The Winchester School

Aim High Progress Study Programme _ (Year 12) –January_2023

Subject	Focus	Activities	Useful website
Accounting	• To analyse the structure of limited companies and the sources of raising capital. • To describe the type of businesses that would use of unit, job and batch costing system. • To apply costing concepts to make business decisions and recommendations.	• Prepare a sway presentation analyzing the structure of limited companies which should include the following – ➢ Features of limited companies ➢ Share capital - meaning of and accounting for ➢ Capital and revenue reserves ➢ Loan capital ➢ Preparation of internal final accounts and balance sheets of limited companies. • Present a write up on type of businesses that would use of unit, job and batch costing system. OR • Prepare a Ted Ed Flipped Lesson on the topic.	www.myaccountinglab.com, www.bized.co.uk www.cie.org.uk, http://www.accounting-world.com/ https://www.investopedia.com/ https://study.com/search/text/academy.html?q=accounting#/top results/accounting
Arabic	**مراجعة على أنواع التشبيه والاستعارة** **(أثراء)**	**ارسم خريطة ذهنية موضحاً فيها انواع التشبيه مع التمثيل** **عبرعن المواقف بجمل من إنشائك تحوي التشبيه -**	https://www.youtube.com/watch?v=Mat6R0toiqI

The Winchester School

Aim High Progress Study Programme _ (Year 12) –January_2023

	Learning objectives: **أن يقارن بين أنواع التشبيهات** **. و التشبيه التمثيلي** **أن يحلل التشبيه التمثيلي موضحا موطن الجمال فيه.** **- أن ينتج فقرة تتضمنه.** *** أن يتعرف الاستعارة ويستخدمها في كتابة فقرة** TOPIC **قصة الحرباء** ما لن يأتي عبر النافذة Learning objectives: **أن يحلل القصة تحليلا أدبيا .** **أن يتعرف المفارقة في القصة .**	**مثّل لكل نوع من أنواع التشبيه.** **- حول الأمثلة من تشبيه تام أوبليغ إلى تشبيه تمثيلي والعكس.** **- يفتح المعلم باب الحوار المنظم للاستماع إلى ملاحظات الطلاب حول المفاهيم النحوية التى تعلموها** **تحليل القصة** . وضع نهاية اخرى للقصة . استنتاج الدلالات تعبيرية للكلمات . كتابة القصة من وجهة نظر أخرى	https://www.youtube.com/watch?v=ZwGIxw4ik0M https://www.youtube.com/watch?v=H4MGzCuUKEs

The Winchester School

Aim High Progress Study Programme _ (Year 12) –January_2023

	أن يستنتج الدلالات التعبيرية للعبارات . **أن يوظف الطالب البدل في فقرة**		
Islamic Studies **Arabs**	TOPIC: التواصل الإجتماعي سلوك وآداب- البيوع المحرمة Learning objectives: يبين المعنى الإجمالي للآيات يستنتج ضوابط دخول بيوت الآخرين يبين بعض البيوع المحرمة يوضح الأدلة على تحريم هذه البيوع	يستنتج ثمرات غض البصر على الفرد والمجتمع يحفظ الآيات القرآنية مراعيًا أحكام التلاوة يستنتج الحكمة من تحريم هذه البيوع يعبر عن حرصه على تجنب هذه البيوع	https://www.youtube.com/watch?v=3KNd1tw2nxE https://www.youtube.com/watch?v=DOwWsVAJ8Uk&t=68s
Islamic Studies **Non -Arabs**	TOPIC: 1. THE METHADOLOGY OF FAMILY RAISING IN ISLAM. Learning objectives: • To elucidate a balanced family system in Islam • To analyze individual's responsibility towards family	Write an article that shows how important is a happy and balanced family to build a happy and balanced society.add one hadeeth and an example from seerah that shows the importance of a happy , balanced family. Write down an essay on the virtues of being polite to others and how the life of prophet (p.b.u.h) can help us to improve our behaviour towards others society.	https://www.youtube.com/watch?v=YU87qBdkMVU&t=326s&ab_channel=QuranWeekly

