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Aim High Progress Study Programme _ (Year 13) -October _2021

Subject	Focus	Activities	Useful website
Arabic	TOPIC: التصوير الفني في القرآن الكريم لله أشد حبًا (Learning objectives: * أن يحلل النص القرآني تحليلا أدبيا . * أن يحدد الصورة الفنية في النص القرآني * أن يقارن بين نصين قرآنيين مقارنة أدبية * أن يصف الحالة النفسية للرجل في بعض المواقف . * أن يحدد دور التصوير والقيم البلاغية في الحديث الشريف . - أن يقارن بين نصين من حيت الصورة الفنية	يقرأ الآيات قراءة صحيحة منغمة يبحث عن مواضع أخرى للتصوير الفني في القرآن يشرح الأمثلة التي توصل إليها في القرآن يحلل أهمية أسلوب التصوير في فهم المعنى يطبق استراتيجية التصوير وضرب الأمثال بأمثلة من القرآن والحديث يستخرج القيم البلاغية في الحديث الشريف يقارن بين الصورة في هذا الحديث وحديث أصحاب السفينة	https://www.youtube.com/watch?v=t3OfUrXNvcQ https://www.youtube.com/watch?v=A9iZaJZBRqU https://www.youtube.com/watch?v=78-GlWxUwwY https://www.youtube.com/watch?v=xF9ZramPvHg
Islamic Studies (Arabs)	TOPIC: التطرف-الفراق بين الزوجين **Learning objectives:**	يحفظ سورة النور يبحث عن أخطار التطرف على الفرد والمجتمع كتب بحثا عن عن الطلاق وانواعة	*www.mogatel.com*

	ن يبين المقصود بالتطرف أن يوضح موقف الاسلام من التطرف أن يستنبط الحكمة من تحريم التطرف أن يوضح أسباب التفريق أن يبدي رأيه في التفريق بين الزوجين	اكتب بحثًا عن دورك في القضاء على الارهاب	https://www.youtube.com/watch?v=ocvpHdaXldk https://www.youtube.com/watch?v=8f3r7f5_VmA *https://www.youtube.com/watch?v=wp6Zk8pCNBI*
Islamic Studies **Non Arabs**	TOPIC: PROPHET (P.B.U.H) AS A ROLE MODEL **Learning objectives:** To contemplate the marvelous character of our Prophet (P.B.U.H). • -To comprehend the importance of strengthening social ties. • To analyse the positive strategies of Prophet (P.B.U.H) towards social ties	Search and write an article about the benefits a society can achieve while developing social Cohesion among people of the society (THAT IS THE IMPORTANT PART OF PROPHET'S (TEACHINGS) Write a journal based on the importance of the role of sunnah in understanding the Quran.	https://www.youtube.com/watch?v=HynIzhSAS-g https://www.youtube.com/watch?v=8RlQWIhZLhc&t=1s

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	(by referencing Quran, Ahadeeth, Seerah, Day-To=Day Lives **TOPIC-** THE DIVINE LAWS- (As-Sunan-Ar-Rabainyah) **LEARNING OBJECTIVES-** - To learn about the divine laws by understanding the hadeeth - - To comprehend the importance and characteristics of divine laws. - To evaluate the role of divine laws in character building - (by referencing Quran, Ahadeeth, Seerah, Day-To=Day Lives.		
Chemistry	**Further Aspects of Equilibria:** - To outline the relationship between pH, Ka, pKa and Kw and use them in calculations. - To choose an appropriate indicator for acid-base titration. - To determine the pH of buffer solutions and outline their uses in daily life.	- Construct titration curves for strong acid-strong base, strong acid-weak base, weak acid-strong base, weak acid-weak base titrations, justifying the choice of indicator used in each titration.	http://www.a-levelchemistry.co.uk/42-equilibria.html http://www.chemguide.co.uk/physical/equilibmenu.html http://www.chemguide.co.uk/physical/acidbaseeqia/buffers.html http://alevelchem.com/aqa_a_level_chemistry/unit3.4/s3403/05.htm http://www.docbrown.info/page07/equilibria4.htm

