

Year 13 Half Term 2 Curriculum

Subject	Half Term 2 – Topic/Summary of Powerful Knowledge
English Literature	<p><u>Theory and Independence - NEA (7 weeks):</u></p> <ul style="list-style-type: none"> • Feminist theory - noted feminist figures, the development of the movement and the importance of literature to the movement. • The literary canon: the conception, history and significance. • Marxist theory - meaning behind movement, prolific figures and importance of literature in movement. • Narrative theory - structure, narrative voice and perspective, and gaps in narrative. <p><i>Selected texts from Summer Reading List</i> <i>The Critical Anthology (AQA)</i></p>
Maths	<p><u>Trigonometric functions</u></p> <ul style="list-style-type: none"> • Secant, cosecant and cotangent • Graphs of $\sec x$, $\operatorname{cosec} x$ and $\cot x$ • Using $\sec x$, $\operatorname{cosec} x$ and $\cot x$ • Trigonometric identities • Inverse trigonometric functions <p><u>Trigonometry and modelling</u></p> <ul style="list-style-type: none"> • Addition formulae • Using the angle addition formulae • Double angle formulae • Solving trigonometric equations • Simplifying $a\cos x \pm b\sin x$ • Proving trigonometric identities • Modelling with trigonometric functions <p><u>Parametric Equations</u></p> <ul style="list-style-type: none"> • Parametric equations • Using trigonometric identities • Curve sketching • Points of intersection • Modelling with parametric equations <p><u>Moments</u></p> <ul style="list-style-type: none"> • Moments • Resultant moments • Equilibrium • Centres of mass • Tilting <p><u>Forces and Friction</u></p> <ul style="list-style-type: none"> • Resolving forces • Inclined planes • Friction

	<p><u>Differentiation</u></p> <ul style="list-style-type: none"> • Differentiating $\sin x$ and $\cos x$ • Differentiating exponentials and logarithms • The chain rule • The product rule • The quotient rule • Differentiating using trigonometric functions • Parametric differentiation • Implicit differentiation • Using second derivatives • Rates of change
Science	<p>Biology</p> <ul style="list-style-type: none"> • Respiration • Respiration produces ATP. • Glycolysis is the first stage of anaerobic and aerobic respiration. It occurs in the cytoplasm and is an anaerobic process. • Glycolysis involves the following stages: <ul style="list-style-type: none"> • phosphorylation of glucose to glucose phosphate, using ATP • production of triose phosphate • oxidation of triose phosphate to pyruvate with a net gain of ATP and reduced NAD. • If respiration is only anaerobic, pyruvate can be converted to ethanol or lactate using reduced NAD. The oxidised NAD produced in this way can be used in further glycolysis. • If respiration is aerobic, pyruvate from glycolysis enters the mitochondrial matrix by active transport. • Aerobic respiration in such detail as to show that: <ul style="list-style-type: none"> • pyruvate is oxidised to acetate, producing reduced NAD in the process • acetate combines with coenzyme A in the link reaction to produce acetylcoenzyme A • acetylcoenzyme A reacts with a four-carbon molecule, releasing coenzyme A and producing a six-carbon molecule that enters the Krebs cycle • in a series of oxidation-reduction reactions, the Krebs cycle generates reduced coenzymes and ATP by substrate-level phosphorylation, and carbon dioxide is lost • synthesis of ATP by oxidative phosphorylation is associated with the transfer of electrons down the electron transfer chain and passage of protons across inner mitochondrial membranes and is catalysed by ATP synthase embedded in these membranes (chemiosmotic theory) • other respiratory substrates include the breakdown products of lipids and amino acids, which enter the Krebs cycle. • Required practical 9: Investigation into the effect of a named variable on the rate of respiration of cultures of single-celled organisms. • Evolution may lead to speciation • Evolution as a change in the allele frequencies in a population. • Reproductive separation of two populations can result in the accumulation of difference in their gene pools. New species arise when these genetic differences lead to an inability of members of the populations to

interbreed and produce fertile offspring. In this way, new species arise from existing species.

- Allopatric and sympatric speciation.
- The importance of genetic drift in causing changes in allele frequency in small populations.

Populations in ecosystems

- Populations of different species form a community. A community and the non-living components of its environment together form an ecosystem. Ecosystems can range in size from the very small to the very large.
- Within a habitat, a species occupies a niche governed by adaptation to both abiotic and biotic conditions.
- An ecosystem supports a certain size of population of a species, called the carrying capacity. This population size can vary as a result of:
 - the effect of abiotic factors
 - interactions between organisms: interspecific and intraspecific competition and predation.
- The size of a population can be estimated using:
 - randomly placed quadrats, or quadrats along a belt transect, for slow-moving or non-motile organisms
 - the mark-release-recapture method for motile organisms. The assumptions made when using the mark-release-recapture method.
- Ecosystems are dynamic systems.
- Primary succession, from colonisation by pioneer species to climax community.
- At each stage in succession, certain species may be recognised which change the environment so that it becomes more suitable for other species with different adaptations. The new species may change the environment in such a way that it becomes less suitable for the previous species.
- Changes that organisms produce in their abiotic environment can result in a less hostile environment and change biodiversity.
- Conservation of habitats frequently involves management of succession.

