Year 12 Half Term 1 Curriculum

Subject	Half Term 1 – Topic/Summary of Powerful Knowledge
English Literature	Introduction to Tragedy: • Conventions of a tragedy • Aristotelian (Poetics) and Shakespearean tragedy • Modern Tragedy and Millerian view of tragedy • Depression Era and Post-War America • Recall and deepening of context of late Elizabethan/Early Jacobean times: Great Chain of Being, role of men and women, racism. • Develop understanding of plot, character, dramatic methods, structure and genre through analysis of the texts. • Begin to understand the different ways to read literature and how to analyse a text using the following lenses: Marxist, feminist, post-colonial. • Construct tightly focused thesis statements to present an idea to be tested against different interpretations and elements of tragedy in the texts. *Set texts:* *Othello* (Shakespeare) *Death of a Salesman* (Miller)
Maths	Binomial Expansion • Pascal's Triangle • Factorial notation • The binomial expansion • Solving binomial problems • Binomial estimation Algebraic Expressions • Recall laws of indices • Expand two or more polynomials • Write an expression as a product of their factors • Apply rules of negative and fractional indices • Simplify surds • Rationalising a denominator Quadratics • Solving Quadratic Equations • Using the quadratic formula • Completing the square • Solving a quadratic equation by completing the square • Functions • Quadratic Graphs • The Discriminant • Modelling with Quadratics Equations and Inequalities • Linear simultaneous equations • Quadratic simultaneous equations • Simultaneous equations on graphs • Linear inequalities • Quadratic inequalities

	• Inequalities on graphs • Regions Data Collection • Populations and samples • Sampling • Non-random sampling • Types of data • The large data set Measures of Location and Spread • Measures of central tendency • Other measures of location • Measures of spread • Variance and standard deviation
Science	<u>Biology</u> <u>Biological Molecules</u> <u>Carbohydrates</u> Monosaccharides are the monomers from which larger carbohydrates are made. Glucose, galactose and fructose are common monosaccharides. A condensation reaction between two monosaccharides forms a glycosidic bond. Disaccharides are formed by the condensation of two monosaccharides: • maltose is a disaccharide formed by condensation of two glucose molecules • sucrose is a disaccharide formed by condensation of a glucose molecule and a fructose molecule • lactose is a disaccharide formed by condensation of a glucose molecule and a galactose molecule. Glucose has two isomers, α-glucose and β-glucose, with structures. Polysaccharides are formed by the condensation of many glucose units. • Glycogen and starch are formed by the condensation of α-glucose. • Cellulose is formed by the condensation of β-glucose. The basic structure and functions of glycogen, starch and cellulose. The relationship of structure to function of these substances in animal cells and plant cells. Biochemical tests using Benedict's solution for reducing sugars and non-reducing sugars and iodine/potassium iodide for starch. <u>Lipids</u> • Triglycerides and phospholipids are two groups of lipid. • Triglycerides are formed by the condensation of one molecule of glycerol and three molecules of fatty acid. • A condensation reaction between glycerol and a fatty acid (RCOOH) forms an ester bond. • The R-group of a fatty acid may be saturated or unsaturated. • In phospholipids, one of the fatty acids of a triglyceride is substituted by a phosphate-containing group. • The different properties of triglycerides and phospholipids related to their different structures. • The emulsion test for lipids.

	<u>Cell Structure</u> The structure of eukaryotic cells, restricted to the structure and function of: • cell-surface membrane • nucleus (containing chromosomes, consisting of protein-bound, linear DNA, and one or more nucleoli) • mitochondria • chloroplasts (in plants and algae) • Golgi apparatus and Golgi vesicles • lysosomes (a membrane-bound organelle that releases hydrolytic enzymes) • ribosomes • rough endoplasmic reticulum and smooth endoplasmic reticulum • cell wall (in plants, algae and fungi) • cell vacuole (in plants). • In complex multicellular organisms, eukaryotic cells become specialised for specific functions. Specialised cells are organised into tissues, tissues into organs and organs into systems. <u>Structure of prokaryotic cells and of viruses</u> Prokaryotic cells are much smaller than eukaryotic cells. They also differ from eukaryotic cells in having: • cytoplasm that lacks membrane-bound organelles • smaller ribosomes • no nucleus; instead they have a single circular DNA molecule that is free in the cytoplasm and is not associated with proteins • a cell wall that contains murein, a glycoprotein. In addition, many prokaryotic cells have: • one or more plasmids • a capsule surrounding the cell • one or more flagella. Details of these structural differences are **not** required. Viruses are acellular and non-living. The structure of virus particles to include genetic material, capsid and attachment protein. <u>Physics</u> Measurements and their errors • Use of SI units and their prefixes • Limitation of physical measurements • Estimation of physical quantities Particles and radiation • Constituents of the atom • Stable and unstable nuclei • Particles, antiparticles and photons • Particle interactions • Classification of particles • Quarks and antiquarks • Applications of conservation laws
History	Cold War in Asia • Causation / split in 1945 • Model States (Japan / Philippines)

