

Subject topic lists for cycle 3 end of year exams




Year 10

English Language	☹️	😐	😊	Notes
Paper 1 - Unseen - fiction text				
Q1 - Retrieval				
Q2 - Analysis of language				
Q3 - Analysis of structure				
Q4 - Evaluation				
Q5 - Writing - describe or narrate				
Paper 2 - Unseen - non-fiction x 2 texts - one pre 1900				
Q1 - Retrieval				
Q2 - Summarise and interpret				
Q3 - Analysis of language				
Q4 - Comparison of writer's perspectives				
Q5 - Writing - discursive essay				

English Literature	☹️	😐	😊	Notes
Q1 - A Christmas Carol or Jekyll and Hyde - extract close analysis to knowledge of whole text				
Q2 - An Inspector Calls - choice of two questions - no extract.				
Revision of themes, characters and key quotations - 100% sheets				

RE	☹️	😐	😊	Notes
Christianity				
Nature of God				
The Trinity				
Creation stories				
The problem of evil				
Christian responses to the problem of evil				
Jesus and incarnation				
The crucifixion, resurrection and ascension				
Sin				
Salvation through grace and law				
Salvation through Jesus				
Life after death and judgement				
Islam				
Nature of Allah				
Six articles of faith				
5 Usul ad-Din				
Prophethood (Adam/Ibrahim/Muhammed)				
Angels				
Jannah and Jahannam (Heaven and Hell)				
Holy books (Scrolls of Abraham/Psalms/Torah/Injeel/Qur'an)				
Sources of Authority (Sunnah/Hadith/Shariah Law)				
Predestination				

Science - Biology	☹	☺	😊	Notes
B1 – Cell Biology (higher- P11-23, foundation- P11-23)				
Cells				
Microscopy				
Chromosomes and mitosis				
Cell Differentiation and specialisation				
Stem cells				
Diffusion				
Osmosis				
Active transport				
Exchange surface				
Exchanging substances				
B2 – Organisation (higher- P24-42, foundation- P24-41)				
Cell organisation				
Enzymes				
Investigating Enzyme reactions				
Enzymes and digestion				
More on enzymes and digestion				
Food tests				
The lungs				
Circulatory system – the heart				
Circulatory system – Blood vessels				
Circulatory system – Blood				
Cardiovascular disease				
More on cardiovascular disease				
Health and disease				
Risk factors for non-communicable disease				
Cancer				
Plant cell organisation				
Transpiration and translocation				
Transpiration and stomata				
B3– Infection and response (higher- P43-49, foundation- P42-49)				
Communicable disease				
Viral, fungal and protest disease				
Bacterial diseases and preventing disease				
Fighting Disease				
Fighting Disease-vaccination				
Fighting Disease-Drugs				
Developing drugs				
B4 – Bioenergetics (higher- P50-57, foundation- P50-56)				
Photosynthesis and limiting factors				
The rate of photosynthesis				
Respiration and metabolism				
Aerobic and Anaerobic respiration				
Exercise				
Biology required practicals to revise				
Microscopes				
Effects of osmosis on plant tissue				
Food tests				
Effect of pH on amylase				
Photosynthesis				

