Year 11 Overview

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	Autumn	Spring	Summer
English	**Reading** - To be able to read for a variety of purposes, including reading critically with deep understanding and comprehension - To be able to read a range of texts to determine explicit information -To be able to read a range of texts to determine implicit information - To be able to read a range of texts with the ability to analyze and evaluate writers' thoughts and views	**Listening** -To be able to listen and select relevant and specific information -To be able to listen to infer meaning, gist, and purpose -To be able to recognize connections between attitudes, ideas, and opinions	**Speaking** -To be able to develop responses and link ideas using appropriate linking devices - To be able to communicate ideas, information, and opinions accurately, clearly, and effectively - To be able to use a variety of grammatical structures and vocabulary accurately and effectively and show good control of intonation and pronunciation patterns - To be able to engage actively and effectively in a conversation to move it forward
Mathematics	**Functions/Quadratic function** - Function notation. Domain and range of functions, Properties of functions. - The Standard, Vertex and Factored forms of quadratic functions. Different forms of quadratic functions and text problems. Graphing functions and understanding their characteristics. -Transformations of linear and quadratic functions. Translations reflections and dilations. Exponential functions. - Solving nonlinear equations. Transformation of rational functions. Transforming cubic functions.	**Geometry** - Sine, Cosine functions and transformations. Modelling real-life situations using trigonometric functions. Unit circle. Radians. - Sine Rule and Cosine rule, including applications (link to trigonometric functions). - Area of a triangle rule. Trigonometric identities. - Vectors. **Statistics**	**Probability** - Probability with Venn Diagrams, tree diagrams and sample spaces - Mutually exclusive events. Combined events. - Addition and multiplication rules. Conditional probability. - Dependent and Independent events. **Sequences**

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	- Composite functions - Inverse functions. Laws of exponents, including fractional/rational exponents. **Geometry** - Finding the volume and surface area of regular and compound shapes, capacity - Secant, tangent - Arc length, sector area - Using circle theorems to find lengths of chords. - Bearings - Angle of elevation, angle of depression - Trigonometric ratios in right-angled triangles. Relating angles and sides of right-angled triangles using sine, cosine, and tangent. Solving problems in right-angled triangles using trigonometric ratios.	- Revision of mean, median, mode, frequency. Sampling techniques. - Data manipulation and misinterpretation. Graphical representations including bivariate graphs, scatter graphs, box and whisker plots, outliers, cumulative frequency graphs, stem, and leaf plots. - Graphical analysis and representation of data in scatter plots. Constructing and interpreting scatter plots. Lines of best fit. Data processing: Quartiles and Percentiles. Measures of dispersion: Interquartile range. Correlation. - Relative frequency. Sets, including notation and operations up to three sets.	- Finding patterns in sequences. Using patterns to work backwards. - Finding and justifying a general rule for a sequence. - Arithmetic and Geometric sequences. Arithmetic & geometric series and summation. - Sigma notation.
Physics	**Motion** - Scalars and vectors. - Understand displacement, velocity and acceleration. - Understand motion graphs. - Understand the equations of motion. - Revise forces. - Understand momentum. **Pressure**	**Moments** - Define a 'Moment' as the turning effect. - Describe everyday examples were forces cause rotation. - State the 'Principle of Moments': - Outline an experiment to test the principle of moments. - Solve problems using the principle of moments. - Explain how a lever can be used to lift a	**Nuclear** - Understand the composition of the atom. - Understand nuclear terms. - Understand radioactive decay. - Understand nuclear fission and nuclear fusion. - Understand the hazards and applications - associated with nuclear processes. **Space**

