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Subject	Focus	Activities	Useful website
Accounting	To assess the meaning and features of consignment accounts	• Prepare a Prezi presentation comprising the following – ➢ Interpretation of the meaning and features of consignment accounts. ➢ Reasons explaining why consignment is not a sale. ➢ Explain the terms used in consignment accounts. • Present a report on the usefulness of financial appraisal techniques in investment decision. 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#/topresults/accounting
Biology	**Inherited Changes** • Solve Problems using genetic diagrams involving test crosses, dihybrid cross, X linked inheritance.	• Draw annotated diagrams, using colors or shading, to show how two adjacent cells (haploid number 2) can produce 4 genetically different gametes by independent assortment.	http://www.contexo.info/DNA_Basics/Meiosis.htm http://highered.mcgrawhill.com/sites/0072495855/student_view0/chapter28/animation__how_meiosis_works.html

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	• Use the chi-squared test to test the significance of differences between observed and expected results (the formula for the chi-squared test will be provided) (see Mathematical requirements) • To Outline causes and effects of various types of Mutation • To explore gene control in Prokaryotes and prokaryotes **Coordination:** • Compare the nervous and endocrine systems as communication systems, that co-ordinate 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.	• Create Models using different recyclable material to consolidate learning of: (i) independent assortment and crossing. (ii) Types of mutation. (iii) Gene regulation in prokaryotes and eukaryotes. 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. 4. Create a 10 quiz questions on the role of hormone in human body coordination.	https://www.youtube.com/watch?v=LuOaEe89_HE https://www.youtube.com/watch?v=N7_K0yl0Egk https://www.youtube.com/watch?v=eDbK0cxKKsk http://www2.estrellamountain.edu/faculty/farabee/biobk/BioBookNERV.html https://www.youtube.com/watch?v=e3Nq-P1ww5E https://www.youtube.com/watch?v=HYLyhXRp298, https://www.youtube.com/watch?v=L41TYxYUqqs

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	• Explain the sliding filament model of muscular contraction • Explain the roles of the hormones FSH, LH, estrogen and progesterone in controlling changes in the ovary and uterus. • Describe the role of gibberellin in the germination of wheat or barley		
Business Studies	Topic – Theories of Leadership To critically evaluate the key leadership theories and their contributions.	Learners to investigate each of the main theories of leadership. Each learner should prepare a presentation and notes handout for their given theory. For example: • train theories • behavioural theories • contingency theories • power and influence theories • transformational theories. Present should include the following:	www.bized.co.uk www.tutor2u.net www.mindtools.com/pages/article/leadership-theories.html – article about leadership theories.

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		• which leadership theory is most likely to be used in the armed forces? • which leadership theory is most likely to be used in a University? • which leadership theory might be most appropriate in a manufacturing factory? • which leadership theory might be most useful when managing people remotely?	
Travel and Tourism	To analyze obstacles in creating a brand and evaluate in context how these might limit the effectiveness of the brand or its success.	Make an extensive research on • How is funding different for Visit Florida and Visit England? Which is most likely to be effective and why? • What limitations are there for each?	www.campaignlive.co.uk/article/1101605/visitengland-funding-domestic-tourispromotion# www.orlandosentinel.com/news/politics/os-visit-florida-spending-tourism-20160326-story.html www.visitflorida.com/en-us/about-visit-florida.html

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Chemistry	**<u>Analytical Techniques</u>** • To explain and use the terms Rf value in thin layer chromatography and retention time in gas/liquid chromatography from chromatograms. • To interpret gas/liquid chromatograms in terms of the percentage composition of a mixture. • To analyze a carbon-13 NMR spectrum of a simple molecule to deduce: (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 **<u>Electrochemistry:</u>**	• 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. • 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 D_2O. • Visit to see an NMR spectrometer in action and observe what sort of spectra it produces.	• http://alevelchem.com/aqa_a_level_chemistry/unit3.4/s3411/05.htm • http://www.docbrown.info/page04/4_71atomMSintro.htm • http://alevelchem.com/ • 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

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	• 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 • To understand and use the equation $\Delta G^{\ominus} = -nE^{\ominus}_{cell}F$	• 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	https://www.chemguide.co.uk/inorganic/electrolysis/basiccalcs.html https://byjus.com/chemistry/standard-hydrogen-electrode/ http://www.dynamicscience.com.au/tester/solutions1/chemistry/redox/electrochemicalcellfromequan.htm https://chem.libretexts.org/Bookshelves/Introductory_Chemistry/Book%3A_Introductory_Chemistry_(CK-12)/23%3A_Electrochemistry/23.06%3A_Calculating_Standard_Cell_Potentials https://www.chem.tamu.edu/class/fyp/stone/tutorialnotefiles/electro/nernst.htm http://www.docbrown.info/page01/ExIndChem/electrochemistry11.htm