The Winchester School

Aim High Progress Study Programme _ (Year 12) –January_2023

	• TOPIC: ALLAH'S MESSENGER AND SOCIAL LIFE Learning objectives: • To signify the keenness of Prophet (P.B.U.H) on building coherent society. • -To infer a link between communal peace and the development of Islamic State.		https://www.youtube.com/watch?v=1Ml_Zb-D6Xw&ab_channel=islamtv
Biology	**<u>Transport in Mammals</u>** • Explain the relationship between the structure and function of arteries, veins and capillaries. • Describe the role of haemoglobin in carrying oxygen and carbon dioxide with reference to the role of carbonic anhydrase, the formation of haemoglobinic acid and carbaminohaemoglobin.	• Diagrammatically explain the structure of heart, highlighting the differences in chambers. • Using Bloom's taxonomy to create different level questions on Transport in mammals. • Make plan diagrams of the structure of arteries, veins and capillaries using photomicrographs, showing the distribution of various tissues. • Bullet point the significance of Bohrs effect.	https://alevelnotes.com/notes/biology/exchange-and-transport/transport-in-animals https://alevelnotes.com/notes/biology/exchange-and-transport/transport-in-animals https://alevelnotes.com/notes/biology/exchange-and-transport/transport-in-animals https://www.youtube.com/watch?v=7bUa3eMIyRk

Aim High Progress Study Programme _ (Year 12) –January_2023

	• Describe and explain the significance of the oxygen dissociation curves of adult haemoglobin at different carbon dioxide concentrations (the Bohr effect). • Explain the differences in the thickness of the walls of the different chambers in terms of their functions with reference to resistance to flow. • Explain how heart action is initiated and controlled (reference should be made to the sinoatrial node, the atrioventricular node and the Purkyne tissue. **The Cell Cycle:** • To describe the structure of a chromosome, limited to DNA, histone proteins, chromatids, centromere and telomeres. • To explain the importance of mitosis in the production of genetically identical cells, growth, cell replacement, repair of	• Predict and draw the oxygen dissociation curve for people staying at high altitude. • Create a model of mitotic cycle including all the stages. • Create a big wheel of mitotic cycle to learn more about each stages. • For all music lovers! Create a rap on mitotic cycle. • Students can make a jigsaw puzzle on the significance of mitosis.	https://www.youtube.com/watch?v=wQ2eCRN02f4 • https://www.khanacademy.org/science/biology/structure-of-a-cell#cytoskeleton-junctions-and-extracellular-structures • https://www.pinterest.com/pin/AWcOObfxyUDe7EbxhdRH4B4aF5ufa3ZLUXNfzkrv8OAzd6PC935YiGE/ • https://www.pinterest.com/pin/539306124111951378

Aim High Progress Study Programme _ (Year 12) –January_2023

	tissues and asexual reproduction. • To outline the significance of mitosis in cell replacement and tissue repair by stem cells and state that uncontrolled cell division can result in the formation of a tumor. • To describe, with the aid of photomicrographs and diagrams, the behavior of chromosomes in plant and animal cells during the mitotic cell cycle.	• Students can make a case study on the chromosomal disorders in various case. • To prepare microscopic slides using onion root tip squash to observe the different mitotic stages	• https://www.youtube.com/watch?v=pOsAbTi9tHw&feature=youtube_gdata_player • https://www.pinterest.com/pin/ARWd9Q1nOF4ReNCKu4MPLUR9ZzPNgP9tnb52Rlk03tfaHAlPlXOc3ws/ • http://quantumneurology.com/case-study-chromosomal-disorder-mosaic-trisomy-22/ • https://www.nature.com/scitable/forums/genetics-generation/case-study-in-genetics-and-mental-illness-104902581 • http://www.nuffieldfoundation.org/practical-biology/investigating-mitosis-allium-root-tip-squash