Chemistry

- **Aromatic Chemistry**
- The nature of the bonding in a benzene ring, limited to planar structure and bond length intermediate between single and double.
- Delocalisation of p electrons makes benzene more stable than the theoretical molecule cyclohexa-1,3,5-triene.
- **Students should be able to:**
- use thermochemical evidence from enthalpies of hydrogenation to account for this extra stability
- explain why substitution reactions occur in preference to addition reactions.
- **Electrophilic substitution**
- Electrophilic attack on benzene rings results in substitution, limited to monosubstitutions.

	<ul style="list-style-type: none"> • Nitration is an important step in synthesis, including the manufacture of explosives and formation of amines. • Friedel–Crafts acylation reactions are also important steps in synthesis. • Students should be able to outline the electrophilic substitution mechanisms of: <ul style="list-style-type: none"> • nitration, including the generation of the nitronium ion • acylation using AlCl₃ as a catalyst. • Amines • Primary aliphatic amines can be prepared by the reaction of ammonia with halogenoalkanes and by the reduction of nitriles. • Aromatic amines, prepared by the reduction of nitro compounds, are used in the manufacture of dyes. • Amines are weak bases. • The difference in base strength between ammonia, primary aliphatic and primary aromatic amines. • Students should be able to: <ul style="list-style-type: none"> • explain the difference in base strength in terms of the availability of the lone pair of electrons on the N atom. • Nucleophilic properties • Amines are nucleophiles. • The nucleophilic substitution reactions of ammonia and amines with halogenoalkanes to form primary, secondary, tertiary amines and quaternary ammonium salts. • The use of quaternary ammonium salts as cationic surfactants. • The nucleophilic addition–elimination reactions of ammonia and primary amines with acyl chlorides and acid anhydrides. • Students should be able to outline the mechanisms of: <ul style="list-style-type: none"> • these nucleophilic substitution reactions • the nucleophilic addition–elimination reactions of ammonia and primary amines with acyl chlorides. <p>Physics</p> <ul style="list-style-type: none"> • Gravitational fields • Electric fields
History	<p>Trade Union Civil Rights 1865-1992,</p> <ul style="list-style-type: none"> • Gilded Age, • progressive era, • WWI, 1920's, • New Deal, WWII, • post war technology boom, • 1960's Black Power, • Coursework
Art	<p><u>A-Level - Personal Investigation Coursework Unit</u></p> <ul style="list-style-type: none"> • Completion of Development work, Final Pieces and essay. • Mock exam <p><u>BTEC - Unit 3 – The Creative Process</u></p> <ul style="list-style-type: none"> • Experiment with the stages and activities within the creative process to develop own working practice

	<p><u>BTEC - Unit 2 – External Written Exam preparation.</u></p> <ul style="list-style-type: none"> • Artist research, critical analysis of artists and artwork. • Mock Exam
Photography	<p><u>Continuation of personal project</u></p> <ul style="list-style-type: none"> • Students will continue to work on their personal projects, focusing on their final idea.
Business	<p><u>Unit 2: Developing a marketing campaign</u> <u>Planning and developing a marketing campaign</u></p> <ul style="list-style-type: none"> • Marketing campaign activity • Marketing mix • The marketing campaign • Appropriateness of marketing campaign
Computing	<p><u>Adding Functionality to the database</u> – Students will use the forms function of Microsoft Access to create a user interface, test this interface and evaluate the completed database. In January students will sit an external exam that assesses their understanding of database.</p> <ul style="list-style-type: none"> • They will add a graphical user interface made up of forms and buttons that will allow end users to manipulate data within the database without accessing the tables. • Create a simple input form that is user friendly and minimises user error, it should allow the user to enter data into a specific table within the database • Create a complex input form that may need to update different tables and give some feedback to the user that is generated using a complex formula. <p>Fully evaluate the effectiveness of the database solution using descriptive language and the key terms and suggest some areas for improvement.</p>
Games Design	<p><u>U1 – There are 44 topics for the unit 1 exam.</u></p> <p>It covers all aspects of media and how it represents people, objects, news and places in the media via different platforms.</p> <p>As this is an exam unit, pupils are tested regularly on the topics we cover. Students will study how messages are conveyed in the media.</p> <p>They will study how theories of media representation have helped to shape and define the concept.</p> <p>They will look at different types of audiences and define how they are represented in the media.</p> <ul style="list-style-type: none"> • Using the internet to gather information on the current topics. • Using the Internet to watch video/ adverts • Microsoft Word to generate reports and evidence finding from research. • PowerPoint to showcase findings