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	- Define 'Pressure' as the force per unit area. - State that the pressure on a surface is at right angles (normal) to the surface. - Explain why pressure in a fluid varies with height or depth. - State that the pressure at a point in a fluid is the same in all directions. - Define 'Density' as the mass per unit volume of a material. - Explain why the pressure in a fluid depends on the density of the fluid. **Magnetism** - Understand magnetic fields. - Understand electromagnets and the motor effect. - Understand electromagnetic induction. - Understand transformers.	heavy object. - Explain how gears transmit and change a rotational force. - Define the 'Centre of Mass' as the point in an object where all the mass appears to act - Explain why an object does not rotate if its centre of mass is directly above the fulcrum. - Explain what effect the position of the centre of mass (vertically or horizontally)has. - Define the 'Centre of Mass' as the point in an object where all the mass appears to act. **Thermal Physics** - Understand the states of matter and the transitions between them. - Understand the changes in internal energy as a substance is heated or cooled. - Understand the relationship between pressure, volume and temperature of an ideal gas. - Understand how thermal energy flows from one place to another. - Understand black body radiation.	- Understand the structure and motion of the solar system. - Understand the life cycle of a Star. - Understand the evidence for the expansion of the Universe. **Revision of IGCSE syllabus of examination preparation.**
Biology	**Genetics, inheritance, classification, variation, and selection.** - Understand the concept of genetics and inheritance.	**Organisms and human influence on the environment.** - Understand the impact of greenhouse gases on the environment.	Revision of the IGCSE Syllabus for the two years Exam preparation. External exams

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	- Understand the history of classification. - Understand classification of animals. - Understand classification of plants. - Understand the role of variation in organisms. - Understand the role of adaptations in organisms. - Understand selection and evolution in organisms. **Organisms and human influence on the environment.** - Understand organisms and their environment. - Understand nutrient cycles. - Understand populations. - Understand human influence on the environment.	- Understand the cause and effect of acid rain on the environment. - Understand factors which contribute to ozone depletion. - Understand sustainability. - Understand endangered species and conservation. **Biotechnology and genetic engineering** - Understand biotechnology and genetic engineering	
Chemistry	**Chemical changes** - Explain what is meant by physical and chemical changes with examples. - Exothermic and endothermic changes - Explain differences between electrochemical cells and electrolysis. - Explain differences in voltage of electrochemical cells linking differences to reactivity series	**Process of metal extraction** - Describe bauxite as an ore of aluminium. - Explain metal extraction in terms of their position on the reactivity series. - Describe the process of extraction of zinc from zinc blende. - Explain the chemical reactions that occur in the blast furnace in the production of iron. - -	**Organic chemistry and petrochemicals** - Describe the term 'homologous series" - Describe the general characteristics of a homologous series. - State the structures of methane, ethane, ethanol, and ethanoic acid - Define the term 'hydrocarbon'. - Structural formulae of alkanes up to 6 carbon atoms.

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	- Draw, label and interpret energy level diagrams. - Write balanced chemical half reactions for acidic and alkaline electrolytes in fuel cells. **Acids and bases** - Describe the terms neutral, acid, base, and alkali. -Describe indicators used to identify acids and alkalis - Classify oxides as acidic, basic, neutral, and amphoteric with examples. **Making salts** - Describe methods of preparation, separation, and purification of salts - Describe the preparation of insoluble salts by precipitation reactions. - Describe the tests for cations and anions **Metals and reactivity** - Define the term 'alloy'. - Describe the properties and uses of the following alloys (i) brass, (ii) bronze, (iii) solder, and (iv) stainless steel. - Describe metals that are above hydrogen in the reactivity series.	- State the raw materials used in the process of producing iron in a blast furnace - Describe how iron is converted into steel - Explain the difference between a blast furnace and steel making processes. - Evaluate advantages and disadvantages of recycling metals - Explain the uses of zinc for galvanising and for making of brass. **Reversible reactions and rate of reactions** - Describe suitable methods to calculate rate of reactions - Describe the factors affect rate of reaction - Light in photochemical reactions. - Word, chemical and balanced chemical equation of photosynthesis. **Reversible reactions** - Evaluate the conditions which must be present when chemical reactions are reversible. - Identify a reversible reaction using ⇌ symbol - Describe reversible reactions - Define what is meant by the term 'closed system'. **Chemical industry**	- Isomerism. - Describe structural isomers from given information. - Describe the products of complete combustion **Alkanes and alkenes** - Describe the properties of alkanes and bonding in alkanes - Reaction of alkanes with chlorine. - Manufacture of alkenes, cracking - State and draw the structural formulae of alkenes up to 6 carbon atoms. - Addition reactions of alkenes - Describe how ethanoic acid is made. - Explain the properties of ethanoic acid - State and draw the structural formulae of carboxylic acids up to four carbon atoms. - State and draw the structural formulae of esters up to four carbon atoms **Polymers** - Macromolecule, monomer, polymer, and polymerisation. - State the structure of monomers and additional polymers. - Amide-linkage and ester linkage.

