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Aim High Progress Study Programme _ (Year 12) –November _2024

Subject	Focus	Activities	Useful website
Accounting	<ul style="list-style-type: none">To analyze the usefulness of Managerial Accounting in businessesTo develop independent problem-solving skills	<ul style="list-style-type: none">Revise all the topics covered so far in the AS level syllabus.Complete all MCQ questions and structures on the topics covered so far.Practice question from past paper 2016 – 2020 (Feb/March and May/June series)	www.myaccountinglab.com www.cie.org.uk , Accounting Text books
Arabic (Arabs)	<p>TOPIC</p> <p>شعر المتنبي - أرق على أرق للمتنبي -</p> <p>Learning objectives:</p> <p>أن يحلل النص في سياقه التاريخي والاجتماعي</p> <p>•</p> <p>أن يتتبع الأثر الذي يتركه أسلوب الكاتب ، *</p> <p>استخدامه للتقنيات البلاغية</p> <p>TOPIC</p>	<p>يحلل النص في سياقه التاريخي والاجتماعي *</p> <p>يتتبع الأثر الذي يتركه أسلوب الكاتب ، واستخدامه *</p> <p>للتقنيات البلاغية</p> <p>(يقارن بين النص الشعري ونص آخر *</p> <p>يكتب موضوعا وصفيا باستخدام الاستعارة *</p>	<p>https://ar.wikipedia.org/wiki/%D8%A3%D8%A8%D9%88_%D8%A7%D9%84%D8%B7%D9%8A%D8%A8_%D8%A7%D9%84%D9%85%D8%AA%D9%86%D8%A8%D9%8A</p> <p>https://ar.wikipedia.org/wiki/%D8%A3%D8%A8%D9%88_%D8%A7%D9%84%D9%85%D8%AA%D9%86%D8%A8%D9%8A</p>



The Winchester School



Aim High Progress Study Programme _ (Year 12) –November _2024

	استجابة لنص أدبي - Learning objectives: (أن يقارن بين النص الشعري ونص آخر * . أن يكتب استجابة لنص أدبي-	يعين الاستعارة في النصوص * ينتج فقرة تتضمن التشبيه التمثيلي * . يكتب استجابة لنص أدبي *	
Islamic Studies Arabs	TOPIC المسئولية في الإسلام-1 مقاصد التشريع الخمس -2 Learning objectives: 1. التمييز بين المسئولية الفردية والجماعية. 2. تحديد مجالات المسئولية الفردية. 3. تحديد نظرة الإسلام للمسئولية والإنسان. نشاط1فردى: حفظ النفس من المسئوليات الفردية. علل تحريم الإسلام للإنتحار؛ مدعماً إجابتك بالدليل توضيح مفهوم علم مقاصد الشريعة وفائدته.1	حدد دور أفراد الأسرة لتحقيق الغاية التي أنشئت من أجلها. أعمال جماعية بحث في القرآن	https://ifar.journals.ekb.eg/article_265128_7c714fdff2a9176cdfa4cdf10fc4762.pdf https://2u.pw/vYjyrOie



The Winchester School



Aim High Progress Study Programme _ (Year 12) –November _2024

	<p>تحديد علاقة المقاصد والضروريات بغيرها. 2.</p> <p>استنتاج وسائل حفظ مقاصد التشريع 3. الخمسة.</p> <p>نشاط 1 فردي: حدد الغاية من خلق الإنسان من خلال تتبع بعض الآيات القرآنية.</p> <p>نشاط 2 جماعي: ابحث عن مقاصد التشريع الخمسة التي تقوم عليها حياة الإنسان ثم اكتبها في دفترك.</p>		
Islamic Studies Non Arabs	<p>TOPIC: RESPONSIBILITY IN ISLAM</p> <p>Learning objectives:</p> <ul style="list-style-type: none">-To distinguish between individual and collective responsibility.-To comprehend the importance and significance of responsibility in Islam.	<p>Write a journal on how has U.A.E encourage the Emirati youth to take individual and collective responsibility and how does it help to contribute to the progress of society.</p>	<p>https://www.newmuslim.net/islam-individual-responsibility/</p>