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• To use solubility product for sparingly soluble salts and justify the effect of common ion. • To deduce partition coefficient (Kpc) for a solute partitioned between two immiscible solvents and use it in calculations. **Chemistry of Carboxylic acids and Acyl chlorides:** • To outline the reactions of carboxylic acids in the formation Of acyl chlorides. • To recognize the ability of some carboxylic acids to be further oxidized • To deduce the relative acidities of carboxylic acids, phenols and alcohols • To apply the concept of electronegativity to explain the acidities of chlorine-substituted ethanoic acids. • To describe the hydrolysis of acyl chlorides • To describe the reactions of acyl chlorides with alcohols, phenols, ammonia and primary amines	• Write an article on "Role of Buffers." • Create a research paper on the importance of common ion effect (give some real life examples). • Write solubility product expressions for five sparingly soluble salts • Solve complex questions based on Ka, pKa, Kw, Ksp, and Kpc from past papers. • Make a power-point presentation on chromatography and the principle of partition coefficient. • Practice writing names of derivatives of carboxylic acids. • Create a checklist for nomenclature of derivatives of carboxylic acids.	http://study.com/academy/lesson/partition-coefficient-definition-and-calculation.html https://chem.libretexts.org/Textbook_Maps/Organic_Chemistry/Map%3A_Organic_Chemistry_(McMurry)/Chapter_21%3A_Carboxylic_Acid_Derivatives%3A_Nucleophilic_Acyl_Substitution_Reactions/21.01_Naming_Carboxylic_Acid_Derivatives https://www.britannica.com/science/carboxylic-acid

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	• To analyze the relative ease of hydrolysis of acyl chlorides, alkyl chlorides and aryl chlorides including the condensation (addition-elimination) mechanism for the hydrolysis of acyl chlorides	• Compare the physical and chemical properties of derivatives of carboxylic acids, giving a justifications for your choice. • Design step by step animation to show reaction mechanism that operates in acyl chlorides. Clearly showing curly arrows, partial charges and lone pair of electrons. • Compare and contrast relative ease of hydrolysis of acyl chlorides, alkyl chlorides and aryl chlorides including the condensation mechanism for the hydrolysis of acyl chlorides • Write an article for newspaper to discuss the importance of derivatives of acyl chlorides.	https://www.chemguide.co.uk/mechanisms/addelim/alcohol.html https://en.wikipedia.org/wiki/Acyl_chloride
Biology	**PHOTOSYNTHESIS:** • To Elucidate the three steps of Light dependent reaction and signify it over light independent reaction.	• Schematically illustrate the purpose of photosynthesis and transfer of energy from light to complex organic molecules.	• http://www.biologymad.com/ • http://faculty.uca.edu/johnc/Chloroplast_and_microbodies.jpg

	• To justify the independence of Light independent reaction with emphasis on the steps involved. • To elaborate the adaptations of CAM plants/the biochemistry of C4 **Selection and evolution:** o Discuss in groups how Darwin, using Darwin's	• Interpret graphs showing the effects of limiting factors. • Draw a labelled diagram of a palisade cell and a chloroplast and write a summary of how they are adapted for photosynthesis.5. Produce an annotated diagram of the light-dependent stage. • Add bullet points to build understanding of photolysis, photosystems, chain of electron carriers / ATP production and reduction of NADP. • Investigate the effect of light intensity and light wavelength on the Hill reaction, using a very simple protocol. • Give a brief outline of the main types of photosynthetic pigments, distinguishing between primary and accessory pigments. • Sketch out absorption and action spectra, explaining the similarities and differences between the two.	• http://www.teachnet.ie/foneill/cyclic.html • http://www.saps.plantsci.cam.ac.uk/worksheets/ssheets/ssheet10.htm • http://www.wiley.com/college/boyer/0470003790/animations/photosynthesis/photosynthesis.htm