Science - Chemistry				Notes
C1 – Atomic structure and the periodic table (higher- P96-111, foundation- P96-112)				
Atoms				
Elements				
Compounds				
Chemical equations				
Mixtures and chromatography				
More separation techniques				
Distillation				
The history of the atom				
Electronic structure				
Development of the periodic table				
The modern periodic table				
Metals and non-metals				
Group 1 elements				
Group 7 elements				
Group 0 elements				
C2 – Bonding structure and properties of matter (higher- P112-122, foundation- P113-122)				
Formation of ions				
Ionic bonding				
Ionic compounds				
Covalent bonding				
Simple molecular substances				
Polymer and giant covalent structure				
Allotropes of carbon				
Metallic bonding				
States of matter				
Changing state				
C3 – Quantitative chemistry (higher- P123-128, foundation- P123-127)				
Relative formula mass				
The mole				
Conservation of mass				
The mole and equations				
Limiting reactants				
Concentrations of solutions				
C4 – Chemical changes (higher- P129-137, foundation- P128-133)				
Acids and bases				
Strong acids and weak acids				
Reactions of acids				
The reactivity series				
Separating metals and metal oxides				
Redox reactions				
Electrolysis				
Electrolysis of aqueous solutions				
C5 – Energy changes (higher- P138-141, foundation- P134-137)				
Exothermic and endothermic reactions				
More exothermic and endothermic reactions				
Bond energies				
Chemistry Required practicals to revise				
Making Soluble Salts				
Electrolysis				
Temperature Changes				

Science - Physics	☹	☺	😊	Notes
P1 – Energy (higher- P167-178, foundation- P167-179)				
Energy stores and systems				
Kinetic and potential energy stores				
Specific heat capacity				
Conservation of energy and power				
Reducing unwanted energy transfers				
Efficiency				
Energy resources and their uses.				
Wind solar and geothermal				
Hydroelectricity waves and tides				
Biofuels and Non-renewables				
Trends in energy use.				
P2 – Electricity (higher- P179-190, foundation- P180-192)				
Current and circuit symbols				
Resistance and $V=IR$				
Resistance and I-V characteristics				
Circuits devices				
Series circuits				
Parallel circuits				
Investigating resistance				
Electricity in the home				
Power of electrical appliances				
More on power				
The national grid				
P3 – Particle model of matter (higher- P191-194, foundation- P193-196)				
The particle model and motion in gases				
Density of materials				
Internal energy and changes of state				
Specific latent heat				
P4 – Atomic structure (higher- P195-200, foundation- P197-202)				
Developing the model of the atom.				
Isotopes and nuclear radiation.				
Nuclear equation				
Half life				
Irradiation and contamination.				
Physics Required practicals to revise				
Specific Heat Capacity				
Resistance				
Current / PD Characteristics				
Density				

Video resources to use for science

Biology

https://www.youtube.com/channel/UCqbOeHaAUXw9II7sBVG3_bw/playlists?view=50&sort=dd&shelf_id=21

Chemistry

https://www.youtube.com/channel/UCqbOeHaAUXw9II7sBVG3_bw/playlists?view=50&flow=grid&shelf_id=18

Physics

https://www.youtube.com/channel/UCqbOeHaAUXw9II7sBVG3_bw/playlists?view=50&flow=grid&shelf_id=20

Maths	☹	☺	😊	Notes
Integers				
Decimals				
Coordinates				
Introduction to algebra				
Angles				
Angle(Quad & drawing)				
Collecting data				
Fractions 1				
Using a calculator				
Symmetry				
Reading scales and concerting units				
Charts and graphs				
Patterns and sequences				
Angles, parallel lines and bearings				
Types of number				
Indices				
Fractions 2				
Perimeter and area				
Compound measures				
Timetables – train (foundation only)				
Distance-time graphs				
Pie charts				
Straight line graphs				
Averages and range				
Expanding and factorising				
Circles				
Percentages				
Construction				
3D Shapes				
Linear equations				
Real-life graphs				
Volume				
Cylinders				
Averages – large data sets				
Cumulative frequency (<i>Higher only</i>)				
Histograms (<i>Higher only</i>)				
Quadratic equations				
Transformations rotations and trans....				
Ratio and scale				
Scatter graphs and correlation				
Probability				
Polygons				
Similarity and congruence				
Linear inequalities				
Using formulae				
Changing the subject of a formula				
Pythagoras' theorem				
Converting units of measure				
Surds				
Trigonometry (2D)				
Simultaneous equations				
Quadratic equations				
Standard form				
Surface area & volume of complex shapes				
Further graphs				
Direct and inverse proportion				
Further simultaneous equations (<i>Higher only</i>)				
Pythagoras and trigonometry in 3D (<i>Higher only</i>)				
Upper and lower bounds (<i>Higher only</i>)				
Sine and cosine rules (<i>Higher only</i>)				