The Winchester School

Aim High Progress Study Programme _ (Year 12) –January_2023

Business Studies	Topic – Management and Managers • To critically evaluate the role of managers using Mintzberg and Henri Fayol's management functions.	Research management by interviewing a local manager (parent, relative, friend, etc.), or by doing equivalent internet research. Learners to find out what the manager does to carry out the following management functions: • setting objectives and planning • organizing resources • directing and motivating staff • coordinating activities • controlling and measuring performance. Present your findings in the form of a Report or Sway Presentation.	Video clip on Mintzberg to introduce learners to the functions of management. www.youtube.com/watch?v=_NRWtd_SiU8 – video clip on Henry Mintzberg. Video clips about Henri Fayol's management functions. Henri Fayol's Principles of Management – YouTube Fayol's Principles of Management - Simplest Explanation Ever – YouTube
Chemistry	GROUP 17: • To explain the trend in volatility of chlorine, bromine, and iodine. • To describe the relative reactivity of the elements as oxidizing agents • To describe the relative thermal stabilities of the hydrides in terms of bond energies	• Write the chemical equations of group 17 elements along with the observations • Prepare an Infographic poster on the concept of disproportionation • Give some real life applications for the uses of halogens	• https://pmt.physicsandmathstutor.com/download/Chemistry/A-level/Notes/CIE/AS-Inorganic-Chemistry/Detailed/11.%20Group%2017.pdf • https://www.youtube.com/watch?v=ro_VAWKmtwU

Aim High Progress Study Programme _ (Year 12) –January_2023

	• To describe the reactions of halide ions, chlorine • To describe the industrial importance of halogens and their compounds REDOX REACTIONS: • To calculate oxidation numbers of elements in compounds and ions. • To describe and explain redox processes in terms of electron transfer and changes in oxidation number • To use changes in oxidation numbers to help balance chemical equations. NITROGEN AND SULPHUR: • To describe and explain: (i) the basicity of ammonia (ii) (ii) the structure of the ammonium ion and its	• Write the chemical equations of group 17 elements along with the observations • Prepare an Infographic poster on the concept of disproportionation • Give some real life applications for the uses of halogens • Create a checklist for determining the oxidation number of elements in compounds. • Balancing chemical equations using change in oxidation number. • Writing half-equations for species oxidised and species reduced. • Give real life applications of redox reactions.	• https://www.youtube.com/watch?v=X54ysz2UtWU • https://www.youtube.com/watch?v=w1DEsls3MD0 • https://www.youtube.com/watch?v=pBRx7DvBLBQ • https://www.youtube.com/watch?v=9v5Y3h8Jm0I • https://chem.libretexts.org/Bookshelves/Analytical_Chemistry/Supplemental_Modules_(Analytical_Chemistry)/Electrochemistry/Redox_Chemistry/Oxidation-Reduction_Reactions • https://alevelchemistry.co.uk/notes/haloalkanes/ • https://www.youtube.com/watch?v=D06STGlrBJs

Aim High Progress Study Programme _ (Year 12) –January_2023

	formation by an acid-base reaction (iii) the displacement of ammonia from its salts • To identify the industrial importance of ammonia and nitrogen compounds derived from ammonia. • To explain the environmental consequences of the uncontrolled use of nitrate fertilisers • To explain the natural and man-made occurrences of oxides of nitrogen and their catalytic removal from the exhaust gases of internal combustion engines. HALOGENOALKANES: • To explain the chemistry of halogenoalkanes as exemplified by: the following nucleophilic substitution reactions : 1) hydrolysis, formation of nitriles, formation of	• Investigate ammonium salts practically heating them alone and with a base such as sodium or calcium hydroxide. • Make molecular model of ammonia and the ammonium ion and draw 'dot and cross' diagrams of their bonding. • Create a quiz on Habers process and contact process. • Prepare an infographic poster on car exhaust pollution and the effect of catalytic converters. • Draw a poster on the role of SO2 in acid rain and the reaction of NO2 with SO2 in the atmosphere. • Create a mind map or table of reactions of halogenoalkanes, including the equations and conditions for each. • Investigate the kinetics of SN1 and SN2 reactions.	

	primary amines by reaction with ammonia • the elimination of hydrogen bromide from 2-bromopropane • To describe the SN1 and SN2 mechanisms of nucleophilic substitution in halogenoalkanes including the inductive effects of alkyl groups • To explain that primary halogenoalkanes tend to react via the SN2 mechanism; tertiary halogenoalkanes via the SN1 mechanism and secondary halogenoalkanes by a mixture of the two, depending on structure • To interpret the different reactivities of halogenoalkanes	• Solve problems based on equations, to - predict a mechanism, SN1 or SN2 - justify their choice, explaining why it's SN1 or SN2 - describe the mechanisms with curly arrows etc. • To investigate practically the speed that the silver halide precipitates appear when halogenoalkanes are put into ethanolic aqueous silver nitrate, followed by determining the bond energies of the carbon-halogen bond to explain their observations. • Create an infographic poster to spread awareness about the effect of chlorofluoroalkanes on the ozone layer.	