The Winchester School



Aim High Progress Study Programme _ (Year 12) –November _2024

Biology	<p><u>Mitotic cycle:</u></p> <ul style="list-style-type: none">• 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 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.	<ul style="list-style-type: none">• 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.• 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	<ul style="list-style-type: none">• 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• https://www.pinterest.com/pin/ARWd9Q1nOF4ReNCKu4MPLUR9ZzPNgP9tnb52Rlk03tfaHAIPiXOc3ws/• 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
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The Winchester School



Aim High Progress Study Programme _ (Year 12) –November _2024

	<p>Nucleic acids and protein synthesis</p> <p>To Describe the structure of nucleotides, including the phosphorylated nucleotide ATP</p> <ul style="list-style-type: none">• To describe the structure of RNA and DNA and explain the importance of base pairing and the different hydrogen bonding between bases.• To describe the semi-conservative replication of DNA during interphase• To state that a polypeptide is coded for by a gene and that a gene is a sequence of nucleotides that forms part of a DNA molecule• To state that a gene mutation is a change in the sequence of nucleotides that may result in an altered polypeptide• To describe the way in which the nucleotide sequence codes for the amino acid sequence in a	<ul style="list-style-type: none">• Simulation/ undergo virtual labs for DNA structure and replication games activities using the link below.• Create 10 Effective quick questions on DNA synthesis using bloom’s taxonomy.• Create separate flow charts on DNA synthesis, RNA transcription and Translation of protein with emphasis on enzymes used.• Draw a poster on DNA synthesis highlighting replication fork, okazaki fragments and 5 prime to 3 prime direction of DNA synthesis	<ul style="list-style-type: none">• http://www.hhmi.org/biointeractive/dna/index.html• https://www.ncbi.nlm.nih.gov/books/NBK26821/• http://www.mrothery.co.uk/genetics/dnnotes.htm#Structure%20of%20DNA• http://accessexcellence.org/AB/GG/• http://www.s-cool.co.uk/a-level/biology/dna-and-the-genetic-code/revise-it/dna-replication• http://www.thealevelbiologist.co.uk/replication-of-dna• http://www.hhmi.org/biointeractive/search?sort_by=created&redirect=1&field_biointeractive_types%5B0%5D=26700• http://www.learnaboutsma.org/science/1.html• http://www.ncbe.reading.ac.uk/ncbe/PROTOCOLS/DNA/extracting.html
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The Winchester School



Aim High Progress Study Programme _ (Year 12) –November _2024

	<p>polypeptide with reference to the nucleotide sequence for HbA (normal) and HbS (sickle cell) alleles of the gene for the β-globin polypeptide</p> <ul style="list-style-type: none"> To describe how the information in DNA is used during transcription and translation to construct polypeptides, including the role of messenger RNA (mRNA), transfer RNA (tRNA) and the ribosomes 	<ul style="list-style-type: none"> Work out on mathematical justification of Chargaff rule, how 4 nitrogenous bases code for 20 amino acids. 	<ul style="list-style-type: none"> http://learn.genetics.utah.edu/content/labs/extraction/ http://www.yourgenome.org/activities/ori-gami-dna https://geneed.nlm.nih.gov/topic_subtopic.php?tid=15&sid=16 http://www.pbslearningmedia.org/resource/tdc02.sci.life.repro.lp_dnastructure/modeling-dna-structure/ https://www.merlot.org/merlot/viewMaterial.htm?id=297572 http://www.genomebc.ca/education/teachers/activities/
Business Studies	<p>Topic – Capacity Utilisation</p> <ul style="list-style-type: none"> To analyse how capacity utilisation can be measured. To discuss the implications of operating under or over maximum capacity. 	<p>Using a concert/theatre venue or airline company as an example, analyse the implications of operating under and over capacity. Produce your findings in the form of a Report.</p>	<p>http://tutor2u.net/business/production/capacity-utilisation.html http://wikitextbook.co.uk/index.php/Capacity_utilisation</p>



