



The Winchester School



Aim High Progress Study Programme _ (Year 13) –December _2024

Subject	Focus	Activities	Useful website
Accounting	<p>Standard costing:</p> <ul style="list-style-type: none">• To calculate standards as the starting point for budgeting and budgetary control• To evaluate the advantages and disadvantages of standard costing.• To calculate variances for sales, materials, labour and fixed overheads• To prepare statements reconciling standard cost and profits of actual units	<p>Task</p> <p>Faiza owns and runs a small business manufacturing and selling soap. The bank's business advisor recommended that she set budgets for the business costs and revenues. Faiza found that comparing her actual and expected performance was very useful.</p> <p>When she compared her actual performance against the budgeted figures, she found there were big differences between the two sets of results. Faiza used the information to help her to focus on what changes she needed to make to improve the business. At the end of the first year, she changed supplier and negotiated a trade discount. Faiza also updated her budgeted figures so that her budgets for the second year were more realistic and achievable.</p> <ul style="list-style-type: none">• Why is it useful to compare actual results against budgeted figures?	<p>www.myaccountinglab.comwww.cie.org.uk,</p>



The Winchester School



Aim High Progress Study Programme _ (Year 13) –December _2024

		<ul style="list-style-type: none">• Why are Faiza’s budgeted figures for the second year likely to be more realistic than for the first year?• Faiza is keen to continue comparing actual and budgeted figures. Are there any disadvantages of making the comparisons?	
Arabic	<p>TOPIC:</p> <p>قصة قصيرة السماور</p> <p>Learning objectives:</p> <p>أن يحلل مغزى القصة من خلل فهمه أن يصف الطالب الشخصيات في القصة أن يحلل العناصر الفنية للقصة أن يدلل على تقنيات الكتابة في القصة من خلال الأحداث</p> <p>أن يحلل دلالة العبارة في القصة أن يضع نهاية مختلفة للقصة من إبداعه أن يقارن القصة بقصة ما لن يأتي عبر النافذة أن يكتب استجابة أدبية للقصة</p>	<p>يصف الطالب الشخصيات في القصة يحلل العناصر الفنية للقصة يدلل على تقنيات الكتابة في القصة من خلال الأحداث يحلل دلالة العبارة في القصة يضع نهاية مختلفة للقصة من إبداعه يقارن القصة بقصة ما لن يأتي عبر النافذة يكتب استجابة أدبية للقصة</p>	<p>https://www.uae-study.com/2021/03/Samovar-story-for-twelfth-grade.html</p>



The Winchester School



Aim High Progress Study Programme _ (Year 13) –December _2024

Islamic Studies Arabs	TOPIC: العقل في الإسلام Learning objectives: 1-أستنبط مظاهر تكريم العقل في الإسلام-1 2-أوضح عدم التعارض بين العقل والنقل-2.	استنبط مظاهر تكريم العقل في الإسلام أوضح عدم التعارض بين العقل والنقل ابحث واستقصي عدد تكرار الكلمات الآتية في القرآن الكريم، وما دلالة هذا التكرار؟ "تتفكرون-يتفكروا " - " "تعقلون"- " يفقهون	http://saaid.org/Doat/twijri/10.htm
Islamic Studies Non Arabs	TOPIC: EXTREMISM Learning objectives: -To elucidate the concept of balances views and moderation in Islam -To evaluate the factors, lead to imbalance and how can we address this issue.	Record a video on how has U.A.E successfully implemented strategies against extremism? Mention in your video their efforts towards this issue.	https://islamqa.info/en/answers/9466/what-is-moderation-in-religion
Biology	Inherited Changes <ul style="list-style-type: none">Solve genetics problems involving monohybrid and dihybrid crosses, including those involving autosomal	<ul style="list-style-type: none">Using the symbols A and a for the alleles of a gene located on one homologous pair, and B and b for the other homologous pair, draw diagrams to show how	http://www.contexo.info/DNA_Basics/Meiosis.htm https://cognitoedu.org/coursestopic/b3-alevel-aqa_pagdDbnC