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	- Describe metal reactivity in terms of displacement reactions. - Describe reactivity of metals in terms of valency and ability to lose electrons. **Electricity and chemistry** - Define the term electrolysis, cation and anion; electron transfer - Word, chemical and balanced chemical equation for electrolysis reactions. - Explain products at electrodes	- Explain the need for nitrogen, phosphorous and potassium containing fertilisers. - Describe the displacement of ammonia from its salts. - Explain the essential conditions and chemical used in the Haber process - Evaluate changes in equilibriums of the Haber process and its impact of yield versus rate of reaction. - Describe uses of sulphur and sulphur dioxide.	- Define the following terms: (i) polyamide, and (ii) polyester. - Explain condensation polymerisation. - Describe the formation of nylon and terylene. **Biological molecules** - Describe DNA as a polymer made of four different monomers called nucleotides - Define proteins and carbohydrates as constituents of food. - State the chemical structure of a protein.
Business Studies	**Business Functions** -The aim of this subject content is to improve the ability of learners in business functions. -Learners will be introduced to a range of business activities such as sales, marketing, operations, people and systems (including processes). -The intention is for learners to gain insight as to how business is driven by a cross-section of activities which interweave and rely on each other to function successfully.	**Organisation in Business** -The aim of this subject content is to allow learners to demonstrate a basic understanding as to the importance of organisation within business. - Learners must be able to demonstrate their knowledge of simple organisation structures, complex (e.g. – hierarchal) structures and how these align with certain types of business organisations. -Learners must also demonstrate a basic understanding as to the importance of effective employee engagement in business operations.	**Internal and external influences in business** -The aim of this subject content is to improve the candidate's understanding as to the way in which internal and external influences affect business decisions, funding, management and overall functions within business.

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History	**Understand who was to blame for the Cold War.** -Examine the issues pertaining to the conflict between the East and the West. Provide an analysis and substantiate their arguments. -Highlight the precursors and consequences of the given events and identify how they affected the tension between the two countries.	**Understand how effectively the United States contained the spread of Communism.** -Analyse the 1954 propaganda poster in South Vietnam during Operation Passage to Freedom, then answer the key questions. - Discuss the nature of the Doctrine and how it affected US-USSR relations. In addition, express your thoughts regarding Truman's statement.	**Understand how secure the USSR's control over Eastern Europe was, 1948–c.1989** -Describe the event and response behind the Hungarian Uprising. -Explain how both Khrushchev and the West responded to this event. - Analyse different sources on Soviet control
Art	**Personal Portfolio** Students will record ideas, observations and insights relevant to intentions as work progresses. They will be able to: -Use line to accurately record shape and proportion -Use graduated tone and mark making techniques to describe volume and texture -Create effective compositions by carefully considering the layout of their subject -Use a camera to record a subject with emphasis on technical ability -Record their thoughts and ideas as work develops using subject specific language -Demonstrate skill in recording observations from a variety of relevant sources and show intentions effectively Students will explore and select appropriate resources, media, materials, techniques and processes. They will be able to: -Use artistic processes to develop and extend ideas -Experiment with relevant combinations of media, materials, techniques, processes and compositions -Reflect on their ideas as they develop		**Personal Project** Component 1: Coursework – 50% -Students will independently be choosing a theme to base their portfolio of work. -Their choice can be a response from several starting points or based on an area of their own personal interest. -Students will work in accordance with the Assessment Objectives 1,2,3 and 4. Through producing observational studies, artist research and developmental studies and finally completing their final piece.

