Year 13 Subject Curriculum Overview per Term

Subject: Computer Science	Year Group: 13	AUTUMN TERM
Topic	**Key Learning Points**	**Key Vocabulary**	**Assessments**
Exchanging data	- Able to explain methods of compression - Able to explain methods of encryption - Able to define Hashing - Able to explain what a database is, and why it is used - Able to explain the keys of a database - Able to read and produce entity relationship diagrams - Able to carry out the normalisation of data - Able to write simple SQL queries	Lossy Lossless RLE Compression Symmetric and asymmetric encryption Hashing Database SQL Normalisation ACID ERD	Students will be assessed formatively through the completion of recall homework tasks along with a formal end of unit assessment completed under exam conditions. The assessment will be based on past paper questions. Testing on 60% of content from the unit just covered and 40% of all other topics covered in the subject to date.
Networks and web technologies	- Able to explain the structure of the internet - Able to explain an IP address - Able to explain a MAC address - Able to describe a range of network layouts - Able to explain packet switching - Able to explain circuit switching - Able to explain a range of internet protocols - Able to explain a range of network security threats and how to protect against - Able to create simple websites in HTML - Able to give style to websites through CSS - Able to write simple commands in JavaScript - Able to explain the rage rank algorithm - Able to explain and compare client side and peer-to-peer processing	IP address MAC address Ring network Bus network Packet switching Circuit switching Protocols HTML Malware Hacker Phishing CSS JavaScript Page rank Client side Peer-to-peer	

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Year 13 Subject Curriculum Overview per Term

Subject: Computer Science		Year Group: 13	SPRING TERM
Topic	**Key Learning Points**	**Key Vocabulary**	**Assessments**
Boolean algebra	• Able to comprehend logic gate diagrams • Able to produce truth tables from logic gates • Able to simplify Boolean expressions • Able to read and produce Karnaugh maps • Able to define Adders • Able to define D-type flip-flops	Logic gates Boolean logic De Morgan's Laws Karnaugh maps Adders Flip-flops	Students will be assessed formatively through the completion of recall homework tasks along with a formal end of unit assessment completed under exam conditions. The assessment will be based on past paper questions. Testing on 60% of content from the unit just covered and 40% of all other topics covered in the subject to date.
NEA Scrutiny	• Able to conduct a self-assessment of a finished NEA against the mark scheme • Able to conduct a peer assessment of a finished NEA against the mark scheme • Able to submit and sign off the paperwork for completed NEA assignment		

Subject: Computer Science		Year Group: 13	SUMMER TERM
Topic	Key Learning Points	Key Vocabulary	Assessments
Exam Question Analysis	- Able to be familiarised with the style of questions that will appear in the two exams. - Have attempted multiple past papers		In this term we work through past papers. Custom papers are also created from previous exam questions based around the classes weakness to help strengthen up all areas of understanding. A lot of focus is put on how to best answer essay based questions, and how to structure technical writing.

How parents can support learning in the subject this academic year
Students can be supported at home by encouraging them to undertake programming projects on topics that interest them. That could be making mods for a game, or randomiser for what outfit to wear.

Recommended Reading
• Revision of theory topics covered - https://isaaccomputerscience.org/topics/a_level?examBoard=all&stage=all#ocr • Revision guides and questions of theory topics covered - https://www.physicsandmathstutor.com/computer-science-revision/a-level-ocr/ • C# concepts - https://www.w3resource.com/csharp-exercises/

Points to note
All students are provided with a "OCR AS and A-level Computer Science" revision guide at the start of the year 12, for them to take home for revision purposes. The last term of the year is used to recap the subject as a whole, and reteach any areas that the cohort as a whole underperform in that have been identified through assessment.