The Winchester School



Aim High Progress Study Programme _ (Year 13) –December _2024

	<p>linkage, codominance, multiple alleles and gene interactions</p> <ul style="list-style-type: none">• Solve Problems using genetic diagrams involving test crosses. <p>Coordination:</p> <ul style="list-style-type: none">• Compare the nervous and endocrine systems as communication systems, that coordinate responses to changes in the internal and external environment.• Explain the importance of the myelin sheath (saltatory conduction) in determining the speed of nerve impulses and the refractory period.	<p>independent assortment leads to genetic variation.</p> <ul style="list-style-type: none">• Outline the different stages of Meiosis involved in genetic variation. <ol style="list-style-type: none">1. Make a model of Axon with post and pre- synaptic endings and Label it correctly.2. Make a flow diagram to explain the Nervous system.3. Prepare a presentation on the saltatory movement of nerve impulse.	<p>https://edpuzzle.com/media/672cb325f4b0b82a6e23c50f</p> <p>http://www2.estrellamountain.edu/faculty/farabee/biobk/BioBookNERV.html</p>
--	---	---	---



The Winchester School



Aim High Progress Study Programme _ (Year 13) –December _2024

Business Studies	<p>Topic – Amendment of Financial Statements</p> <ul style="list-style-type: none"> To analyse the purpose and importance of financial statements in business. To analyse the main components of financial statements, including the balance sheet, income statement, and cash flow statement. 	<p><u>Research Based Task:</u></p> <p>Research and discuss the importance of valuing assets in the statement of financial position, including the following questions:</p> <ul style="list-style-type: none"> why should businesses value non-current assets accurately? what different ways are there to value an inventory? why might inventories lose value over time? how could changes in the valuation of non-current assets and inventories impact the stakeholders of the business and the business itself? <p>Produce your findings in the form of a well structured report.</p>	<p>M.Barrett / Bruce R Jewells Worksheet for Chapter 30 http://money.cnn.com/data/world_markets/europe/ http://www.companieshouse.gov.uk/accounts/ https://www.tutor2u.net/business/reference/balance-sheet-non-current-assets-property-plant-equipment</p>
Chemistry	<p><u>Analytical Techniques</u></p> <ul style="list-style-type: none"> To explain and use the terms Rf value in thin layer chromatography and retention time in gas/liquid 	<ul style="list-style-type: none"> Using Mind maps prepare a summary of various reactions of each type of functional group. Separation of the specific amino acids from a given mixture of them. 	<ul style="list-style-type: none"> http://alevelchem.com/aqa_a_level_chemistry/unit3.4/s3411/05.htm http://www.docbrown.info/page04/471atomMSintro.htm http://alevelchem.com/



The Winchester School



Aim High Progress Study Programme _ (Year 13) –December _2024

	<p>chromatography from chromatograms.</p> <ul style="list-style-type: none">• To interpret gas/liquid chromatograms in terms of the percentage composition of a mixture.• To analyze the H-NMR spectrum of simple molecule in High as well as low resolution.• To analyze a carbon-13 NMR spectrum of a simple molecule to deduce:<ul style="list-style-type: none">(i) the different environments of the carbon atoms present(ii) the possible structures for the molecule(iii) the different types of proton present using chemical shift values(iv) the relative numbers of each type of proton present from relative peak areas	<ul style="list-style-type: none">• Calculate the areas of the triangular peaks to estimate the proportion of components in the mixture• Practice analysing the NMR spectra of various molecules.• Work out the sub-atomic particles present in a deuterium atom.• Interpret the splitting pattern of D₂O.• Visit to see an NMR spectrometer in action and observe what sort of spectra it produces.	<ul style="list-style-type: none">• http://www.rsc.org/learn-chemistry• www.s-cool.co.uk• www.teachable.net• http://www.rsc.org/education• http://www.rsc.org/learnchemistry/• http://www.rsc.org/learnchemistry/• www.teachable.net <p>https://www.chemguide.co.uk/inorganic/electrolysis/basiccalcs.html</p> <p>https://byjus.com/chemistry/standard-hydrogen-electrode/</p> <p>http://www.dynamicsscience.com.au/tester/solutions1/chemistry/redox/electrochemicalcellfromequan.htm</p> <p>https://chem.libretexts.org/Bookshelves/Introductory_Chemistry/Book%3A_Introductory_Chemistry_(CK-12)/23%3A_Electrochemistry/23.06%3A_Calculating_Standard_Cell_Potentials</p> <p>https://www.chem.tamu.edu/class/fyp/stone/tutorialnotefiles/electro/nernst.htm</p>
--	--	---	---



