



Subject	Focus	Activities	Useful Websites/Apps
Economics	<ul> <li>Research based work</li> <li>-To relate the theoretical understanding of macro concepts to real world examples</li> </ul>	Research and write a brief report on 'To what extent is the UAE Government's spending financed by borrowing from the central bank and commercial banks?	www.bized.co.uk www.tutor2u.net www.cie.org.uk www.projectsyndicate.com
		<ul> <li>Read the Article "Three Lessons from QE in Europe" and write an Article on the effectiveness of QE.</li> <li>Prepare a brief note on the state of the global economy</li> </ul>	https://www.project- syndicate.org/commentary/ecb- quantitative-easing-economic-political- impact-by-stefan-gerlach-2019-01 https://www.project- syndicate.org/commentary/global- economic-prospects-bleak-in-2019-by- kaushik-basu-2019-01
Accounting	<ul> <li>To interpret the use and importance of financial appraisal techniques in the investment decision making process</li> <li>To make recommendations as to how the performance of a business, as revealed by a business could be improved.</li> <li>Evaluate and apply sensitivity analysis techniques in capital investment proposals.</li> </ul>	<ul> <li>Prepare a Prezi presentation comprising the following –</li> <li>Interpretation of the meaning and features of consignment accounts.</li> <li>Reasons explaining why consignment is not a sale.</li> <li>Present a report on the usefulness of financial appraisal techniques in investment decision.</li> </ul>	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.h tml2g=accounting#/topresults/accounting





Business Studies	Topic – Contents of Published Accounts To make simple amendments to Income Statement and Statement of Financial Position from the given data	<ul> <li>Prepare a Ted Ed Flipped Lesson on the topic.</li> <li>Use the Internet to view the accounts of at least one well known public limited company.</li> <li>Compare the latest income statement and the Statement of financial position with those of the previous year.</li> <li>Make a note of the major changes, e.g. changes in the revenue, profit for the year, value of non-current assets etc.</li> <li>Read the 'notes to the accounts', which usually appear after the financial statements, to discover the reasons for these major changes.</li> </ul>	www.bized.co.uk www.tutor2u.net Newspapers and Magazines Text Book
Travel & Tourism	To analyse the role of marketing and promotion activities in launching the brand.	<ul> <li>Study the following two destination</li> <li>brand images. Which one appeals you</li> <li>most? Analyse your reaction to each</li> <li>brand image.</li> <li>1. Visit Seychelles brand logo</li> <li>2. Visit Maldives brand logo.</li> </ul>	<u>https://www.seychelles.travel/en/</u> <u>http://brandingsource.blogspot.com/2011</u> /10/new-logo-maldives-tourism.html





