tasks</p> <p>Organisational use including business operations, internal and external dissemination of information</p> <ul style="list-style-type: none"> the features of online communities and the implications of their widespread use for organisations and individuals ways of communicating and interacting with online communities: social media, blog, microblog, vlog, wiki, chatrooms, instant messaging, podcasts, forums 		
Film Studies	<p><u>American Film since 2005</u></p> <ul style="list-style-type: none"> Genre study – Western/Thriller and Coming of Age Active and Passive spectatorship Reception Theory Political ideology and modern America Representations of gender, race, age and identity <p><i>Set texts:</i></p> <p><i>No Country for Old Men (Coen Brothers, 2007)</i></p> <p><i>Captain Fantastic (Ross, 2015)</i></p>		
Games Design	<p>Students will apply knowledge and understanding of media production process in context, demonstrating how constraints affect decisions and the ability to adapt to changes in requirements.</p> <ul style="list-style-type: none"> Communication skills. Focus groups and electronic communication Be able to communicate a message via a chosen / or range of mediums They develop demographical skills Legal restrictions when working with Media are developed which includes H&S, defamation act, and equality act 		
Health	<table border="1"> <tr> <td>Extended Certificate (Single HSC)</td> <td>Diploma (Double HSC)</td> </tr> </table>	Extended Certificate (Single HSC)	Diploma (Double HSC)
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	<p><u>Human lifespan development – Unit 1</u></p> <ul style="list-style-type: none"> • Predictable / Unpredictable life events • Physical changes of ageing • Psychological changes of ageing • Theories of ageing • An ageing population <p><u>Meeting individual needs – Unit 5</u></p> <ul style="list-style-type: none"> • Causes of and overcoming conflict 	<p><u>Human lifespan development – Unit 1</u></p> <ul style="list-style-type: none"> • Predictable / Unpredictable life events • Physical changes of ageing • Psychological changes of ageing • Theories of ageing • An ageing population <p><u>Meeting individual needs – Unit 5</u></p> <ul style="list-style-type: none"> • Causes of and overcoming conflict <p><u>Principles of safe practice – Unit 7</u></p> <ul style="list-style-type: none"> • Complaints procedures in HSC <p><u>Physiological disorders – Unit 14</u></p> <ul style="list-style-type: none"> • Treatment, care and support for diabetes
Music	<p><u>Unit 3: Ensemble Music Performance-Set Brief Examination</u></p> <p><u>Assessment Objective 3</u></p> <ul style="list-style-type: none"> • Planning rehearsals for ensembles. • Setting up rehearsal space. • Selecting appropriate repertoire for skill set of ensemble. • Preparing and learning individual parts. • Target setting for rehearsal sessions. • Participating in rehearsals for ensembles • Warm-up and tuning up. • Communication within the ensemble • Giving and accepting constructive criticism. • Maintaining tempo. • Responding to musical developments • Demonstrating/vocalising parts. • Identifying problems and inaccuracies while maintaining own part. • Identifying personal and group strengths and weaknesses. <p><u>Assessment Objective 4</u></p> <ul style="list-style-type: none"> • Performance skills as part of an ensemble include intonation, instrumental tuning, tightness, tempo, handling of section changes, beginnings and endings. • Technical proficiency. • Musical expression including interpretation, balance, phrasing and dynamics. • Critical listening and response to requirements. • Adapting to mistakes and unexpected occurrences. • Maintaining stage discipline. • Physical performance and presentation skills for an ensemble include entrance and exit from stage, communication to the audience and with other members of the ensemble. <p><u>Assessment Objective 5</u></p>	

	<ul style="list-style-type: none"> • How musical elements are applied within a piece; timbre, rhythm, melody, harmony, form, texture and dynamics. • Review and reflect on the effectiveness of the process with evaluation of the Individual process for learning parts, Individual contribution to rehearsal, management of time, tasks and available resources, suitability of arrangements and parts and execution of group rehearsal skills. • Review and reflect on the effectiveness of the performance including the execution of group performance skills, clarity of interpretation, creativity and imagination displayed, production values, identification of strengths and areas for development, review of performance against original plan and audience response and feedback.
PE	<u>Exam Unit</u> <u>Unit 1 – Body systems and the effects of physical activity</u> <ul style="list-style-type: none"> • LO5: Understand the different energy systems in relation to exercise and physical activity <u>Coursework Unit</u> <u>Unit 2 – Sports coaching and activity leadership</u> <ul style="list-style-type: none"> • LO6: Be able to deliver sports and activity sessions
RE/PSHE	<u>Post-18 Options:</u> <ul style="list-style-type: none"> • What are apprenticeships? • How to write an effective CV. • Interviews • Student finance • UCAS • Personal statement
Photography	<u>Personal Project</u> This part of the course the students select a topic for their personal project and produce a body of work that explores their chosen topic.
Psychology	<u>Unit 2 – LA. B</u> <ul style="list-style-type: none"> • Qualitative research methods – data collection, key features and issues in this type of research • Quantitative research methods – data collection, key features and issues in this type of research • Mixed methods – questionnaires and interviews • Developing a research proposal
Criminology	<u>Unit 2 – exam unit</u> <ul style="list-style-type: none"> • Individualistic theories – learning theories, psychodynamic, psychological theories • Sociological theories – social structure, interactionism, realism • Situations relating to different types of crime and individual criminal behaviour • Effectiveness of criminological theories – individualistic, biological and sociological
Sociology	<u>Families and Households</u>

- Demographic trends in the United Kingdom since 1900: birth rates, death rates, family size, life expectancy, ageing population, and migration and globalisation.

Research Methods

- Quantitative and qualitative methods of research; research design
- Sources of data, including questionnaires, interviews, participant and non-participant observation, experiments, documents and official statistics
- The distinction between primary and secondary data, and between quantitative and qualitative data
- The relationship between positivism, interpretivism and sociological methods; the nature of 'social facts'
- The theoretical, practical and ethical considerations influencing choice of topic, choice of method(s) and the conduct of research.