The Winchester School



Aim High Progress Study Programme _ (Year 12) –November _2024

Chemistry	<p>AN INTRODUCTION TO ORGANIC CHEMISTRY:</p> <ul style="list-style-type: none">• To understand the terms empirical, molecular and structural formulae, homologous series and functional groups.• To apply IUPAC rules to naming organic compounds with up to six carbon atoms and containing up to two functional groups.• To describe and explain structural isomerism for aliphatic compounds containing up to six carbon atoms; and• To understand that stereoisomers (geometrical) exist (alkenes) in cis and trans (E-Z) forms due to the energy barrier to rotation in these	<p>Activity 1:</p> <p>Giving out molecular modelling kits and get students to build simple straight-chain alkanes from methane to hexane</p> <p>Activity 2:</p> <p>Compare the empirical, Molecular and structural formulae of organic compounds as a poster activity.</p> <p>Activity 3:</p> <p>Practice drawing the structural and stereoisomers of organic compounds</p> <p>Activity 5:</p> <p>Prepare a brochure for Rules of naming organic compounds along with the properties of homologous series.</p>	<p>http://www.chemistryrules.me.uk/candr/nomenclature.htm</p> <p>https://www.chemguide.co.uk/basicorg/isomermenu.html</p> <p>https://www.mytutor.co.uk/answers/69/A-Level/Chemistry/What-is-the-difference-between-structural-</p> <p>http://www.docbrown.info/page06/FunctionalGroups.htm</p> <p>http://www.docbrown.info/page14/page14orgnomen.htm</p>
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The Winchester School



Aim High Progress Study Programme _ (Year 12) –November _2024

	<p><u>Rate of Reaction</u></p> <ul style="list-style-type: none">• Explain and use the term <i>rate of reaction</i>• Explain qualitatively, in terms of collisions, the effect of concentration changes on the rate of a reaction• Construct and interpret a reaction pathway diagram, in terms of the enthalpy change of the reaction and of the activation energy• Explain and use the term <i>catalysis</i>• explain that catalysts can be homogenous or heterogeneous• Explain that, in the presence of a catalyst, a reaction has a different mechanism, i.e. one of lower activation energy	<p>ACTIVITY 1</p> <ul style="list-style-type: none">• Research the definition of rate of reaction and correlate it to any physics quantity. Also find out about what makes reaction to occur. <p>ACTIVITY 2</p> <ul style="list-style-type: none">• Plan an experiment to investigate rate of reaction. <p>ACTIVITY 3</p> <ul style="list-style-type: none">• Create an infographic poster about catalysis. Include definition, types and how does catalyst enhances speed of reaction. <p>ACTIVITY 4</p> <ul style="list-style-type: none">• Create a simulation to explain the Boltzmann distribution curve to your peers. <p>ACTIVITY 5</p> <ul style="list-style-type: none">• Create a CV for the biocatalyst. <p>ACTIVITY 6</p> <ul style="list-style-type: none">• Create a list of questions using the Bloom's taxonomy.	<p>http://www.s-cool.co.uk/a-level/chemistry/reaction-kinetics</p> <p>http://www.chemistryrules.me.uk/hfhf/hfhf3.htm</p> <p>http://www.docbrown.info/page03/ASA2rates.htm</p> <p>https://www.youtube.com/watch?v=ict5M6ISVDA</p>
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Aim High Progress Study Programme _ (Year 12) –November _2024