Physics	<ul> <li>To explain photoelectric phenomena in terms of photon energy and work function energy</li> <li>To recall and use the relation for the de Broglie wavelength λ = h/p</li> <li>To appreciate that, in a simple model of band theory, there are energy bands in solids</li> <li>To understand the terms valence band, conduction band and forbidden band (band gap)</li> <li>To use simple band theory to explain the temperature dependence of the resistance of metals and of intrinsic semiconductors</li> <li>To use simple band theory to explain the dependence on light intensity of the resistance of an LDR CT scan Understand the principle of computed tomography</li> </ul>	<ul> <li>Use band theory to explain why the resistivity of an intrinsic semiconductor increases as the temperature decreases.</li> <li>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 x 10<sup>-20</sup> J. Determine the work function of the metal in Joules.</li> <li>Research on Why in commercial practice we always use the RMS value of AC and not the peak value or instantaneous value</li> <li>What is the average power dissipated when a sinusoidal alternating current with a peak value of 3.0A flows through a 100 ohm resistor</li> </ul>	<ul> <li>www.cie.org.uk</li> <li>www.s-cool.co.uk/a- level/physics/quantum-physics</li> <li>https://link.springer.com/article/ 10.1134/1.1187514</li> <li>https://www.physics-and-radio- electronics.com/electronic- devices-and- circuits/introduction/energy- band-theory-in-solids.html</li> <li>https://radiopaedia.org/articles/ computed-tomography</li> <li>https://www.medicalnewstoday.com/ articles/153201.php</li> </ul>
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Chemistry	Reaction Kinetics:	<ul> <li>Describe how the image of an 8- voxel cube can be developed using CT scanning</li> <li>Plan an investigation to find the order of a reaction using</li> </ul>	https://study.com/academy/topic/chemis
	<ul> <li>To design an experimental technique to measure the rate of a reaction</li> <li>To determine the rate equation, order of reaction, rate constant, half-life of a reaction, rate-determining step.</li> <li>To construct and use rate equations of the form rate = k[A]<sup>m</sup>[B] <sup>n</sup> and find the rate constant</li> <li>To determine the value of rate constant using half-life method</li> <li>To predict the order that would result from a given reaction mechanism and vice versa</li> <li>To outline the different types of catalysis</li> </ul>	<ul> <li>order of a reaction using concentration of the reactant. Evaluate your method and identify the source of error.</li> <li>Draw graphs to represent first, second and zero order of a reaction (rate vs concentration and concentration vs time)</li> <li>Solve five numeral questions from Paper 4 based on using the rate law to find rate constant/order of reaction</li> <li>Prepare a write-up on applications of half-life method</li> <li>Make a Power-Point presentation on reaction mechanism and order of reaction</li> </ul>	http://www.a-levelchemistry.co.uk/41- kinetics.html https://www.chemguide.co.uk/physical/b asicrates/orders.html http://www.chemistryrules.me.uk/hfhf/hf hf3.htm https://chem.libretexts.org/Bookshelves/ Physical and Theoretical Chemistry Text book Maps/Supplemental Modules (Phy sical and Theoretical Chemistry)/Kinetic s/02%3A Reaction Rates/2.03%3A First- Order Reactions





<ul> <li>To devise multi-stage synthetic routes for preparing organic molecules using the reactions in the syllabus</li> <li><u>Analytical Techniques</u></li> </ul>	<ul> <li>Compare the two catalysis reactions – each involving the role of Fe<sup>+2</sup>/Fe<sup>+3</sup> ion</li> </ul>	<ul> <li>www.chemguide.co.uk http://www.rsc.org/learn- chemistry www.s-cool.co.uk</li> <li>www.teachable.net</li> <li>http://www.rsc.org/education</li> </ul>
<ul> <li>To explain and use the terms Rf value in thin layer chromatography and retention time in gas/liquid chromatography from chromatograms.</li> </ul>	<ul> <li>Using Mind maps prepare a summary of various reactions of each type of functional group.</li> </ul>	<ul> <li><u>http://alevelchem.com/aqa_a_lev_el_chemistry/unit3.4/s3411/05.ht_m</u></li> </ul>
<ul> <li>To interpret gas/liquid chromatograms in terms of the percentage composition of a mixture.</li> <li>To deduce the molecular mass of an organic molecule from the molecular ion peak in a mass spectrum.</li> <li>To deduce the number of carbon atoms in a compound using the M+1 peak.</li> <li>To deduce the presence of bromine and chlorine atoms in a compound using the M+2 peak.</li> </ul>	<ul> <li>Separation of the specific amino acids from a given mixture of them.</li> <li>Calculate the areas of the triangular peaks to estimate the proportion of components in the mixture</li> <li>Create a checklist of the order in which to make deductions from a mass spectrum.</li> </ul>	<ul> <li><u>http://www.docbrown.info/page0</u> <u>4/4_71atomMSintro.htm</u></li> <li><u>https://alevelnotes.com/notes/ch</u> <u>emistry/elements-of-life/mass-</u> <u>spectrometry</u></li> <li><u>http://alevelchem.com/</u></li> <li><u>http://www.rsc.org/learn-</u> <u>chemistry</u></li> <li><u>www.s-cool.co.uk</u></li> <li><u>www.teachable.net</u></li> </ul>