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	-Select the most appropriate material for the purpose of their study -Refine their handling of materials as their work progresses -Demonstrate excellent exploration of media, materials, techniques and processes, showing effective selection of relevant sources Students will develop ideas through investigation, demonstrating critical understanding. They will be able to: -Research, record and contribute verbally, their understanding of the work of other artists -Produce transcriptions to show understanding of artists' techniques and methods -Incorporate the style and traditions of their chosen artists into their own work -Use subject specific key words to analyse the work of other artists -Have used the experience of gallery visits (virtual) to contextualise their project -Demonstrate excellent development of ideas through investigation, showing effective critical understanding Students will present a personal and coherent response that realises intentions and demonstrates an understanding of visual language. They will: -Produce personalised outcomes that demonstrate clear and effective connections to source materials -Show clear and confident evidence of interpretation of other artists' responses -Appreciate the importance of resolving the project with a final piece or pieces ready for exhibition -Present their work on A2 boards in preparation for external assessment -Apply visual elements as practiced in earlier development stages skillfully in final outcomes Demonstrate excellent realisation of intentions, showing effective understanding of visual language	The Final piece will be started and completed within the mock exam. This will support and prepare the students for the Externally Set Assignment, where they will have 8 hours to produce their final piece under exam conditions. Component 2: External Assignment (EXAM) Begins in January 50%

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French	Reading	Listening	Speaking
	-Students will study the topic of social issues which will include learning how to talk about French charities, describing charity work, describing eating habits, comparing old and new health habits and describing health resolutions. Students will also study the topic of Global issues which will include learning how to talk about local environmental issues and actions, environmental problems and their solutions and talking about inequality and poverty. -Students will learn topic-specific vocabulary and consolidate their knowledge of French phonics. The following grammar points will be covered: Vouloir + infinitive Indefinite pronouns The conditional of vouloir and aimer En + present participle Devoir and pouvoir + infinitive Il faut + infinitive Imperfect tense of être, avoir and faire Recognising the pluperfect tense Revision of negative constructions Using si + present tense Si clauses + present tense + future tense en and y Verbs of possibility Present-tense forms of the subjunctive.	- Students will study the topic of Holidays which will include talking about different holiday destinations and activities, your holiday preferences, describing past holidays in detail, talking about different places you can visit in France. Students will study the topic of School which will include describing your school and the subjects you study, describing your school day, talking about school rules and uniform, comparing life in French and British schools, talking about a past school trip and describing your ideal school. - Using prepositions for countries and modes of transport Using negatives Depuis + the present tense The pronoun y Revision of the perfect tense with avoir and être Après avoir / être + past participle Venir de + infinitive Revision of the imperfect tense of –er verbs and avoir, être and faire Revision of using the perfect tense of regular –er verbs Emphatic pronouns Revision of the perfect tense of –ir and –re verbs and irregular verbs Using the comparative of adverbs and superlative adverbs Revision of using pouvoir, vouloir and devoir and il faut.	- Students will study the topic of Education post16 and jobs, careers and ambitions which will include talking about future studies, talking about part-time work, giving job preferences and advantages and disadvantages of certain jobs, discussing how to get a job and discussing university and apprenticeships. - Using intensifiers Revision of si clauses in the present tense Si clauses with the future tense Using quand clauses with the future tense Two-verb structures Using verbs of liking and disliking Using verbs of liking and disliking in the conditional the passive voice in the present tense Revision of comparatives and superlatives Avoiding the passive Recognizing the passive in the past and the future. - Students will develop a range of skills including ignoring words which are not needed in listening tests, being aware of false friends when translating into English, using qui and que to help you refer to something and using fewer common prepositions. - Reading: Show an awareness for false-friends. Writing: Adapting structures to write more creatively and with greater