	finches as an example, suggested that isolation of populations leads to speciation. ○ Use drawings / photographs of Darwin's finches to annotate to explain speciation by isolation. ○ Research Darwin's mockingbirds,	• Create a mind map on the factors influencing selection and variation. • Compare between natural selection and artificial selection. • Make a presentation on the selective breeding, focusing on it's commercial aspect.	• https://www.youtube.com/watch?v=aTftyFboC_M • https://www.youtube.com/watch?v=fHS-OY9XDZc https://www.huffingtonpost.com/james-a-shapiro/variation-and-selection-w_b_1522314.html
Physics	**Capacitance** • To understand the function of capacitors in simple circuit. • To derive the formulae for combined capacitance in series and parallel circuits and solve problems using the capacitance formula • To deduce, from the area under a potential-charge graph, the equation for energy stored in a capacitor	• Research on Capacitors with solid dielectrics, Air capacitor and Electrolytic capacitor. State the uses of capacitors. • What is the effect of introducing a dielectric slab between the plates of a parallel plate capacitor	https://www.cambridgeinternational.org/ https://www.allaboutcircuits.com/worksheets/capacitance/ http://znotes.org/a2-physics/

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Heat and Thermodynamics		
• Compare the relative advantages and disadvantages of resistance and thermocouple thermometers as previously calibrated instruments • Explain using simple kinetic molecular model of matter: structure of solid liquids and gases. Melting and boiling take place without a change in temperature. • Understand the specific latent heat of vaporization is higher than specific latent heat of fusion for the same substance. • Define and use the concept of specific heat capacity and specific latent heat, identify the main principles of its determination by electrical methods. • Show an understanding that internal energy is determined by the state of the system and that it can be expressed as the sum of a random distribution of kinetic	• Design experimental set up to determine specific heat capacity using calorimeter • Compare latent heat of steam and ice • Research on use of heat energy to mechanical energy, in automobile industries • Calculate internal energy of a system doing work • Determine the temperature of a Bunsen flame using a thermocouple that requires calibration.	http://www.physicsatweb.com/rev.php?id=Simple%20Kinetic%20Molecular%20Model%20of%20Matter&v=true http://mrtremblaycambridge.weebly.com/p4-simple-kinetic-molecular-model-of-matter.html http://physicsnet.co.uk/a-level-physics-as-a2/thermal-physics/thermal-energy/ https://www.youtube.com/watch?v=ZwXtPW0gdD0 http://hyperphysics.phy-astr.gsu.edu/hbase/thermo/firlaw.html http://www.physics.usyd.edu.au/super/life_sciences/TP/TP-rev-questions.pdf

and potential energies associated with the molecules of a system.
- Relate a rise in temperature of a body to an increase in its internal energy $dU = q + W$

Quantum Physics
- To explain photoelectric phenomena in terms of photon energy and work function energy

- To recall and use the relation for the de Broglie wavelength $\lambda = h/p$

- To appreciate that, in a simple model of band theory, there are energy bands in solids

- To understand the terms valence band, conduction band and forbidden band (band gap)

To use simple band theory to explain the temperature dependence of the resistance of

Research on

- Use band theory to explain why the resistivity of an intrinsic semiconductor increases as the temperature decreases.
- When electromagnetic radiation of wavelength 2000nm is incident on a metal surface, the maximum kinetic energy of the electrons released is found to be 4.0×10^{-20}J. Determine the work function of the metal in Joules.
- Research on Why in commercial practice we always use the RMS value of AC and not the peak value or instantaneous value

www.cie.org.uk

www.s-cool.co.uk/a-level/physics/quantum-physics

www.physicsandmathstutor.com/physics-revision/alevel-cie/topic-25-26

http://www.youtube.com/watch?v=rXer6qidxQM

http://www.youtube.com/watch?v=ogSTvmouXkM&feature=player_embedded

	metals and of intrinsic semiconductors To use simple band theory to explain the dependence on light intensity of the resistance of an LDR	• What is the average power dissipated when a sinusoidal alternating current with a peak value of 3.0A flows through a 100 ohm resistor.	
Business Studies	• External influences on business activity. • To evaluate environmental and social audits.	Analyse the likely benefits to a company of your choice of publishing a social audit. 10 marks Discuss the view that `ethics can be made to pay` for all businesses. 16 marks	www.tutor2u.net www.dineshbakshi.com www.cie.org.uk www.slideshare.net
Accounting	To analyse the usefulness of Managerial Accounting in businesses and how it is different from Financial Accounting.	Research on the usefulness of Managerial Accounting and the main elements of Managerial Accounting and present your findings through a prezi.	www.myaccountinglab.com, www.bized.co.uk www.tutor2u.net www.cie.org.uk Accounting Text books
Economics	To analyze the relevance of economic efficiency in the context of modern-day economies.	Learning Menu on Economic Efficiency & Resource Allocation -	