	<ul style="list-style-type: none">• Interpret this catalytic effect in terms of the Boltzmann distribution• describe enzymes as biological catalysts (proteins) which may have specificity• explain and use the term activation energy, including reference to the Boltzmann distribution• Explain qualitatively, in terms both of the Boltzmann distribution and of collision frequency, the effect of temperature change on the rate of a reaction <p><u>Enthalpy changes</u></p> <ul style="list-style-type: none">• Explain that chemical reactions are accompanied by energy changes, principally in the form of heat energy; the energy changes can be	<p>Activity 1:</p> <p>Make a power point presentation to show the relationship between bond energy and enthalpy change (use minimum 5 examples in your PPT)</p> <p>Activity 2:</p> <p>Bromine reacts with iodine to form iodine monobromide, IBr.</p> <p>The table below lists some average bond enthalpies which are required in different parts of this question.</p> <p>(i) Why do Br₂ and I₂ not exist in the gaseous state under standard conditions?</p> <p>(ii) Calculate the enthalpy change of formation, ΔH_f, for IBr.</p> <p>Activity 3: Practice drawing energy cycles and application of Hess's law.</p> <p>Activity 4:</p>	<p>http://www.chemguide.co.uk/physical/energetics/sums.html</p> <p>http://chubbyrevision.weebly.com/energetics.html</p> <p>http://www.ocr.org.uk/Images/208647-enthalpy-changes-delivery-guide.pdf</p> <p>http://www.swotrevision.com/pages/alevel/chemistry/m3_part2.htm</p> <p>http://www.chemguide.co.uk/physical/basicratesmenu.html</p>
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The Winchester School



Aim High Progress Study Programme _ (Year 12) –November _2024

	<p>exothermic (ΔH is negative) or endothermic (ΔH is positive)</p> <ul style="list-style-type: none">• Show understanding of chemical reactions in terms of energy transfers associated with the breaking and making of chemical bonds.• Explain the terms bond energy, bond length and bond polarity and use them to compare the reactivities of covalent bonds.• Explain enthalpy change of reaction and standard conditions, with particular reference to: formation, combustion, hydration, solution, neutralisation, atomisation <p>(ii) bond energy (ΔH positive, i.e. bond breaking)</p>	<p>Solve past paper questions based on enthalpy changes.</p>	
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The Winchester School



Aim High Progress Study Programme _ (Year 12) –November _2024

<p>Economics</p>	<ul style="list-style-type: none">• To Discuss the causes and consequences of Inflation and Unemployment. To revise all the topics of As level economics.	<ul style="list-style-type: none">• Students discuss difficulties involved in arriving at an accurate unemployment figure and as a result, a number of different approaches are used.• Students using case studies/ newspaper articles which illustrate various causes of unemployment.• Discuss the consequences of unemployment through research activities.• Through ED puzzle video students illustrate the stages of building the CPI.• Learners research which types of inflation currently exist in their own country's economy and provide supporting evidence for each.• Research activity. In groups, learners:<ul style="list-style-type: none">o analyse the consequences of inflation in their chosen economy	<p>http://www.economicsonline.co.uk/Global_economics/Inflation.html</p> <p>https://www.tutor2u.net/economics/reference/inflation-measuring-inflation</p> <p>http://www.tutor2u.net/economics/revision-notes/as-macro-inflation.html</p> <p>http://www.tutor2u.net/economics/presentations/aseconomics/macro/Inflation/</p> <p>http://www.tutor2u.net/economics/revision-notes/a2-macro-economic-growth-costs-benefits.html</p> <p>https://youtu.be/iCRQdabmixc</p>
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Aim High Progress Study Programme _ (Year 12) –November _2024

		<ul style="list-style-type: none">○ identify and explain at least three different consequences○ attempt to assess their order of importance.● Students in groups explain and discuss the links between inflation and unemployment and the theory which underpins this.	
Psychology	<p>Topic- Cognitive Approach</p> <ul style="list-style-type: none">● Learning Objective- Will be able to explain the essential features of the cognitive approach● To evaluate the cognitive approach and its application to real life.	<ul style="list-style-type: none">● Students create a diagram of how a computer works and consider the analogy that their mind works 'like a computer'. See if they can identify any strengths or weaknesses of adopting that model.● Students will generate and list various mental processes/mental aspects.	<p>Textbook</p> <p>www.tutor2u.net/psychology/reference/the-cognitive-approach</p> <p>and a more detailed and extensive description available at:</p> <p>www.simplypsychology.org/cognitive.html</p>
Physics	<p>Electricity</p> <ul style="list-style-type: none">● Derive $I=nAvq$ for a current carrying conductor● Sketch V-I characteristics of different non ohmic conductors	<p>Research on practical circuits in which non ohmic conductors are used</p> <p>Explain what is meant by charge is quantized.</p>	<p>https://studylib.net/doc/15252631/tap-104--2--derivation-of-i-%3D-navq</p> <p>https://byjus.com/question-answer/what-do-you-mean-by-quantization-of-electric-charge/</p>