Aim High Progress Study Programme _ (Year 12) –January_2023

	• To recognise the concern about the effect of chlorofluoroalkanes on the ozone layer.		

Computer science	Programing concepts:
	• To use a 'count controlled' loop: - given pseudocode will use the following structure:
	FOR <identifier> ← <value1> TO <value2>
	<statement(s)>
	ENDFOR
	- alternatively:
	FOR <identifier> ← <value1> TO <value2> STEP <value3>
	<statement(s)>
	ENDFOR
	• to use a 'post-condition' loop: - given pseudocode will use the following structure:
	REPEAT
		Encourage your child to develop a software project to include the following:
		For example, if the chosen programming language is Python, give a program written in Java. Ask learners to translate the program in the chosen programming language. The result should be tested to see if it produces the correct output.
			Commenting programs:
			http://en.wikibooks.org/wiki/Alevel_Computing/AQA/Problem_Solving,_Programming,_Data_Representation_and_Practical_Exercise/Fundamentals_of_Programming/Comments
			Inputs and outputs in programming:
			http://en.wikibooks.org/wiki/Alevel_Computing/AQA/Problem_Solving,_Programming,_Data_Representation_and_Practical_Exercise/Fundamentals_of_Programming/Input_and_output

The Winchester School

Aim High Progress Study Programme _ (Year 12) –January_2023

Economics	• Methods and Effects of government intervention in markets • Addressing Income and wealth inequality • AD/AS analysis of the impact of supply-side policy on the equilibrium national income and the level of real output, the price level and employment • The distinction between absolute and comparative advantage. • Benefits of specialisation and free trade.	• Learners consider why public goods are provided by government are provided by the government. • Students collect data of a few economies (particularly from their own region) and compare their Gini Coefficient and Lorenz curve for at least two years and comment which countries have performed better or poorly in reducing income inequalities. • Students discuss using case studies from newspapers on maximum price and minimum prices • Discuss the impact of indirect tax using elastic and inelastic demand curve. • Class discussion which identifies some typical goods provided directly by governments. • Learners demonstrate both maximum and minimum price effects by drawing appropriate graphs on the whiteboard • Class discussion on whether direcrt provisison of goods are effective through government. • Learners research problems with national debt. Put results into a table of advantages and disadvantages.	https://youtu.be/3lrJYTsKdUM https://youtu.be/v4GESvq28Io https://worldpopulationreview.com/country-rankings/gini-coefficient-by-country http://www.tutor2u.net/economics/revision-notes/as-marketfailure-maximum-prices.html https://www.tutor2u.net/economics/reference/inequality-of-income-and-wealth https://www.tutor2u.net/economics/reference/inequality-of-income-and-wealth https://www.tutor2u.net/economics/reference/progressive-and-regressive-taxes https://www.tutor2u.net/search?q=fiscal+policy

Aim High Progress Study Programme _ (Year 12) –January_2023

		• Using data from different countries eexplain marginal rates of taxation (mrt) and average rates of taxation (art). In groups, learners: • research their own or another allocated country's changes in the terms of trade over the last twenty years • determine whether they have improved or deteriorated over this period and whether they have been volatile or stable • assess the implications for the future development of their given economy.	http://www.businesseconomics.com/country-data.html http://www.economicsonline.co.uk/Global_economics/Policies_to_promote_development.html
Mathematics Edexcel	<u>Differentiation</u> • To calculate the gradient at a point on a curve, given its equation • To find the equations of the tangent and normal to a curve at a point. • To interpret a derivative as a rate of change of one variable with respect to another. • To apply derivatives in solving real – world problems	Make a list of derivatives of simple functions Research on the applications of differentiation. How do you find maximum and minimum points using differentiation? Make notes to summarize learning that includes solved examples	**https://www.bbc.com/bitesize/guides/zyj77ty/revision/1** **https://revisionmaths.com/advanced-level-maths-revision/pure-maths/calculus/differentiation** **https://www.britannica.com/science/analysis-mathematics/Calculus#ref731796** **https://www.intmath.com/applications-differentiation/applications-of-differentiation-intro.php**