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	-Students will develop a range of skills including using verbal context when listening, using adverbs to enhance sentences, recognizing common patterns in French when listening, reusing known words and phrases, making use of social and cultural context when listening and justifying answers.	- Students will develop a range of skills including using negatives to improve writing, paraphrasing, expressing opinions and using more than one tense in the same sentence. intensifiers, recognizing cognates and near-cognates when reading, forming longer sentences, using visual and verbal context in reading and using more than one tense in the same sentence. - Reading: Using the title to illicit meaning of topics. Reading for clues to indicate time frames. Reading closely for accuracy in translation tasks. Writing: Accurate use of more complex structures. Oracy: Take part in increasingly extended sequences of speech, use creative and complex forms with accurate pronunciation and intonation. - Les vacances, aller en vacances, je vais, un pays, à l'étranger, les activités, le temps, voyager, il y a, on peut, je suis allé(e), c'était, je voudrais aller, un collège, j'étudie, les matières, les profs, apprendre une journée scolaire, un voyage scolaire, l'uniforme, les règles.	independence. Oracy: Making use of creative and more complex forms with reference to past, present and future events. - Un lycée, la fac, travailler, un emploi, un boulot, à plein temps, à temps partiel, je voudrais devenir, je voudrais être, les compétences, le conseil, bien/mal payé.
Computer Science	**Ethical, legal, and environmental concerns** Aim The aim of this unit is to enable students to demonstrate a theoretical	**Programming techniques** Aim The aim of this unit is to enable students to demonstrate a theoretical understanding of Programming techniques	P**urpose of Translators and facilities of languages** Aim The aim of this unit is to enable students to demonstrate a theoretical

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	understanding of Ethical, legal, and environmental concerns - **Describe** open-source vs proprietary software - **Describe** environmental impact of Computers The aim of this unit is to enable students to demonstrate a theoretical and practical understanding of **Computational thinking, algorithms and programming** **Computational Thinking** **Aim** The aim of this unit is to enable students to demonstrate a theoretical understanding of computational thinking - **Examine** computational thinking: abstraction decomposition - **Describe** the use of searching algorithms: binary search linear search - **Describe** the use of sorting algorithms: bubble sort merge sort insertion sort computational thinking - **Assess** the use, of: pseudocode using flow diagrams	- **Examine** programming constructs used to control the flow of a program: sequence selection iteration (count and condition-controlled loops) - **Examine** programming constructs used to control basic file handling operations: open read write close - **Examine** programming constructs used to control basic one- and two-dimensional arrays - **Examine** programming constructs used to control arithmetic operators • the common Boolean operators.6 - **Examine** programming constructs used to control basic data types: integer real Boolean character and string casting - **Examine** programming constructs used to control how to identify syntax and logic errors - **Examine** the purpose of testing **Computational logic** **Aim** The aim of this unit is to enable students to demonstrate a theoretical understanding of Computational logic - **Investigate** logic diagrams using the operations AND, OR and NOT - **Investigate** combining Boolean operators using AND, OR and NOT - **Judge** the use of truth tables	understanding of Translators and facilities of languages - **Analyse** the purpose of translators - **Summarize** the assembler, a compiler and an interpreter7 **Data representation** **Aim** The aim of this unit is to enable students to demonstrate a theoretical understanding of Data representation - **Describe** types of compression: lossy lossless. - **Describe** the effect of colour depth and resolution on the size of an image file. - **Describe** how an image is represented as a series of pixels represented in binary - **Describe** the effect of colour depth and resolution on the size of an image file. - **Describe** bit, nibble, byte, kilobyte, megabyte, gigabyte, terabyte, petabyte

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P.E	**Handball** -To be able to rally co-operatively with a partner. -To be able to play in different positions (attack, defence, goalkeeper) -To be able to perform a technically basic standard. -To be able to be judging the game. -To be able to perform teamwork (communication) -To be able to basic the rules/regulations and safety procedures. -To be able to understand the importance of physical test.	**Football** -Studying rules of safety in the lessons of Football. -Studying and developing dribbling, inside -the foot pass, long pass, foot trap, passing, outside the foot pass, -ball control; tackling -goalkeeping, kicking goals, kick-off -punting, volleying -team play and strategy -defensive manoeuvres, -football rules, game -Improving stamina, agility, strength.	**Volleyball** -Studying rules of safety in the lessons of Volleyball. -Studying and developing underhand serve, simple returns, overhand serve, -Studying and developing forearm passing (set shot) -Studying and developing dig shot - Setting -Blocking -Spike/attacking -Basic games rules, game strategy, rotation Improving stamina, agility, strength.