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Aim High Progress Study Programme _ (Year 12) –November _2024

	<ul style="list-style-type: none"> • Explain changes in resistance for non ohmic conductors • Analyze the concept of quantisation of electric charge <p><u>Momentum</u></p> <ul style="list-style-type: none"> • To apply the principle of conservation of momentum to solve simple problems, including elastic and inelastic interactions between bodies in one and two dimensions 	<p>Derive step by step, the equation for current</p> <ul style="list-style-type: none"> • A snooker ball strikes stationary ball. The second ball moves off sideways at 60° to the initial path of the first ball. Use the idea of conservation of momentum to explain why the first ball cannot travel in its initial direction after the collision. Illustrate your answer with a diagram • Practice numerical problems applying the conservation of momentum principle. 	<p>https://www.vedantu.com/question-answer/give-the-nature-of-vi-graph-for-ohmic-class-12-physics-cbse-5f5af45c8f2fe24918abb20c</p> <p>https://www.s-cool.co.uk/a-level/physics/momentum-and-impulse/revise-it/principle-of-the-conservation-of-momentum</p> <p>https://www.physicsclassroom.com/class/momentum/u4l2b.cfm</p>
Sociology	<p>Topic – Family</p> <p>To discuss how the functions of families have changed over time,</p>	<p>Create a Infographic evaluating the functionalist, Marxist and Feminist views on the functions of the family</p>	<p>https://www.tutor2u.net/sociology/reference/families-functionalism</p> <p>https://revisesociology.com/2020/06/05/what-are-the-functions-of-the-family-today/</p>



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Aim High Progress Study Programme _ (Year 12) –November _2024

	<p>including the 'loss of functions' debate.</p> <ul style="list-style-type: none">• To analyse how the family benefits capitalism, including ideological control, reproduction of labour and consumption. <p>To assess feminist responses to functionalist and Marxist accounts of the role of the family.</p>		<p>https://open.lib.umn.edu/sociology/chapter/15-2-sociological-perspectives-on-the-family/</p>
English Language	Directed writing	<p>You have watched the movie Lincoln (2012). Research on the life of Lincoln Read the articles provided in the link. Share how the article aids or alters your understanding of Abraham Lincoln.</p>	<p>http://news.nationalgeographic.com/2015/04/150418-abraham-lincoln-funeral-train-railroad-civil-warhistory/</p>
Art and Design	<p>To show a balance between the range of sources and the quality of the responses and a need to demonstrate purpose and intention within their recording.</p>	<p>To reflect growing independence in the refinement and development of ideas and personal outcomes. To select and engage with artists and their practices.</p>	<p>www.studentartguide.com</p>



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Aim High Progress Study Programme _ (Year 12) –November _2024

		<p>To investigate critical reflection in the process that helps artists and designers to learn what works and what doesn't.</p>	
<p>Information Technology</p>	<p>To Explain why E-safety is important and why data should be kept confidential</p> <ul style="list-style-type: none"> • Describe potential health hazards associated with the use of computer. • Justify the use of various preventive methods to protect from Computer viruses. 	<p>Activities: Students to create a website on Esafety highlighting key points on how to keep ourselves safe online.</p> <p>Create online posters and presentations on Esafety.</p> <p>Students to work on advanced Database and spreadsheet concepts and Past paper Practice</p>	<ul style="list-style-type: none"> • Common Sense Media: https://www.common sense media.org/ - Offers a variety of resources on online safety, media literacy, and digital citizenship. • Internet Safety 101: https://internet safety 101.org/ - Provides information and resources on internet safety for kids and teens. • NetSmartz: https://www.missing kids.org/net smartz/home - Offers age-appropriate online safety resources and educational materials. • Stay Safe Online: https://www.mygov.in/staysafeonline - Provides information and advice on staying safe online.



