

Year 13 Half Term 5 Curriculum

| Subject | Half Term 5 – Topic/Summary of Powerful Knowledge |
|--------------------|---|
| English Literature | <p>Exam preparation and revision:</p> <p><u>Paper 1 Aspects of Tragedy – Section A and B: Othello</u> (using May 2019 Paper and June 2018 Paper)</p> <ul style="list-style-type: none"> • Retrieve and apply conventions of a tragedy • Revise concepts of Aristotelian (Poetics) and Shakespearean tragedy • Deepening of contextual knowledge of late Elizabethan/Early Jacobean times: Great Chain of Being, role of men and women, racism. • Deepen understanding of: Plot, character, dramatic methods, structure and genre through analysis of the text. <p><u>Paper 2 Elements of Crime Writing – Section B and C:</u> (using June 2018 Paper and November 2021 Paper)</p> <ul style="list-style-type: none"> • Deepening of knowledge of Victorian Era (class system, workhouses and Poor Law, child labour, voyeurism, science, supernatural, religion, poverty) • Deepening understanding of pre and post-war Britain including contextual understanding of WW2 • Analysing the texts through literary concepts including postmodernism and unreliable narrative • Respond to critical perspectives – including the development of a three-point plan, linking your thesis statement to topic sentences. • Craft a cohesive argument - including nominalisation to shape academic voice, using discourse markers to shape the direction of an essay, using counter argument effectively, integrating critical and contextual material. • Embed quotes, use academic vernacular and employ subject specific vocabulary |
| Maths | <u>Exam preparation</u> |
| Science | <p>Biology</p> <ul style="list-style-type: none"> • Homeostasis • Homeostasis in mammals involves physiological control systems that maintain the internal environment within restricted limits. • The importance of maintaining a stable core temperature and stable blood pH in relation to enzyme activity. • The importance of maintaining a stable blood glucose concentration in terms of availability of respiratory substrate and of the water potential of blood. • Negative feedback restores systems to their original level. • The possession of separate mechanisms involving negative feedback controls departures in different directions from the original state, giving a greater degree of control. • The factors that influence blood glucose concentration. • The role of the liver in glycogenesis, glycogenolysis and gluconeogenesis. • The action of insulin by: <ul style="list-style-type: none"> • attaching to receptors on the surfaces of target cells • controlling the uptake of glucose by regulating the inclusion of channel proteins in the surface membranes of target cells • activating enzymes involved in the conversion of glucose to glycogen. |

- The action of glucagon by:
 - attaching to receptors on the surfaces of target cells
 - activating enzymes involved in the conversion of glycogen to glucose
 - activating enzymes involved in the conversion of glycerol and amino acids into glucose.
- The role of adrenaline by:
 - attaching to receptors on the surfaces of target cells
 - activating enzymes involved in the conversion of glycogen to glucose.
- The second messenger model of adrenaline and glucagon action, involving adenylate cyclase, cyclic AMP (cAMP) and protein kinase.
- The causes of types I and II diabetes and their control by insulin and/or manipulation of the diet.
- **Students should be able to** evaluate the positions of health advisers and the food industry in relation to the increased incidence of type II diabetes.
- Osmoregulation as control of the water potential of the blood.
- The roles of the hypothalamus, posterior pituitary and antidiuretic hormone (ADH) in osmoregulation.
- The structure of the nephron and its role in:
 - the formation of glomerular filtrate
 - reabsorption of glucose and water by the proximal convoluted tubule
 - maintaining a gradient of sodium ions in the medulla by the loop of Henle
 - reabsorption of water by the distal convoluted tubule and collecting ducts
- Gene technology-
 - The use of labelled DNA probes and DNA hybridisation to locate specific alleles of genes.
 - The use of labelled DNA probes that can be used to screen patients for heritable conditions, drug responses or health risks.
 - The use of this information in genetic counselling and personalised medicine.
- Genetic fingerprinting
 - An organism's genome contains many variable number tandem repeats (VNTRs). The probability of two individuals having the same VNTRs is very low.
 - The technique of genetic fingerprinting in analysing DNA fragments that have been cloned by PCR, and its use in determining genetic relationships and in determining the genetic variability within a population.
 - The use of genetic fingerprinting in the fields of forensic science, medical diagnosis, animal and plant breeding.
- **Students should be able to:**
 - explain the biological principles that underpin genetic fingerprinting techniques
 - interpret data showing the results of gel electrophoresis to separate DNA fragments
 - explain why scientists might use genetic fingerprinting in the fields of forensic science, medical diagnosis, animal and plant breeding.