	<ul style="list-style-type: none"> • Storyboard software to create storyboards • Graphical software to create moodboards, visualisation diagrams 	
Film Studies	<p><u>Documentary Film:</u></p> <ul style="list-style-type: none"> • What is a documentary film? Grierson’s “creative treatment of actuality.” • Michael Moore vs. Nick Broomfield approaches to the form • Importance of digital technologies in the development of documentary film • Positioning of the spectator • Importance of plot and narrative and the selection of information (‘True Fiction’) <p><i>Excerpts from:</i> <i>Bowling for Columbine (Moore, 2012)</i> <i>Kurt & Courtney (Broomfield, 1998)</i></p> <p><i>Set text:</i> <i>Amy (Kapadia, 2015)</i></p> <p><u>Short Film Study and Production</u></p> <ul style="list-style-type: none"> • Reviewing sequences and planning for improvement <p><i>Set texts:</i> <i>15 short films (pupils study a minimum of 3 totalling a minimum of 80 minutes)</i></p>	
Health	<p>Extended Certificate (Single HSC) <u>Working in HSC – Unit 2</u></p> <ul style="list-style-type: none"> • MDT and partnership working • Accountability • Sectors in HSC • Regulating and monitoring • Bespoke revision and exam preparation <p><u>Meeting individual needs – Unit 5</u> <u>Challenges (Nusrat)</u></p> <ul style="list-style-type: none"> • Overcoming challenges (Nusrat) 	<p>Diploma (Double HSC) <u>Working in HSC – Unit 2</u></p> <ul style="list-style-type: none"> • MDT and partnership working • Accountability • Sectors in HSC • Regulating and monitoring • Bespoke revision and exam preparation <p><u>Enquiries into current research – Unit 4</u></p> <ul style="list-style-type: none"> • Preparation for question 4 (to include a timed essay) • Preparation for question 3 (to include a timed essay) • Part A of controlled assessment w/c 28th November <p><u>Principles of safe practice – Unit 7</u></p> <ul style="list-style-type: none"> • Health and safety legislation (to include HASAWA and COSHH)
Music	<p><u>Unit 5: Music Performance Session Styles-Assignment 2</u> <u>Learning Aim C</u></p> <ul style="list-style-type: none"> • Performance situations-joining an established band/group, working with a covers band, guest performances with a house band, providing parts for an electronic dance music (EDM) producer, working as a studio musician, working with a singer, or working with a writer to demo recordings of differing genres and styles, providing backing vocals. 	

	<ul style="list-style-type: none"> • Specific preparation skills-reading from charts or notation, at sight, transposing to fit with other musicians at sight, changing feel and groove as requested and improvising solos or parts. • Interpretation of musical styles-instrumental set-ups for each style, 'sounds' of styles and genres and how to obtain them, idiomatic instrumental techniques and characteristics of styles, styles of notable musicians in a genre and key techniques. • Specific performance skills-stage presence and performance attitude for different settings, responding to cues and other musicians, musical communication, reading from tabs, charts or notation, improvisation and accuracy, timing and feel.
PE	<p><u>Exam Unit</u></p> <p><u>Unit 3 – Sports organization and development</u></p> <ul style="list-style-type: none"> • LO1: Understand how sport in the UK is organised • LO2 : Understand sports development • LO3: Understand how the impact of sports development can be measured • LO4: Understand sports development in practice <p><u>Coursework Unit</u></p> <p><u>Unit 2 – Sports coaching and activity leadership</u></p> <ul style="list-style-type: none"> • LO6. Be able to deliver sports and activity sessions • LO7. Be able to review sports and activity sessions
Photography	<p><u>Personal Project</u></p> <ul style="list-style-type: none"> • 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.
RE/PSHE	<p><u>Self-Management:</u></p> <ul style="list-style-type: none"> • The importance of routines to our physical and mental wellbeing. • Time management • Effective revision • Work/life balance • Financial management
Psychology	<p><u>Unit 3 Exam unit</u></p> <ul style="list-style-type: none"> • Behavioural addiction – shopping and gambling • Theories of persuasion • Treatments for stress and addiction • Reasons for nonadherence <p>Revision to prepare for external exam in January</p>
Sociology	<p><u>Theories and methods</u></p> <ul style="list-style-type: none"> • The difference between consensus and conflict theories of society, including consensus theories such as functionalism and the New Right, and conflict • Theories i.e., Marxism (including variants such as scientific and humanistic Marxism) and feminism (including variants such as liberal, radical, Marxist etc. feminism) <p><u>Crime and Deviance</u></p> <ul style="list-style-type: none"> • The social distribution of crime and deviance by ethnicity, gender and social class, including recent patterns and trends in crime • Globalisation and crime in contemporary society

	<ul style="list-style-type: none">• The media and crime• Green crime• Human rights and state crimes
Hospitality	<p>Unit 1: The Hospitality Industry</p> <ul style="list-style-type: none">• Understand the scale and diversity of the hospitality industry• Understand the classification systems and their standards• Know the organisation and structure of hospitality businesses• Know the purpose of support functions in hospitality businesses.