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		• Practice interrelating standard Gibbs free change with the electrochemical cell value.	
Economics	• Government Micro-economic intervention	**Complete any 2 of the following tasks. You could work in groups** • Find examples of firms that have either been nationalized or privatized, in your own country (or any other economy) and write a well-researched Article on whether you would make a strong case for privatization or Nationalization. • Research on the Kyoto Protocol and carbon trading and discuss how governments might intervene to correct market failure arising due to climate change issues. Examine the effectiveness of government intervention to correct market failure. Present your findings as an Editorial. • Research on the Behavioural insights and 'nudge' theory and analyze the	www.tutor2u.net • https://www.tutor2u.net/economics/reference/development-strategies-privatisation • https://drive.google.com/file/d/1Lut1LR68OvBfW-DUgrOx0JpXxTMJqwMh/view?usp=sharing https://www.tutor2u.net/economics/reference/development-strategies-privatisation https://drive.google.com/file/d/1Lut1LR68OvBfW-DUgrOx0JpXxTMJqwMh/view?usp=sharing

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		ways governments use 'nudge' theory to influence consumer behaviour for efficient resource allocation. Produce a Report based on your findings. • Prepare a Google slides PPT on Government measures to correct market failure and achieve efficient resource allocation. Analyze whether government intervention is the second -best policy since governments can also fail. • Critically evaluate the government policies aimed at redistribution of income and wealth and assess their effectiveness. Use real world examples from any country of your choice. Prepare a PPT or Report.	

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Pure Mathematics	INTEGRATION • To Extend the idea of 'reverse differentiation' to include the integration of e^{ax+b}, 1/ax b sin(ax + b), cos(ax + b), sec^2 (ax + b) and $1/a^2 + b^2$. • To Use trigonometrical relationships in carrying out integration • To Integrate rational functions by means of decomposition into partial fractions • To Recognize when an integrand can usefully be regarded as a product, and use integration by parts To Use a given substitution to simplify and evaluate either a definite or an indefinite integral.	Research on the application of integration An Architect Engineer uses integration in determining the amount of the necessary materials to construct curved shape constructions (e.g. dome over a sports arena) and also to measure the weight of that structure. In Electrical Engineering, Integration is used to determine the exact length of power cable needed to connect two substations, which are miles away from each other. In Physics, Integration is very much needed. For example, to calculate the Centre of Mass, Centre of Gravity and Mass Moment of Inertia of a sports utility vehicle. A graphics artist uses calculus to determine how different three-dimensional models will behave when subjected to rapidly changing conditions. It can create a realistic environment for movies or video games.	https://tutorial.math.lamar.edu/classes/calcii/integrationbyparts.aspx https://tutorial.math.lamar.edu/problems/calci/substitutionruleindefinite.aspx https://math.libretexts.org/Courses/Mount_Royal_University/MATH_1200%3A_Calculus_for_Scientists_I/4%3A_Integral_Calculus/4.1%3A_Integration_by_Substitution https://www.youtube.com/watch?v=PyLXFY3VkNE https://liavas.net/courses/calc1/files/Exp_log_trig_integration.pdf https://qedinsight.wordpress.com/2012/02/26/a-neat-trick-for-determining-the-integrals-of-expx-cos-x-and-expx-sin-x/ https://www.mathsisfun.com/calculus/integration-by-parts.html

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Statistics 1	**Topic: Discrete random variables(Binomial and Geometric distribution)** • To Calculate binomial probabilities using the notation X~B(n,p) • To Calculate expectation and variance for a binomial distribution. • To Calculate geometric probabilities using the notation X~Geo(x) • To Calculate expectation of a geometric distribution • To Recognize practical situations where these distributions are suitable models. **Permutation and Combinations** • To Understand the terms permutation and combination, and solve simple problems involving selections • To Solve problems about arrangements of objects in a	• 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 usion binomial 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/binomial-distribution https://revisionmaths.com/advanced-level-maths-revision/statistics/normal-distribution https://www.youtube.com/watch?v=HF9YCzoX8kU https://www.youtube.com/watch?v=y6wofZpuxfE

