Confidence Grid	☺	😐	☹
1.1.1 - Architecture of the CPU			
The purpose of the CPU:			
Common CPU components and their function:			
ALU (Arithmetic Logic Unit)			
CU (Control Unit)			
Cache			
Registers			
Von neumann architecture:			
MAR (Memory Address Register)			
MDR (Memory Data Register)			
Program Counter			
Accumulator			
1.1.2 - CPU performance			
How common characteristics of CPUs can affect their performance:			
Clock speed			
1.1.3 - Embedded systems			
The purpose and characteristics of embedded systems			
Examples of embedded systems			
1.2.2 - Secondary storage			
Common types of storage:			
Magnetic			
Solid state			
1.2.3 - Units			
Data capacity and calculation of data capacity requirements			
1.2.4 - Data storage			
Numbers:			
How to convert positive denary whole numbers to binary numbers (up to and including 8 bits) and vice versa			
Binary shifts			
Characters:			
The use of binary codes to represent characters			
The term 'character set'			
The relationship between the number of bits per character in a character set, and the number of characters which can be represented, e.g. ASCII, Unicode			
Images:			
How an image is represented as a series of pixels, represented in binary			
Metadata			
The effect of colour depth and resolution on: - The quality of the image - The size of an image file			
Sound:			
How sound can be sampled and stored in digital form			
The effect of sample rate, duration and bit depth on: - The playback quality - The size of a sound file			
1.2.5 - Compression			
The need for compression			
Types of compression:			
Lossy			
Lossless			

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1.3.1 - Networks and topologies			
Types of networks:			
LAN (Local Area Network)			
The hardware needed to connect stand-alone computers into a Local Area Network:			
Routers			
Switches			
The internet as a worldwide collection of computer networks:			
The Cloud			
Star topology			
1.4.1 - Threats to computer systems and networks			
Forms of attack:			
Malware			
Social engineering, e.g. phishing, people as the 'weak point'			
Brute-force attacks			
Denial of service attacks			
Data interception of theft			
1.4.2 - Identifying and preventing vulnerabilities			
Common prevention methods:			
Penetration testing			
Anti-malware software			
Firewalls			
User access levels			
Passwords			
Encryption			
Physical security			
1.5.1 - Operating systems			
The purpose and functionality of operating systems:			
User interface			
Memory management and multitasking			
Peripheral management and drivers			
User management			
File management			
1.5.2 - Utility software			
The purpose and functionality of utility software			
Utility system software:			
Encryption software			
Defragmentation			
Data compression			
1.6.1 - Ethical, legal, cultural and environmental impact			
Impacts of digital technology on wider society including:			
Ethical issues			
Legislation relevant to Computer Science:			
Software licences (i.e. open source and proprietary)			