- **Organic synthesis**
- The synthesis of an organic compound can involve several steps.
- **Students should be able to:**
- explain why chemists aim to design processes that do not require a solvent and that use non-hazardous starting materials
- explain why chemists aim to design production methods with fewer steps that have a high percentage atom economy
- use reactions in this specification to devise a synthesis, with up to four steps, for an organic compound.
- **Nuclear magnetic resonance spectroscopy**
- Appreciation that scientists have developed a range of analytical techniques which together enable the structures of new compounds to be confirmed.
- Nuclear magnetic resonance (NMR) gives information about the position of ^{13}C or ^1H atoms in a molecule.
- ^{13}C NMR gives simpler spectra than ^1H NMR.
- The use of the δ scale for recording chemical shift.
- Chemical shift depends on the molecular environment.
- Integrated spectra indicate the relative numbers of ^1H atoms in different environments.
- ^1H NMR spectra are obtained using samples dissolved in deuterated solvents or CCl_4
- The use of tetramethylsilane (TMS) as a standard.
- **Students should be able to:**
- explain why TMS is a suitable substance to use as a standard
- use ^1H NMR and ^{13}C NMR spectra and chemical shift data from the Chemistry Data Booklet to suggest possible structures or part structures for molecules
- use integration data from ^1H NMR spectra to determine the relative numbers of equivalent protons in the molecule
- use the n+1 rule to deduce the spin-spin splitting patterns of adjacent, non-equivalent protons, limited to doublet, triplet and quartet formation in aliphatic compounds.
- **Chromatography**
- Chromatography can be used to separate and identify the components in a mixture.
- Types of chromatography include:
- thin-layer chromatography (TLC) – a plate is coated with a solid and a solvent moves up the plate
- column chromatography (CC) – a column is packed with a solid and a solvent moves down the column
- gas chromatography (GC) – a column is packed with a solid or with a solid coated by a liquid, and a gas is passed through the column under pressure at high temperature.
- Separation depends on the balance between solubility in the moving phase and retention by the stationary phase.
- Retention times and R_f values are used to identify different substances.
- The use of mass spectrometry to analyse the components separated by GC.
- **Students should be able to:**
- calculate R_f values from a chromatogram

| | |
|--------------|--|
| | <ul style="list-style-type: none"> compare retention times and R_f values with standards to identify different substances. <p>Required practical 12 Separation of species by thin-layer chromatography.</p> <p>Physics</p> <ul style="list-style-type: none"> Revision and exam prep |
| History | <p>Exam preparation for Civil rights Paper</p> <ul style="list-style-type: none"> Past paper reviews, Mock exams Timed exam questions Revision techniques Exam preparation for Cold War in Asia exam |
| Art | <p><u>A-Level - Completion of outstanding coursework tasks</u></p> <ul style="list-style-type: none"> Presentation of exam and coursework for moderation. <p><u>BTEC - Unit 3 – The Creative Process</u></p> <ul style="list-style-type: none"> Review how use of the creative process developed own art and design practice. Re-sit Unit 2 external exam if necessary. |
| Business | <p><u>Reflect on the recruitment and selection process and your individual performance</u></p> <ul style="list-style-type: none"> Complete a SWOT analysis on performance in the interviewing activities. Prepare a personal skills development plan for future interview situations |
| Computing | <p><u>Project management – Students will need to effectively manage their project, using agreed timescales, communicate with the client and record their progress.</u></p> <ul style="list-style-type: none"> Plan a project using key dates and milestone Communicate effectively via email and meeting with a client Evaluate the effectiveness of the project |
| Film Studies | <p><u>Production and Evaluative Analysis</u></p> <ul style="list-style-type: none"> Finalise short film and written evaluative analysis <p><u>Revision and Exam technique</u></p> <ul style="list-style-type: none"> All texts and all study areas |
| Games Design | <p><u>Learners will produce and check a digital game in a specific genre. They will create level designs and source/ prepare assets.</u></p> <p>Students will understand compression, conventions, and animation techniques.</p> <p>They will use coding/ programmes to develop their game.</p> <p>Learner will evaluate and use data analysis to improve their work.</p> <p>Students will use test plans to ensure their game is fully functional using the game authoring software they have used.</p> <p>Functionality, rules, goals and rewards must be clear with balance and flow relating to the client brief and target audience.</p> <ul style="list-style-type: none"> Using game engine software to create a 2d app game. Using the internet to source and use assets |

