

Year 11 – Computer Science

Completion date:

You will learn about:

- Detailed theory on hardware and networking
- Data Compression
- Types of software
- Cyber Security
- Algorithms

We will start the term with a review of last years theory and increasing the depth of your knowledge in the areas of hardware and network.

TERM 1 - Autumn	
Lesson Overview Cyber Security (4) Know what potential threats exist, how to detect and prevent them. Relational Databases and SQL (4) Understand the structure and components of a relational database. Be able to extract data from a database and update a database using Structured Query Language. Software Classification and the OS (1) Be able to explain about different types of software and also the role of the Operating System. Compilers and Interpreters (1) Understand the differences between high level and low level programming languages. Review of Number Systems and logic gates (2) Be able to confidently use binary, hexadecimal number systems including adding in binary. Computer Hardware review (1) Be able to explain the role and operation of the parts that form a computer system. Networking (3) Be able to explain the purpose of networking protocols and networking hardware. Data Compression (2) Understand the need for data compression and be able to use both RLE and Huffman encoding. Algorithms (4)	Keywords Binary Hexadecimal HDD SSD RAM ROM CPU FDE Cycle WAN LAN PAN RLE Huffman Encoding High level language Low level language Interpreter Compiler Assembler Malware Social Engineering Validation Authentication Function Procedure

Know some of the fundamental algorithms using in computing for sorting and searching data. Be able to code algorithms for basic validation and authentication. Understand the principals of functions and procedures.	
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