	<ul> <li>To suggest the identity of molecules formed by simple fragmentation in a given mass spectrum.</li> <li>To analyse a carbon-13 NMR spectrum of a simple molecule to deduce: <ul> <li>(i) the different environments of the carbon atoms present</li> <li>(ii) the possible structures for the molecule</li> <li>(iii) the different types of proton present using chemical shift values</li> <li>(iv) the relative numbers of each type of proton present from relative peak areas</li> <li>(v) the number of non-equivalent protons adjacent to a given proton from the splitting pattern, using the n + 1 rule</li> </ul> </li> <li>To predict the chemical shifts and splitting patterns of the protons in a given molecule</li> </ul>	<ul> <li>Make an infographic poster to explain M+1 and M+2 peaks and their significance</li> <li>Practice analysing the NMR spectra of various molecules.</li> <li>Work out the sub-atomic particles present in a deuterium atom.</li> <li>Interpret the splitting pattern of D2O.</li> <li>Visit to see an NMR spectrometer in action and observe what sort of spectra it produces.</li> </ul>	<ul> <li><u>http://www.rsc.org/learnchemistry//www.rsc.org/learnchemistry//w</u></li></ul>
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Biology	Genetic technology:		
	<ul> <li>To explain that genetic engineering is the deliberate manipulation of genetic material to modify specific characteristics of an organism.</li> <li>To explain the roles of restriction endonucleases, DNA ligase, plasmids, DNA polymerase and reverse transcriptase in the transfer of a gene into an organism.</li> <li>To explain why a promoter may have to be transferred into an organism as well as the desired gene.</li> <li>To explain how gene expression may be confirmed by the use of marker genes coding for fluorescent products.</li> <li>To explain that gene editing is a form of genetic engineering involving the insertion, deletion or replacement of DNA at specific sites in the genome.</li> <li>To describe and explain the steps involved in the polymerase chain reaction (PCR).</li> </ul>	<ul> <li>Schematically illustrate the steps involved in genetic engineering.</li> <li>Create flash cards on importance of various enzymes and their sources used in gene tranfer.</li> <li>Research in the databases that provide information about nucleotide sequences of genes and genomes, and amino acid sequences of proteins and protein structures.</li> <li>Diagrammatically explain the process of PCR and highlight its significance.</li> <li>Create a presentation on the process of gel electrophoresis and its significance along with microarrays in Biology.</li> </ul>	<ul> <li>https://www.youtube.com/watch ?v=ROUTROqFC8Q</li> <li>https://www.youtube.com/watch ?v=9fl4dcgE5EQ</li> <li>https://www.youtube.com/watch ?v=B3Pn8cgReug</li> <li>https://www.youtube.com/watch ?v=9RljrdaOUUc</li> <li>https://www.youtube.com/watch ?v=Rd-ypr9c6Ok</li> <li>https://www.youtube.com/watch ?v=mN5lvS96wNk</li> </ul>





	<ul> <li>To describe and explain how gel electrophoresis is used to separate DNA fragments of different lengths.</li> <li>To outline how microarrays are used in the analysis of genomes and in detecting mRNA in studies of gene expression.</li> </ul>		
Art and Design	<ul> <li>To develop and present from the inception to the critically analysed work.</li> </ul>	<ul> <li>Communication: purposeful trials of art works to communicate, develop and present from the inception to the critically analysed works. The need to understand the relationship about the work which is developed, influenced by chosen media and methods.</li> </ul>	<u>www.studentartguide.com</u>
English	• COMPARING AND CONTRASTING.	<ul> <li>Students will read the article provided in the link and watch the video sent as a link.</li> <li>They will write a passage stating the differences seen in the treatment of the subjects.</li> </ul>	<ul> <li><u>http://www.sciencemag.org/news/20</u> <u>17/01/baboonsshow-they-ve-got-</u> <u>another-building-block-language-</u> <u>vowellike-sounds</u></li> <li><u>https://www.youtube.com/watch?v=</u> <u>n77s85j-eeE</u></li> </ul>