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			Attempt any three tasks from the learning Menu –	www.tutor2u.net
			1.Prepare a Sway presentation or a Prezi on the TRAGEDY OF THE COMMONS with the help of relevant examples. Ted –Ed Lesson on Externalities.	www.dineshbakshi.com
			2. As a Management consultant you need to reduce costs by a third over the next 2 years for Jones & Tudor, a company in the fashion industry. Produce a Report that summarizes your suggestions to the company.	
			3. Research on any large infrastructure Project in Dubai and discuss the steps and difficulties involved in the Cost Benefit Analysis.	
			4 Read the Economic Appraisal of High Speed 2 on Page 140 & 141 and outline the steps in the COBA using the information given. Explain the limitations of the COBA. Share your findings on an A3 Poster.	
			5. Create an Infographic presentation on Cost Benefit Analysis illustrating the same with the help of real world examples.	www.cie.org.uk
				www.slideshare.net

		6. Draw a cartoon strip depicting the different reasons of market failure. 7. Watch the video clip https://www.youtube.com/watch?v=wnjx6KETmi4 and write a well- balanced newspaper article on "Climate Change is a classic example of market failure and an imminent threat rather than a hoax" 8. Using the Case study of Google /Microsoft /Apple or Amazon explain the policies/strategies the company might have adopted to achieve dynamic efficiency. Present your findings as a Pod cast or Video cast	
Pure mathematics	**Pure Mathematics 3** **Exponential and logarithms** • Understand the relationship between logarithms and indices,	**Pure Mathematics**	https://www.intmath.com/trigonometric-functions/8-applications-of-radians.php

	and use the laws of logarithms (excluding change of base) • Interpret the definition and properties of e ^{x} and lnx, including their relationship as inverse functions and their graphs • Apply logarithms to solve equations and inequalities in which the unknown appears in indices • Analyze and apply rules of logarithms to transform a given relationship to linear form, and hence determine unknown constants by considering the gradient and/or intercept. **Statistics 1** **Probability, Permutations and combinations** • Solve problems involving permutation and combinations of a set of objects • Evaluate probability in simple cases	Research on the application of logarithms in **measurement Scale: Richter, Decibel, etc.** Research on the application of logarithms to measure the acidic, basic or neutral of a substance that describes the chemical property in terms of pH value Research on the real-life application of logarithms in measuring sound intensity Research on the real-life application of logarithms in calculating complex values **Statistics 1** What is Bayer's theorem ?How does this related with conditional probability Model a situation on conditional probability from a real life situation. **Statistics 2** Research and summarise findings with examples on real life application of linear combination of random variables.	https://en.wikibooks.org/wiki/High_School_Trigonometry/Applications_of_Radian_Measure https://www.purplemath.com/modules/solvtrig.htm https://www.bbc.co.uk/bitesize/guides/zpkdd2p/revision/1 http://www.sosmath.com/algebra/solve/solve0/solvtrig.html **Statistics** https://revisionmaths.com/advanced-level-maths-revision/statistics/permutations-and-combinations

	• Apply sample space to evaluate the probability. • Add and multiply probability in appropriate cases. • Apply Venn diagrams and tree diagrams to calculate the probability. • Show that events are mutually exclusive or independent. • Able to calculate conditional probability using formula. • Model situations involving probability. **STATISTICS 2** **Linear combination of random variables** • Solve problems using the result of E(aX + b), Var(aX+b), E(aX+bY) and Var(aX+bY) • Define the distribution of X+Y ,if X and Y have independent poisson distribution • Define the distribution of aX+bY, if X and Y both are independently normal distributed	Make notes to summarise learning that includes formulae and solved examples. Research and summarise findings with examples on real life application of a probability density function.	https://revisionmaths.com/advanced-level-maths-revision/statistics/probability https://www.youtube.com/watch?v=wTlbovKpTME