The Winchester School



Aim High Progress Study Programme _ (Year 13) –December _2024

	<p><u>Electrochemistry:</u></p> <ul style="list-style-type: none">• To determine the mathematical relationship $F = Le$ and use it in calculations• To outline the working of Standard Hydrogen Electrode (SHE)• To summarise the methods used to measure the standard electrode potentials of: -metals or non-metals in contact with their ions in aqueous solution• To apply the Nernst equation to predict quantitatively how the value of an electrode potential varies with the concentration of the aqueous ion.• To outline the direction of redox reaction using the electrochemical cell value	<ul style="list-style-type: none">• Solve at least five questions making use of $F = Le$ to predict the identity of the products formed during electrolysis• Construct electrochemical cell using Standard Hydrogen Electrode as one of the half cell• Research and prepare a write-up on determining the feasibility of a reaction based upon the electrochemical cell value• Plan an investigation to be conducted in a school laboratory to determine the cell potential under non-standard conditions (use Nernst equation)• Prepare a Power-Point presentation on electrochemical cell value and feasibility of a reaction• Practice interrelating standard Gibbs free change with the electrochemical cell value	<p>http://www.docbrown.info/page01/ExIndChem/electrochemistry11.htm</p>
--	---	--	--



The Winchester School



Aim High Progress Study Programme _ (Year 13) –December _2024

	<ul style="list-style-type: none"> To understand and use the equation 		
Economics	<p>Topic – Money and Banking</p> <ul style="list-style-type: none"> To analyse the relationship between the functions of money and the successful management of a modern economy. To analyse the quantity theory of money and examine its relevance in a modern economy. To analyse the process of credit creation by commercial banks 	<p>Research based task:</p> <ol style="list-style-type: none"> Research and evaluate the role of the central bank of a country of your choice. Critically examine the role of the monetary policy in the UAE to achieve the macro-economic aims. <p>Produce your findings in the form of a well structured report.</p>	<p>www.tutor2u.net/economics/reference/financial-economics-creating-credit www.economicshelp.org/blog/619/economics/how-is-national-debt-financed/ www.economicshelp.org/blog/1047/economics/quantitative-easing/</p> <p>https://www.tutor2u.net/economics/reference/monetary-policy-revision-quiz-1</p> <p>https://www.tutor2u.net/economics/reference/monetary-policy-quizlet-revision-activity</p> <p>https://www.tutor2u.net/economics/reference/mcq-revision-question-quantitative-easing</p>
Psychology	<p>Topic – Group Behaviour</p> <p>Will be able to analyse the types, sources and management of conflict, both personal and interpersonal in the workplace.</p>	<p>Students to review the video from www.mindtools.com/pages/article/newLDR_86.htm about Tuckman’s team development and identify potential sources of conflict and then add other suggestions of conflict from either an organisational or an interpersonal</p>	<p>Psychology Textbook, https://psycho-tests.com/test/conflict-mode</p>



The Winchester School



Aim High Progress Study Programme _ (Year 13) –December _2024

		perspective. Ensure all causes and types of conflict have been covered and understood.	
Physics	<p><u>Capacitance</u></p> <ul style="list-style-type: none"> Analyse graphs of the variation with time of potential difference, charge and current for a charging capacitor and for one discharging through a resistor recall and use $\tau = RC$ for the time constant for a capacitor discharging through a resistor <p><u>Ideal Gases</u></p> <ul style="list-style-type: none"> Solve problems using the equation of state for an ideal gas State the assumptions of the kinetic theory of gases 	<ul style="list-style-type: none"> Sketch Voltage-time, Current-time and Charge-time graphs for charging and discharging of a capacitor Apply the exponential equation for a capacitor discharging through a resistor State and explain in terms of the kinetic model Examine what happens to the pressure inside a tyre when more molecules at the same temperature are pumped into the tyre 	<p>https://www.savemyexams.co.uk/a-level/physics/aqa/17/revision-notes/7-fields--their-consequences/7-7-capacitor-charge--discharge/7-7-1-charge--discharge-graphs/</p> <p>https://www.scienceandmathsrevision.co.uk/topic/charging-and-discharging-capacitors/</p> <p>https://www.youtube.com/watch?v=ZwXtPW0gdD0</p> <p>http://hyperphysics.phy-astr.gsu.edu/hbase/thermo/firlaw.html</p>