Mathematics	Pure Mathematics	Research on the application of Complex	https://www.mathsisfun.com/numbers/
	COMPLEX NUMBERS	numbers in	complex-numbers.html
		Electrical engineering - Fourier	https://www.khanacademy.org/math/al
	• Understand the idea of a complex	transforms are used in	gebra2/x2ec2f6f830c9fb89:complex/x2e
	number, recall the meaning of the	understanding oscillations that	c2f6f830c9fb89:imaginary/v/introductio
	terms real part, imaginary part,	occur both in alternating current	<u>n-to-i-and-imaginary-numbers</u>
	modulus, argument, conjugate,	and in signals modulated by	https://tutorial.math.lamar.edu/classes/
	and use the fact that two complex	electromagnetic waves.	alg/ComplexNumbers.aspx
	numbers are equal if and only if	Quantum mechanics- A "particle"	https://www2.clarku.edu/faculty/djoyce
	both real and imaginary parts are	may be in a very well defined state	/complex/
	equal	(like an electron in atom), but still	https://www2.clarku.edu/faculty/djoyce
	Carry out operations of addition,	having no strictly defined	/complex/
	subtraction, multiplication and	coordinates. Not only that it's	https://mathworld.wolfram.com/Argand
	division of two complex numbers	impossible to measure the	Diagram.html#:~:text=An%20Argand%20
	expressed in Cartesian form x + iy	coordinates - the "particle" just	diagram%20is%20a,represents%20its%20
	Use the result that, for a	doesn't have them. Particle	<u>complex%20argument</u> .
	polynomial equation with real	without coordinates is not actually	https://www.sciencedirect.com/topics/
	coefficients, any non-real roots	a particle, it's something else.	mathematics/argand-diagram
	occur in conjugate pairs	• <b>Wass spectrometry</b> - finding out	
	Represent complex numbers	what materials are made of	
	geometrically by means of an	Image and movie	
	Argand diagram	compression (e.g. jpg, mp3)	
	Carry out operations of		
	multiplication and division of two	Equalisers for music which can	
	complex numbers expressed in	troble in your music	
	polar form $r(\cos\theta + i\sin\theta) \equiv re^{i\theta}$	treple in your music	
	Find the two square roots of a	1 Seismometers that detect	
	complex number	volcanoes	
		volcanoes	





	<ul> <li>Understand in simple terms the geometrical effects of conjugating a complex number and of adding, subtracting, multiplying and dividing two complex numbers Illustrate simple equations and inequalities involving complex numbers by means of loci in an Argand diagram</li> </ul>		
Statistics 1	<ul> <li>Topic: Normal Distribution and Permutation and Combinations</li> <li>Solve problems concerning a variable X, where X~N(μ, σ<sup>2</sup>)</li> <li>Recognise practical situations where the distribution is a suitable model.</li> <li>Understand the terms permutation and combination, and solve simple problems involving selections</li> <li>Solve problems about arrangements of objects in a line,</li> </ul>	Model a situation on normal distribution from a real-life situation. Summarise your learning and prepare notes on normal distribution with examples. Model a situation on permutation and combinations from real life situation. Prepare notes on how to distinguish between permutation and combination using real life situations.	https://revisionmaths.com/advanced- level-maths-revision/statistics/normal- distributionhttps://revisionmaths.com/advanced- level-maths- revision/statistics/permutations-and- combinationshttps://www.youtube.com/watch?v=2tuB REK_mgEhttps://www.youtube.com/watch?v=zQA mwgZgObk





Mechanics1	<ul> <li>including those involving repetition and restriction</li> <li>Evaluate probabilities with the calculations using permutation and combination</li> <li>Energy, Work and Power</li> <li>analyze the concepts of gravitational potential energy and kinetic energy, and use appropriate formulae</li> <li>understand and use the relationship between the change in energy of a system and the work done by the external forces, and use in appropriate cases the</li> </ul>	Make notes on cases where the motion may not be linear, e.g. a child on a smooth curved 'slide', where only overall energy changes need to be considered. solve problems involving the instantaneous acceleration of a car moving on a hill against a resistance.	https://www.physicsclassroom.com/calcp         ad/energy         https://revisionmaths.com/advanced-         level-maths-revision/mechanics/work-         energy-power         https://alevelmaths.co.uk/mechanics/wor         k-energy-and-power/
	<ul> <li>use the definition of power as the rate at which a force does work, and use the relationship between power, force and velocity for a force acting in the direction of motion</li> </ul>		





