

# GCSE COMPUTER SCIENCE REVISION LIST

## Computer Systems (Paper 1)

<b>This is the content covered with Mr Caldwell and Mr Walters</b>		<b>✓ when complete</b>
<b>1.1 Systems architecture</b>	Purpose of the CPU	
	Common CPU components: ALU, CU, Cache	
	Common characteristics of CPUs (clock speed, cache size, number of cores)	
	Embedded systems – purpose and examples	
<b>1.2 Memory</b>	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	
<b>1.3 Storage</b>	The need for secondary storage	
	Advantages and disadvantages of different types of storage – Optical, Magnetic, Solid State using: Capacity, speed, portability, durability, reliability and cost	
	Suitability of storage devices for a given application	
<b>1.4 /1.5 Networks</b>	Topologies - bus, mesh, star ring	
	Advantages and disadvantages of topologies	
	Types of network – LAN, WAN	
<b>1.6 System Security</b>	Forms of attack	
	Threats posed to network – malware, phishing, brute force attacks, denial of service attacks, data interception and theft	
	Identifying and preventing vulnerabilities – passwords, encryption, penetration testing, firewalls, anti-virus	
<b>1.7 Systems software</b>	Utility software: encryption software, defragmentation, data compression	
	Operating systems – user interface, memory management, file management, peripheral management	
<b>1.8 Ethical, legal, cultural and environmental concerns</b>	Environmental impact of Computer Science	
	Open source v proprietary software	
	Legislation – Data Protection Act 1998, Computer Misuse Act 1990	

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## Computational thinking, algorithms and programming (Paper 2)

**This is the content covered with Mr Stewart**

✓ when complete

<b>2.1 Computational Thinking</b>	<b>4 pillars</b>	Decomposition	
		Abstraction	
		Pattern recognition	
		Algorithmic thinking	
	<b>Algorithms</b>	Writing algorithms	
		Drawing flow charts	
<b>2.2 – Programming Techniques</b>	Variables and constants		
	Variable identifiers		
	Assignment		
	Inputs		
	Operators: Arithmetic		
	Operators: Relational		
	Operators: Boolean		
	If/Else statements		
	Iteration: Count controlled FOR		
	Iteration: Condition controlled WHILE		
	Data types: String, Integer, Float		
	String manipulation: Type casting		
	Validation		
	Arrays and Lists		