The Winchester School



Aim High Progress Study Programme _ (Year 13) –December _2024

	<ul style="list-style-type: none">• Deduce a relationship between pressure, volume and the microscopic properties of the molecules of a gas• relate the kinetic energy of the molecules of a gas to its temperature• Explain 1st law of thermodynamics <p><u>Energy levels in atoms and line spectra</u></p> <ul style="list-style-type: none">• Analyze the appearance and formation of emission and absorption line spectra• Recall and use $hf = E_1 - E_2$	<ul style="list-style-type: none">• Explain Boyle's law and applications• State the ideal gas equation and explain kinetic model• State the relation between temperature and molecular kinetic theory• Apply 1st law of thermodynamics in different situations• Explain the concept of emission and absorption line spectra	<p>http://www.physics.usyd.edu.au/super/life_sciences/TP/TP-rev-questions.pdf</p> <p>https://www.youtube.com/watch?v=yphzYDi5aVA</p> <p>https://revisionscience.com/a2-level-level-revision/physics-level-revision/particles-radiation-quantum-phenomena/spectra-energy-levels</p>
--	--	--	--



The Winchester School



Aim High Progress Study Programme _ (Year 13) –December _2024

Sociology	Intelligence and Educational Attainment Analyze the multifaceted nature of intelligence (e.g., cognitive, emotional, and social aspects) and its measurement.	<ul style="list-style-type: none"> a. Students analyze case studies that highlight how socioeconomic status, culture, and education affect IQ test results. b. Research a theory (e.g., Gardner's Multiple Intelligences, Spearman's g-factor) and present its strengths and criticisms. 	https://www.shortcutstv.com/blog/education-al-achievement-and-intelligence-1/ https://www.shortcutstv.com/blog/education-al-achievement-and-intelligence-2/
English Language	To analyse change in language over time.	<p>Analyse the following elements in any two audio clips.</p> <ul style="list-style-type: none"> c. Lexis d. Semantics e. Dialect f. Grammar g. Syntax <p>Discuss the elements given above with reference to the theories discussed in class.</p> <p>Use the rubric for self-evaluation.</p>	https://www.earlymoderntexts.com/sdgaudio https://www.earlymoderntexts.com/dhaudio https://storydoer.me/teaching_9093/language-change-9093/



The Winchester School



Aim High Progress Study Programme _ (Year 13) –December _2024

Art and Design	AO1, AO2 and AO3 Strong evaluation and the ability to critically analyse appropriate resources to identify, modify and execute works as they progress.	<ul style="list-style-type: none"> • promising idea and skilfully communicate their intentions through attempted 2D or 3D trials. • Translate effectively into a different scale, or the image and media are not successfully organised into a resolved composition. 	www.studentartguide.com
Information Technology	IT in Society: Digital currencies Data mining Social networking services/platforms The impact of IT	Encourage your child to : Data Mining <ol style="list-style-type: none"> 1. Research and define data mining, its importance, and applications. 2. Investigate three data mining techniques (e.g., decision trees, clustering, association rule mining). 3. Choose a real-world industry (e.g., healthcare, finance, marketing) and analyze how data mining is used. 4. Identify benefits, challenges, and potential risks associated with data mining. 5. Create a presentation or report (max. 5 pages) summarizing findings. Digital Currency	cambridgeinternational.org/Images/662482-2025-2027-syllabus.pdf



The Winchester School



Aim High Progress Study Programme _ (Year 13) –December _2024

		<ol style="list-style-type: none"> 1. Research the concept of digital currencies (e.g., Bitcoin, Ethereum). 2. Explain blockchain technology and its role in digital currency transactions. 3. Investigate three digital currency platforms (e.g., Coinbase, Ripple). 4. Analyze benefits (e.g., security, speed) and drawbacks (e.g., volatility, regulation). 5. Discuss potential future developments and impact on traditional finance. 	
Computer Science	<p>Design and implement an efficient algorithm to determine the optimal delivery routes.</p> <p>Analyze the algorithm's performance in terms of time complexity and scalability.</p>	<p>Analyze the algorithm's performance using Big O notation.</p> <p>Test its scalability by increasing the number of delivery points and assessing the impact on execution time.</p>	<p>https://www.cambridgeinternational.org/programmes-and-qualifications/</p>
Travel and Tourism	<ul style="list-style-type: none"> • To assess the role of Interdependent stakeholders involved in the destination branding process. 	<ul style="list-style-type: none"> • Using the list on this website select a country such as Poland or Malta (or France/Spain if it fits better with learners' first language) that also has a UNESCO World Heritage Site. 	<p>www.aalep.eu/key-tourism-stakeholders-eu-28</p> <p>http://stravelandtourism.weebly.com/public-private-and-voluntary-sector.html</p>