	<u>Hypothesis Tests</u>		
Statistics 2	<ul> <li>Understand the difference between one-tailed and two-tailed tests and the terms null hypothesis, alternative hypothesis, significance level, rejection region.</li> <li>Formulate hypothesis and carry out a hypothesis test in the context of single observation from a population which has a binomial or poisson distribution.</li> <li>Calculate the probabilities of making type I and Type II error.</li> </ul>	Research and summarise findings with examples on real life application on hypothesis testing. Make notes to summarise learning that includes formulae and solved examples.	https://stattrek.com/hypothesis- test/hypothesis-testing.aspx https://www.statisticssolutions.com/hypo thesis-testing/ https://www.khanacademy.org/math/stat istics-probability/significance-tests-one- sample/more-significance-testing- videos/v/hypothesis-testing-and-p-values





Information	Emerging Technology	Encourage your child to revise all theory	http://www.teach-
Technology	Role And Impact Of IT in Society	and practical topics and create notes based	ict.com/2016/A Level Computing/OCR H
		on the following topics	446/1 2 software/122 applications gen
	Networks	Theory	<u>eration/swdevelopment/miniweb/index.p</u> hp
	System Life Cycle	Emerging Technology	<u> </u>
	Project Management	<ul> <li>Role And Impact Of IT in Society</li> <li>Networks</li> </ul>	<u>http://www.teach-</u> ict.com/2016/A Level Computing/OCR H
		<ul> <li>System Life Cycle</li> </ul>	446/1 3 exchanging data/132 normalisa
		<ul> <li>Project Management</li> </ul>	tion/miniweb/index.php
		<ul> <li>Practical</li> <li>Graphics Creation</li> <li>Animation</li> <li>Mail merge</li> <li>Programming For the web</li> </ul>	http://www.teach- ict.com/2016/A Level Computing/OCR H 446/1 3 exchanging data/133 protocol/ miniweb/index.php
Computer Science	Pre-release material: Students will use the following concept to solve the pre-release material June 2021. To demonstrate an ability to solve a problem by writing appropriate facts and rules based on supplied information.	<ul> <li>Encourage your child to develop a software project to include the following using the scenario from pre-release material June 2021:</li> <li>Create a software database which can handle the files using Prolog concept.</li> </ul>	www.python.org Prolog: www.learnprolognow.org/lpnpage.php? pageid=implementations





	To demonstrate an ability to write code that can satisfy a goal using facts and rules		Tutorial guide to prolog: <u>www.learnprolognow.org/lpnpage.php?</u> <u>pageid=online</u>
Psychology	Consumer Behavior <ul> <li>To evaluate communication and advertising models</li> </ul>	<ul> <li>Research on all the models of communication and prepare a power point to describe each model supported by real life examples. Include an evaluation for each model.</li> </ul>	www.tes.co.uk
Sociology	<ul> <li>Globalisation</li> <li>To evaluate the Marxist and Feminist perspectives on who benefits from global crime.</li> </ul>	Research on the reasons for the emergence of global crime. Include the different sociological perspectives with special reference to Marxism and Feminism. Create a google doc to add the points of discussion in your report. Share the link with your peers.	www.sociology.org.uk





History	To explore activities related to cold War	Practice on the past papers	https://www.commonsense.org/education/le sson-plans/the-cold-war
Global perspectives	<ul> <li>To analyze various perspectives, using the sources to justify the arguments.</li> </ul>	<ul> <li>For your chosen report topic, you have already completed your research using the methods and methodology you indicated in your research log. You will write the 5000 words report to be submitted by the end of February.</li> <li>Read the samples provided again.</li> <li>Update the research log with all dates, tasks and evaluation.</li> <li>The report should contain:     <ul> <li>Well developed introduction of the issue and perspectives and your intended approach. reflection and conclusion</li> <li>citation consistent with your research log.</li> </ul> </li> </ul>	https://www.scribbr.com/dissertation/metho dology/