	• Chinese Civil War
Geography	Natural Hazards - Perceptions of a natural hazard - Differences between risk and vulnerability - Tectonic activity and causes - Impact of human environment and levels of vulnerability Changing Places - What is place - Sense of place - Perceptions of place - Social and spatial exclusion - Different types of places - Perception of places - Sense of place
Art	<u>Introduction to Level 3 Courses in A-Level Fine Art and BTEC Art and Design.</u> <u>Personal Investigation and 'Materials, Techniques and processes'</u> • Exploring a chosen theme, brainstorming, researching ideas and related artists. Collating a collection of photographs to work from. • Drawing through a variety of materials, techniques and processes. • Critical analysis of art, artists and annotating development of their ideas.
Business	Unit 1: Exploring Enterprise Explore the features of different businesses and analyse what makes them successful Unit 3 Personal & Business Finance Understand the importance of managing personal finance • Functions and role of money • Different ways to pay · Current accounts • Managing personal finance • Explore the personal finance sector • Features of financial institutions • Communicating with customers • Consumer protection in relation to personal finance · Information, guidance and advice
Computing	<u>Unit 6 requires students to analyse a series of websites and evaluate their appropriateness compared with client requirements.</u> This analysis is important for all aspects of KS5 work as they will often have to comment on design principles and how they are appropriate for a target audience throughout their course in multiple units. Students will then use this core knowledge to underpin their own designs as they develop a range of technical documentation before developing their own website. • Review designs and make some suggested improvements

	• Test the website for functionality, compatibility and usability • Optimise the website against client requirements • Evaluate the website against the client requirements • Analyse and evaluate how the principles of website design are used to produce creative, high performance websites which meet client requirements
Film Studies	<u>History of Film and Key Elements of Film Form:</u> • The birth of film • Evolution of film as an art form • Institutional context – classical and new Hollywood • Five key elements of film language: Cinematography, Mise-en-scene, Editing, Sound and Performance *Excerpts from:* *A Trip to the Moon (Melies, 1902)* *King Kong (Cooper, 1933)* *Gone with the Wind (Fleming, 1939)* *Double Indemnity (Wilder, 1944)*
Games Design	<u>Media Production</u> Students will have to demonstrate knowledge and understanding of the media production process and relate considerations when responding to a brief. • Using the internet as a source to gather primary and secondary information • Using Microsoft word to develop reports, scripts, Risk assessments, permission letters and checklists • Using Microsoft Excel to create budget plans and timescales • Using storyboard Software • Using Imaging Software to create mood boards, logos and other visual ideas
Health	<u>Unit 1 (single and double):</u> Growth and development across the life stages (infancy through to later adulthood): • Physical development • Intellectual development Theory linked to intellectual development • Piaget's Theory of Cognitive Development • Chomsky's Child Language Acquisition <u>Unit 5 (single and double):</u> • Equality and diversity • Promoting an anti-discriminatory practice • Use of Nusrat and Alice case studies <u>Unit 7 (double):</u> • Abuse and neglect – spotting signs and symptoms • Use of Zebra Ward, Merryvale and Briar's Avenue case studies

	• Introduction to reasons for vulnerability (e.g., cognitive impairment and age) and how risk of abuse and neglect can be reduced (e.g., training and raising awareness) <u>Unit 14 (double):</u> • Causes, signs and Symptoms of diabetes • Introduction to impact of diabetes on function of body systems
Music	<u>Unit 1: Practical Music Theory and Harmony-Assignment 1</u> <u>Unit 3: Ensemble Music Performance-Preparation for externally set brief</u> • Unit 1-Learning Aim A • Rhythm and pitch in staff notation • Clefs – treble, bass. • Names and positions of notes on the stave, including ledger lines. • Accidentals. • Intervals (up to one octave) – major, perfect, minor, diminished, augmented. • Note and rest values (up to hemidemisemiquavers/64th notes). • Bars and bar lines. • Time signatures – simple, compound, complex. • Key signatures. • Unit 3: • Explore ensemble skills and techniques involved in working as part of a musical ensemble. • Personal ensemble management skills • Attendance and punctuality. • Personal organisation of instruments, equipment and music. • Awareness of health and safety issues. • Learning material. • Personal practice between rehearsals. • Encouragement and positive feedback. • Rehearsal etiquette. • Listening to others.
PE	<u>Exam Unit</u> <u>Unit 1 – Body Systems and the effects of physical activity.</u> • LO1: Understanding the skeletal system in relation to exercise and physical activity. <u>Coursework Unit</u> <u>Unit 2 – Sports coaching and activity leadership</u> • LO1: Know the roles and responsibilities of sports coaches and activity leaders.
RE/PSHE	<u>Philosophy</u> • Philosophical ideas • Questions about human existence • What have the great philosophers taught about life?
Photography	<u>Introduction project</u> This unit gives students the opportunity to explore many aspects of photography through workshops, such as: • Composition

	• History of photography • Camera Control • Post Processing (Photoshop)
Psychology	<u>Unit 1 Exam Unit - Application of approaches in Psychology:</u> • Cognitive approach • Social approach • Learning approach • Biological approach
Criminology	<u>Unit 1 Controlled Assessment Unit</u> • Analyse different types of crime • Reasons certain crimes go unreported • Consequences of unreported crime
Sociology	<u>Families and Households</u> • Nuclear families • The role of families in society according to functionalists, Marxists, feminists • The postmodern/modern/late modern perspectives on the family • Social policies affecting family life • Equality of couples • Changes in family patterns in the last 50 years <u>Education</u> • Key features of the education system in the UK • The functionalist, New Right, Marxist, feminist and postmodernist perspective on education • Social class impacting on pupil achievement and labelling affecting achievement • Internal and external factors impacting educational achievements