Transformations-graphs and functions (<i>Higher only</i>)				
Circle theorems (<i>Higher only</i>)				
Algebraic fractions (<i>Higher only</i>)				
Vectors				
Iteration and functions (<i>Higher only</i>)				
Venn Diagrams and set notation (<i>Higher only</i>)				
Proof				
Further inequalities (<i>Higher only</i>)				
Gradients and areas under graphs (<i>Higher only</i>)				
Finance (<i>Higher only</i>)				

Geography				Notes
Paper 1:				
Living with Hazards, Living World				
Physical Geography of UK				
Glaciation				
Coasts				
OS map skills				
Paper 2:				
Resources				

History				Notes
Fountains Abbey – everything studied to date				
Nazi Germany 1933-39				
Elizabethans 1580-1603				

Drama				Notes
LC1 - Physical Theatre – Component 1 Devised Theatre				
LC1 - Kneehigh/ 'Hansel and Gretal' – Component 2 & 3				
LC2 - 'War Horse' Set Text – Component 3				
LC2 - Berkoff – Component 1 Devised Theatre				
LC3 - Berkoff – Component 1 Devised Theatre Continued				
LC3 - 'War Horse' Set Text – Component 3 re-visit				
LC3 - Component 1 Final Devised performance				

Music				Notes
LC1 Performance 1				
LC1 Composition Skills				
LC1 Music Theory Skills				
LC1 Set Work: Beethoven Pathetique Sonata				
LC2 Performance 2				
LC2 Composition Skills & Course Work				
LC2 Music Theory Skills				
LC2 Set Work: Bach Brandenburg Concert No 5				
LC3 Performance 3 Solo and Ensemble				
LC3 Composition – course work				
LC3 Music Theory Skills				
LC3 Set Work: Mercury Killer Queen				

DT				Notes
Aesthetic				
Electronic Components –Input and Output				
Ergonomics				
Layout Planning				
Levers (Class 1-4)				
Market Research				
Materials Properties				
Maths –Data Analysis, Costing and Percentages				
New & Smart Materials				
One-Off Production Methods.				
Prototypes				
Sustainability				
Technical Textile -Definition				
Tolerance				
Designers				
○ Coco Chanel				
○ Marcel Breuer				
○ Gerrit Rietveld				
○ Alexander McQueen				
○ Norman Foster				
○ Ettore Sottsass				
○ William Morris				
○ Charles Rennie Mackintosh				
○ Raymond Templier				
○ Mary Quant				
○ Aldo Rossi				
○ Louis Comfort Tiffany				
○ Vivienne Westwood				
○ Harry Beck				
○ Alec Issigonis				
Materials				
○ Paper / Board				
○ Plastic				
○ Timbers				
○ Alloys				
○ Composite Materials				
○ Fibres				
○ Metals				
Process				
○ Anodising				
○ Embossing				
○ Extrusion				
○ Laminating				
○ Laser Cutting				

Useful revision website to use for DT

- <https://www.bbc.com/bitesize/examspecs/zby2bdm>
- http://www.technologystudent.com/despro_flash/NEW_GCSE3.html