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	Continuous random variables - understand the concept of a continuous random variable, and recall and use properties of a probability density function - use a probability density function to solve problems involving probabilities, and to calculate the mean and variance of a distribution. **Mechanics 1 :** **Forces and equilibrium** - identify the forces acting in a given situation - understand the vector nature of force, and find and use components and resultants - use the principle that, when a particle is in equilibrium, the vector sum of the forces acting	List down examples of population and sample. **Mechanics** Practice questions on resolving vectors with forces acting at different angles	**Mechanics** https://revisionmaths.com/advanced-level-maths-revision/mechanics/coefficient-friction#:~:text=When%20the%20frictional%20force%20is,to%20be%20in%20limiting%20equilibrium. https://www.examsolutions.net/tutorials/friction-limiting-equilibrium-coefficient-friction/

	is zero, or equivalently, that the sum of the components in any direction is zero - understand the concepts of limiting friction and limiting equilibrium, recall the definition of coefficient of friction, and use the relationship $F = \mu R$ or $F \leq \mu R$, as appropriate	Research on different real-life examples applying the concept of limiting equilibrium	
Psychology	Abnormal Psychology	- Assess the different explanations of schizophrenia and delusional disorder.	AS /A level Psychology textbook or any other General Psychology textbooks. https://www.verywellmind.com/what-is-the-biological-perspective-2794878
Sociology	To assess the sociological perspectives on Globalisation	Research on the sociologists and their theories on globalization. Make a graphic organizer to demonstrate your ideas. Translate the ideas into writing a journal entry on the	www.sociology.org.uk www.tes.co.uk

		perspectives and their relation to current global issues	
English Language	Linguistics	Research and create a visual presentation on the following topic: • What is linguistics? • How is the study of linguistics important? • List the names of some prominent linguists and their contribution to society. Research on the theories and make a note of the same.	www.google.com www.wikipedia.com
Art and Design	Higher-order thinking skills – analysis, critical thinking and problem-solving	Communication: purposeful trials of art works to communicate, from the simplest sketch to the most complex work. The need to understand the relationship about their work builds with the audience is influenced by many things, including their chosen media and methods.	www.studentartguide.com

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Information Technology	**Analysis and Design** • analyse and evaluate different methods of researching a situation (including: questionnaires, interviews, observation, document analysis) • describe the content of the requirements specification, system specification and design specification • identify a flow of data through a system and create a data flow diagram (DFD) and a system flowchart • design and evaluate data collection forms and screen layouts • design and evaluate validation routines • create a data dictionary for a given situation evaluate suitable hardware and software for a new system	Create a presentation to explain different methods of researching a situation including: questionnaires, interviews, observation, and document analysis. Create a word document to how to use the research data to determine what the data collection forms and screen layouts will look like – You need to explain the importance of knowing the fields, field types and lengths.	https://www.teach-ict.com/as_a2_ict_new/ocr/A2_G063/331_systems_cycle/slc_stages/miniweb/pg4.htm

Travel and Tourism	To Analyse and evaluate the importance of destination marketing taking into consideration 4P's of marketing.	Here's an opportunity to put your knowledge of the Four P's into practice! You will select one of the destinations for pleasure tourism. Create a poster and a brochure advertising your excursion.	Using the Internet, The Encyclopedia of DUBAI and other sources. Visit the sites, collect data, pick up brochures, etc
Computer Science	**System software:** To investigate how an OS can maximize the use of resources To explain the ways in which the user interface hides the complexities of the hardware from the user	Encourage your child to create a PowToon to include the following: ⬚ What are operating systems for (remembering the examples you have seen and worked with)? ⬚ What can all operating systems do? ⬚ Design an graphical user interface of his own which is user-friendly and can work on all smart devices.	http://courses.cs.vt.edu/~csonline/NumberSystems/Lessons/DecimalToBinaryConversion/index.htm http://en.wikibooks.org/wiki/A-level_Computing/AQA/Problem_Solving,_Programming,_Data_Representation_and_Practical_Exercise/Fundamentals_of_Data_Representation/Binary_number_system www.python.org.