The Winchester School



Aim High Progress Study Programme _ (Year 13) –December _2024

		<ul style="list-style-type: none">• Investigate the stakeholders listed and categories them according to the content listed above.• Research other organizations such as WWF, that are involved in those destinations. Identify local and regional organizations that are not listed. From the categories and research, build up what each stakeholder is doing and how they create synergy.	
Statistics 2	<u>Sampling and Estimation</u> <ul style="list-style-type: none">• Understand the distinction between a sample and a population and appreciate the necessity for randomness in choosing samples.• Calculate expectation and variance of the mean of a random sample.• Solve problems using central limit theorem where appropriate	Research and summarize findings with examples on real life application on population and samples.	https://revisionmaths.com/advanced-level-maths-revision/statistics/sampling https://www.bmj.com/about-bmj/resources-readers/publications/statistics-square-one/3-populations-and-samples



The Winchester School



Aim High Progress Study Programme _ (Year 13) –December _2024

<p>Pure Mathematics</p>	<p>Differentiation</p> <ul style="list-style-type: none"> Use the derivatives of e^x, $\ln x$, $\sin x$, $\cos x$, $\tan x$, $\tan^{-1} x$, together with constant multiples, sums, differences and composites Differentiate products and quotients Find and use the first derivative of a function which is defined parametrically or implicitly 	<p>Research on the application of differentiation in Architecture: An Architect Engineer uses integration in determining the amount of the necessary materials to construct curved shape constructions.</p> <p>Application in Medical Science: Biologists use differential calculus to determine the exact rate of growth in a bacterial culture when different variables such as temperature and food source are changed.</p> <ol style="list-style-type: none"> Application in Graphics: It is used to determine the rate of a chemical reaction and to determine some necessary information of Radioactive decay reaction. 	<p>https://pastpapers.papacambridge.com/viewer/caie/as-and-a-level-mathematics-9709-topical-questions-with-answers-paper-2-algebra-pdf-paper-2-answers-all-topics-pdf-paper-2-differentiation-pdf</p> <p>https://www.savemyexams.com/a-level/maths_pure-3/cie/20/topic-questions/4-differentiation/4-1-further-differentiation</p> <p>chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://pastpaperpenguin.com/wp-content/uploads/2024/04/a-implicit-differentiation.pdfhttps://drive.google.com/file/d/1MbUFsZrrgPBu_Lv5zwaw0qDhZ71BQjpR/view?pli=1</p>
<p>Applied Mathematics – Mechanics –</p>	<ul style="list-style-type: none"> use the definition of linear momentum and show understanding of its vector nature use conservation of linear momentum to solve problems that may be modelled as the direct impact of two bodies 	<p>Research on the real life applications of momentum</p> <p>Gun and Bullet Mechanism: The bullet firing mechanism of a gun tends to form a prominent example of conservation of momentum in real life. When the trigger of the gun is pulled, the internal mechanism of</p>	<p>https://pmt.physicsandmathstutor.com/download/Maths/A-level/M1/Topic-Qs/AQA/M1%20Momentum.pdf</p> <p>https://www.savemyexams.com/a-level/maths_mechanics/cie/20/topic-questions/5-momentum/5-1-momentum--collisions/-/-/medium/</p>



The Winchester School



Aim High Progress Study Programme _ (Year 13) –December _2024

		<p>the gun gets activated and a bullet gets fired in the forwarding direction.</p> <p>Billiards and Snooker: Billiards and snooker games tend to form yet another example of the applications that help easily demonstrate the law of conservation of momentum in real life. Both, billiards and snooker games appear to be similar as they are played on a similar type of game set-up; however, the difference between the two games is that billiards is played on a game table that has no pockets, while the game table of a snooker game contains multiple pockets.</p>	<p>https://www.examsolutions.net/tutorials/exam-questions-momentum/?level=A-Level&board=AQA&module=M1&topic=1661</p>
--	--	---	--