Aim High Progress Study Programme _ (Year 12) –January_2023

	• To use second derivatives to distinguish minimum and maximum points.		**http://www.statistica.com.au/differentiation_max_and_min.html**
Statistics	Topic: Topic: Discrete random variables(Binomial and Geometric distribution) • Calculate binomial probabilities using the notation X~B(n,p) • Calculate expectation and variance for a binomial distribution. • Calculate geometric probabilities using the notation X~Geo(x) • Calculate expectation of a geometric distribution • Recognise practical situations where these distributions are suitable models. Permutation and Combinations	Model a situation on discrete random variable from a real life situation. Summarise your learning and prepare notes on discrete random variables with examples. Summarise your learning and prepare mind map using an ICT tool using binomial distribution with examples. Prepare notes on how to distinguish between permutation and combination using real life situations.	https://revisionmaths.com/advanced-level-maths-revision/statistics/normal-distribution https://revisionmaths.com/advanced-level-maths-revision/statistics/permutations-and-combinations https://www.youtube.com/watch?v=2tuBREK_mgE https://www.youtube.com/watch?v=zQAmwgZgObk

Aim High Progress Study Programme _ (Year 12) –January_2023

	• Understand the terms permutation and combination, and solve simple problems involving selections • Solve problems about arrangements of objects in a line, including those involving repetition and restriction • Evaluate probabilities with the calculations using permutation and combination		
Psychology	Topic- Learning Approaches: Behaviors can be learnt (Aggression)	Create a presentation on the justification of Bandura et. al in relation to the topic mentioned.	https://youtu.be/XTz-00XfKrI

The Winchester School

Aim High Progress Study Programme _ (Year 12) –January_2023

Physics	Waves • To understand that energy is transferred by a progressive wave. • To analyse and interpret graphical representations of transverse and longitudinal waves. • To know the experimental arrangement of Young's double slit experiment.	• Describe how to measure the frequency of sound waves using cathode ray oscilloscope • Compare the diffraction pattern of water waves and light waves. . • State the properties of electromagnetic waves. • In Young double-slit experiment, state the effect of -Using slits of narrower width (but the same separation) -Using slits with smaller separation but of same width.	• www.acoustics.salford.ac.uk/feschools/waves/contents.php • https://www.islandphysics.com/waves-and-sound.html • http://www.physicsclassroom.com/class/light/Lesson-3/Young-s-Experiment
English Language	Discursive/ Argumentative writing	Research and discuss on topics. a few examples are: Is a lottery a good idea? Do curfews keep teens out of trouble? Are law enforcement cameras an invasion of privacy? Are we too dependent on computers?	http://learn.lexiconic.net/essayspers.htm

The Winchester School

Aim High Progress Study Programme _ (Year 12) –January_2023

		Then give yourself 1 hour to write on one of the topics.	
Art and Design	AO1, AO2 and AO3 learners to explore and build on their subject of interest. • To encourage independent expression and the development of a critical, reflective practice. • To accommodate a wide range of abilities, materials and resources, and allow the different skills to be fully exploited critically.	• Communication: purposeful trials of art works to communicate, from the simplest sketch to the most complex work. • The need to understand the relationship about the chosen subject and the works that will build on critical and purposeful influences transformed into original outcome. • To demonstrate understanding of conveying a personal response though fine art, working to a theme and considering artistic constraints and problems.	www.studentartguide.com
Information Technology	Theory: Hardware and software • Discussion on user Interfaces • Types of software • Differentiate between compilers and Interpreters.	Activities: Students to create presentations on hardware and software and highlight key points on types of hardware and software. Students to work on advanced Database and spreadsheet concepts and Past paper Practice.	https://www.cambridgeinternational.o rg/programmes-and- qualifications/cambridge-internationalas-and-a-level-information-technology9626/\

The Winchester School

Aim High Progress Study Programme _ (Year 12) –January_2023

	Esafety and Heath and safety Describe how personal data can be gathered by unauthorized persons (including: by smishing, vishing, phishing and pharming), and how this might be prevented Discuss why Esafety is necessary Describe malware issues (including: Trojan horse, worms, spyware, adware, rootkit, malicious bots, ransomware) Describe a range of potential	Describe how typical features found in sound editing software are used in practice • Describe how file sizes depend on sampling rate and sampling resolution.	