| | | |
|-------------|--|--|
| | <ul style="list-style-type: none"> Using programming software to develop code for the game. Microsoft Word or Excel to create a thorough test plan Microsoft Word to create an evaluation | |
| Health | <u>Extended Certificate (Single HSC)</u> <u>Meeting individual needs – Unit 5</u> <ul style="list-style-type: none"> Use of policy framework (to include Health Action Plan & NHS Patient Experience) Information management and confidentiality | <u>Diploma (Double HSC)</u> <u>Meeting individual needs – Unit 5</u> <ul style="list-style-type: none"> Communication techniques Personalisation Information management and confidentiality <u>Principles of safe practice – Unit 7</u> <ul style="list-style-type: none"> Bespoke curriculum based on coursework needs for LAA, LAB, LAC & LAD |
| Music | <u>Unit 2: Professional Practice in the Music Industry-External Examination</u> <u>A03</u> <ul style="list-style-type: none"> Communicating and developing negotiation skills-networking, making contacts and meeting people with skills who can offer services and help with your business, gain work experience, internship opportunities, maintaining your network, collecting data, using technology to maintain contacts and promote yourself, sharing information and working with others to make sure a project is deliverable, sharing responsibility and costs, creating an online presence. Working on a freelance basis and self-employment-advantages and disadvantages of being self-employed, work/life balance, setting targets. Funding sources-banks and business advice centres, chamber of commerce, Young Enterprise schemes, agencies and social enterprises that support business start-ups and the arts. <u>A04</u> <ul style="list-style-type: none"> Preparing ideas Exploring ideas and opportunities-carrying out appropriate research, using a creative approach, responding to a given brief, being aware of the audience in planning, time management and meeting deadlines. Presenting ideas Putting your ideas forward-forms of presenting, the bidding process, supporting statements, personal profile and justifying your ideas, applying research to given scenarios, ability to explain and justify ideas in a rationale and demonstrating professional practice. | |
| PE | <u>Revision for Resit</u> <ul style="list-style-type: none"> Unit 1 - Body systems and the effects of physical activity Unit 3 – Sports organization and development | |
| Photography | <u>Externally set exam</u> <ul style="list-style-type: none"> During this period students are guided through the process and offered advice and guidance in completing their exam unit. Students need to evidence all 4 of the assessment objectives in this unit. | |
| RE/PSHE | <u>Exam Support:</u> <ul style="list-style-type: none"> How to deal with stress Support available in school | |
| Psychology | <u>Unit 6 – LA.C</u> <u>Treatment</u> | |

| | |
|-------------|---|
| | <ul style="list-style-type: none"> • Psychodynamic therapy • Behavioural therapies • Cognitive therapies • Family systems therapies • Drug therapies <p>Mental health professionals</p> <ul style="list-style-type: none"> • Diagnosing and treating disorders • Mental health workers • Professionals in educational organisations • Support groups |
| Sociology | <p><u>All topics</u></p> <ul style="list-style-type: none"> • Completion of outstanding elements of topics • Revision and exam preparation focusing on Families and Households, research methods and Education with Methods in Context. |
| Hospitality | <p><u>Principles of Supervising Customer Service Performance in Hospitality, Leisure, Travel and Tourism</u></p> <ul style="list-style-type: none"> • Understand how to develop a customer service culture within their business • Understand how to build teams and motivate colleagues through techniques such as onsite coaching • Understand how to effectively monitor and communicate levels of customer service performance |