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	line, including those involving repetition and restriction • To Evaluate probabilities with the calculations using permutation and combination		
Statistics 2	**<u>Sampling and Estimation</u>** • To Understand the distinction between a sample and a population, and appreciate the necessity for randomness in choosing samples. • To Calculate expectation and variance of the mean of a random sample. • Solve problems using central limit theorem where appropriate • Calculate unbiased estimates of the population mean and variance	• Research and summarise findings with examples on real life application on population and samples. • Make notes to summarise learning that includes formulae and solved examples.	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 https://www.khanacademy.org/math/ap-statistics/gathering-data-ap/sampling-observational-studies/e/identifying-population-sample https://www.youtube.com/watch?v=Etp6km1JQi8 https://www.youtube.com/watch?v=LhOYQFtdc6c

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	Determine and interpret a confidence interval for a population mean and proportion.		
Mechanics	**<u>Work Energy, power</u>** • To Understand the concept of the work done by a force, and calculate the work done by a constant force when its point of application undergoes a displacement not necessarily parallel to the force • To Understand the concepts of gravitational potential energy and kinetic energy, and use appropriate formulae • To 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	Research on the application of power in the following 1. Mechanical Power: such as car engines, train engines, plane jets, etc. 2. Electric Power: all electric appliances, elevator motors, electric car engines, power lines, etc. 3. Power of Light Sources (visible and non-visible): household light bulbs, x-ray machines, gamma ray guns, radio transmitters, etc. 4. Thermal Power: steam engines, and turbine rotation. 5. Atomic Power: Polaris subs, atomic electric power plants, atomic bombs.	https://revisionmaths.com/advanced-level-maths-revision/mechanics/work-energy-power https://alevelmaths.co.uk/mechanics/work-energy-and-power/ https://www.a-levelmathstutor.com/m-kinetics-workenergy.php

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	principle of conservation of energy • 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 • Solve problems involving, for example, the instantaneous acceleration of a car moving on a hill against a resistance.		
Psychology	• To discuss Abnormality: Anxiety Disorder	Create a research report / presentation on the comparative evaluation of any two theories given below- Behavioural (Watson & Rayner, 1920), Psychodynamic (Freud, 1909), Biomedical/genetic (Ost, 1992) and Cognitive (Di Nardo et al..,1988)	Watson and Rayner (1920) Little Albert - Behavioural | Psych Yogi A Level Psychology of Abnormality: Explanation of Phobias (excellingpsychology.blogspot.com)

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Physics	**Magnetic fields**
	• To understand forces between current-carrying conductor and predict the direction of the forces.
	• To know the direction of force on a charge moving in a magnetic field.
	• To define magnetic flux density and the tesla and solve problems using the equation $F = BIL \sin\theta$, with directions as interpreted by Fleming's left-hand rule
	• To derive the expression $V_H = \frac{BI}{ntq}$ for the Hall voltage, where t = thickness
	
	Ideal Gases
	• Solve problems using the equation of state for an ideal gas
	• Interpret Brownian motion in terms of the movement of molecules
		• Find why two parallel currents attract and two antiparallel currents repel.
		• Research on how Hall voltage creates a voltage difference across an electrical conductor.
		• Describe the working of a hall probe
		  • 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
		  • Explain Boyle's law and applications
		  • State the ideal gas equation and explain kinetic model
		  • State the relation between temperature and molecular kinetic theory
			https://www.britannica.com/science/Hall-effect
			
			https://courses.lumenlearning.com/physics/chapter/22-10-magnetic-force-between-two-parallel-conductors/
			
			https://courses.lumenlearning.com/boundless-physics/chapter/magnetic-force-on-a-moving-electric-charge/
			
			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

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	• State the assumptions of the kinetic theory of gases • 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.		
Sociology	• To discuss Neo Marxist Paul Willis' study.	Independently research and present your evaluation on- Neo Marxist Paul Willis' study' Learning to Labour' and how his conclusions provide an alternative viewpoint to that of Bowles and Gintis	Learning to Labour by Paul Willis – Summary and Evaluation of Research Methods – ReviseSociology
English Language	To analyze the entry on an exotic flora or fauna and compare the treatment of the same subject through different mediums.	• Read a Wikipedia entry on an exotic flora or fauna. Watch a documentary on the same flora and or fauna chosen. Compare the treatment of the same subject through different mediums by analyzing the following. 1. The development of topic 2. Lexical and semantic use 3. Orthography 4. Morphology	https://www.wikipedia.org/ www.youtube.com www.bbcwildlife.com www.natgeo.com