Computer Science – Unit 1 Paper 1	☹	☺	😊	Notes
1.1 Systems architecture				
the purpose of the CPU				
Von Neumann architecture: *MAR (Memory Address Register) *MDR (Memory Data Register) *Program Counter *Accumulator				
common CPU components and their function: *ALU (Arithmetic Logic Unit) *CU (Control Unit) *Cache				
the function of the CPU as fetch and execute instructions stored in memory				
how common characteristics of CPUs affect their performance: *clock speed *cache size *number of cores				
embedded systems: *purpose of embedded systems *examples of embedded systems				
1.2 Memory				
the difference between RAM and ROM				
the purpose of ROM in a computer system				
the purpose of RAM in a computer system				
the need for virtual memory				
flash memory				
1.3 Storage				
the need for secondary storage				
common types of storage: *optical *magnetic *solid state				
suitable storage devices and storage media for a given application, and the advantages and disadvantages of these, using characteristics: *capacity *speed *portability *durability *reliability *cost				
1.4 Wired and wireless networks				
types of networks: *LAN (Local Area Network) *WAN (Wide Area Network)				
factors that affect the performance of networks				
the different roles of computers in a client-server and a peer-to-peer network				
the hardware needed to connect stand-alone computers into a Local Area Network: *wireless access points *routers/switches *NIC (Network Interface Controller/Card) *transmission media				

the internet as a worldwide collection of computer networks: *DNS (Domain Name Server) *hosting *the cloud				
the concept of virtual networks				
1.5 Network topologies, protocols and layers				
star and mesh network topologies				
Wifi: *frequency and channels *encryption				
Ethernet				
the uses of IP addressing, MAC addressing, and protocols including: *TCP/IP (Transmission Control Protocol/Internet Protocol) *HTTP (Hyper Text Transfer Protocol) *HTTPS (Hyper Text Transfer Protocol Secure) *FTP (File Transfer Protocol) *POP (Post Office Protocol) *IMAP (Internet Message Access Protocol) *SMTP (Simple Mail Transfer Protocol)				
the concept of layers				
packet switching.				
1.6 Systems security				
forms of attack				
threats posed to networks: *malware *phishing *people as the 'weak point' in secure systems (social engineering) *brute force attacks *denial of service attacks *data interception and theft *the concept of SQL injection *poor network policy				
Identifying and preventing vulnerabilities: *penetration testing *network policies *anti-malware software *firewalls *user access levels *passwords *encryption				
1.7 Systems software				
operating systems: *user interface *memory management/ multitasking *peripheral management and drivers *user management *file management				

typical utility system software: *encryption software *defragmentation *data compression *the role and methods of backup: -full -incremental				
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1.8 Ethical, legal, cultural and environmental concerns				
how to investigate and discuss Computer Science technologies while considering: *ethical issues *legal issues *cultural issues *environmental issues				
how key stakeholders are affected by technologies				
environmental impact of Computer Science				
cultural implications of Computer Science				
open source vs proprietary software				
legislation relevant to Computer Science: *The Data Protection Act 1998 *Computer Misuse Act 1990 *Copyright Designs and Patents Act 1988 *Creative Commons Licensing *Freedom of Information Act 2000				

Computer Science – Unit 2 Paper 2	☹	☺	☺	Notes
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2.1 Algorithms				
computational thinking: *abstraction *decomposition *algorithmic thinking				
standard searching algorithms: *binary search *linear search				
standard sorting algorithms: *bubble sort *merge sort *insertion sort				
how to produce algorithms using: *pseudocode *using flow diagrams				
interpret, correct or complete algorithms				

2.2 Programming techniques				
the use of variables, constants, operators, inputs, outputs and assignments				
the use of the three basic programming constructs used to control the flow of a program: *sequence *selection *iteration (count and condition controlled loops)				
the use of basic string manipulation				
the use of basic file handling operations: *open *read *write *close				

the use of records to store data				
the use of SQL to search for data				
the use of arrays (or equivalent) when solving problems, including both one and two dimensional arrays				
how to use sub programs (functions and procedures) to produce structured code				
the use of data types: *integer *real *Boolean *character and string				
the common arithmetic operators				
the common Boolean operators.				
2.3 Producing robust programs				
defensive design considerations: *input sanitisation/validation *planning for contingencies *anticipating misuse *authentication				
maintainability: *comments *indentation				
the purpose of testing				
types of testing: *iterative *final/terminal				
how to identify syntax and logic errors				
selecting and using suitable test data.				