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Aim High Progress Study Programme _ (Year 12) –November _2024

<p>Computer Science</p>	<ul style="list-style-type: none">• Implementing and writing pseudocode from flowcharts or structured English.• Writing pseudocode for variable declarations, assignments, and expressions.• Utilizing control structures like IF statements, CASE structures, and loops.• Defining and using procedures and functions effectively.	<ul style="list-style-type: none">• Create pseudocode from given flowcharts.• Write pseudocode for declaring constants and variables, and assigning values.• Write pseudocode for IF statements with ELSE and nested IFs.• Develop a CASE structure for a given scenario.• Implement different types of loops (count-controlled, post-condition, pre-condition) and justify their use in specific problems.• Write pseudocode for IF statements with ELSE and nested IFs.• Develop a CASE structure for a given scenario.• Implement different types of loops (count-controlled, post-condition, pre-condition) and justify their use in specific problems.• Analyze and rewrite pseudocode to improve efficiency.• Discuss the importance of using built-in .functions and library routines	<p>Commenting programs:</p> <p>http://en.wikibooks.org/wiki/A-level_Computing/AQA/Problem Solving, Programming, Data Representation and Practical Exercise/Fundamentals of Programming/Comments</p> <p>Inputs and outputs in programming:</p> <p>http://en.wikibooks.org/wiki/A-level_Computing/AQA/Problem Solving, Programming, Data Representation and Practical Exercise/Fundamentals of Programming/Input and output</p> <p>Operators:</p> <p>http://en.wikibooks.org/wiki/A-level_Computing/AQA/Problem Solving, Programming, Data Representation and Practical Exercise/Fundamentals of Programming/Arithmetic operators</p> <p>www.pp4s.co.uk/main/tu-op-intro.html</p> <p>W3Schools - Pseudocode - A great resource for understanding pseudocode basics.</p>
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Aim High Progress Study Programme _ (Year 12) –November _2024

Statistics 1	<p>Topic: <u>Discrete random variables</u></p> <ul style="list-style-type: none">• Draw up a probability distribution table relating to a given situation involving a discrete random variable X.• Calculate $E(X)$ and $Var(X)$.	<p>Model a situation on discrete random variable from a real life situation.</p>	<p>https://revisionmaths.com/advanced-level-maths-revision/statistics/discrete-random-variables</p> <p>https://www.youtube.com/watch?v=oHcrna8Fk18&list=PLvxOuBpazmsNIHP5cz37oOPZx0JKyNszN</p>
Pure Mathematics	<p>Differentiation:</p> <ul style="list-style-type: none">• Apply the derivative of x^n (for any rational n), together with constant multiples, sums and differences of functions.• Apply derivatives of composite functions using the chain rule.• Apply differentiation to gradients, tangents and normals, increasing and decreasing functions and rates of change.	<p><u>Pure Mathematics</u></p> <p>Research on the real-life applications of differentiation.</p> <p>We use the derivative to determine the maximum and minimum values of particular functions (e.g. cost, strength, amount of material used in a building, profit, loss, etc.).</p>	<p>www.mathsisfun.com/calculus/integration-rules.html</p> <p>https://www.tes.com/teaching-resource/a-level-maths-c2-definite-integration-worksheet-6146778</p> <p>https://www.tes.com/teaching-resource/a-level-maths-c2-definite-integration-worksheet-6146778</p> <p>https://www.tes.com/teaching-resource/integration-powerpoint-6402321</p>



The Winchester School



Aim High Progress Study Programme _ (Year 12) –November _2024

	Apply differentiation to locate stationary points and determine their nature, and use information about stationary points in sketching graphs.		
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