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Information Technology	Declarative programming(Prolog): • To Demonstrate an ability to solve a problem by writing appropriate facts and rules based on supplied information • To Demonstrate an ability to write code that can satisfy a goal using facts and rules	• Encourage your child to develop a software project to include the following: • Create a software database which can handle the files using Prolog concept.	Prolog: www.learnprolognow.org/lpnpage.php?pageid=implementations Tutorial guide to prolog: www.learnprolognow.org/lpnpage.php?pageid=online
Computer Science	**Project Management** • Describe disaster recovery management (including: risk analysis, perpetrator analysis, risk testing, quantifying the risk, securing the risk, software protection, password controls, recovery management) **Protyping** • describe prototyping	• Discuss how the possibility of a disaster can be planned for and why this might be important. • Explain the use of prototypes in development, the different types that can be created and how the use of the prototypes can change the development process.	The following could be used for information: http://whatis.techtarget.com/definition/disaster-recovery http://www.ready.gov/business/implementation/IT

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	• Describe types of prototyping (including: • Evolutionary, incremental, throw-away, rapid). • Discuss the advantages and disadvantages of prototyping		
Art and Design	• To explore and build on their subject of interest. To encourage independent expression and the development of a critical, reflective practice.	• To reflect growing independence in the refinement and development of ideas and personal outcomes. • To investigate critical reflection in the process that helps artists and designers to learn what works and what doesn't. • To produce practical work supported by written analysis containing detailed research.	www.studentartguide.com
Arabic (Arabs)	TOPIC: قصيدة على قدر أهل العزم قصة نظرة	يبحث عن مناسبة القصيدة يدلل على غرض القصيدة من الأبيات (ألفاظ – تراكيب – صور – أساليب)	https://www.youtube.com/watch?v=ab5seIsGMMI https://www.youtube.com/watch?v=Ub_XTxURZnY

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	الاستعارة Learning objectives: - أن يحلل النص الشعري تحليلا فنيًا. - أن يحدد الصورة الفنية في النص النص - أن يقارن بين نصين أدبيين مقارنة أدبية - أن يحدد دور التصوير والقيم البلاغية في النص . - أن يحلل دور المكان في القصة	يحلل العاطفة في الأبيات مع الدليل عليها يحلل عناصر القصة (شخصيات زمكان عقدة حل أحداث) يدلل على تقنيات الكاتب (سرد وصف حوار استرجاع مفارقة) يضع نهاية مختلفة للقصة مع / عكس سير الأحداث يميز بين الاستعارة والتشبيه يدلل على نوعي الاستعارة من القرآن والشعر	https://www.youtube.com/watch?v=kJb13j88GKc
Islamic Education (Arabs)	TOPIC: - المنهج النبوي في الرعاية الصحية الزواج طريق الاستعفاف **Learning objectives:** يحدد مقومات الصحة في السنة النبوية يستنتج أسباب انتشار الأمراض رغم تقدم الطب	يبين أهمية الصحة في حياة الفرد والمجتمع يوضح واجبه تجاه النعم الكثيرة التي أنعم الله بها عليه يحفظ الآيات مراعيًا أحكام التلاوة	https://www.youtube.com/watch?v=UWDcoXtNCXg https://www.youtube.com/watch?v=xDWSrbtkUJQ

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	يبين المعنى الإجمالي للآيات القرآنية يستنتج تدابير مكافحة الزنا	يحرص على القيم التي تضمنتها الآيات	
Islamic Education (Non Arabs)	TOPIC: 1. SLANDER AGAINST AYESHA (RA) **Learning objectives:** • To appreciate the magnificient character of Ayesha(RA) • To comprehend the consequences of rumors on individual and society. • To appreciate the magnificent character of Ayesha(RA) • To comprehend the consequences of rumors on individual and society	SEARCH AN EXAMPLE FROM SEERAH THAT SHOWS HOW DOES SPREADING RUMOR IS DANGEROUS. HOW CAN WE SAVE OURSELVES FROM BELIEVING THE RUMORS? RECORD THE VIDEO. **Write down an essay on the benefits of following Prophet (P.B.U.H) as a role model. Think, what we lose if we do not follow his path.**	https://www.youtube.com/watch?v=FB0fPgytIWc&t=988s&ab_channel=NoumanAliKhan-Official-Bayyinah https://www.youtube.com/watch?v=vrrEOKmFLbc&ab_channel=QuranWeekly

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	TOPIC; 2. OBEDIENCE & COMPLIANCE OF PROPHET (P.B.U.H) IS PART OF FAITH. Learning objective: • To elucidate the significance of following Prophet (P.B.U.H) • To analyze the benefits of following the example of Prophet (P.B.U.H		