



Year 10 CS Journey

Tier 3 Vocabulary:

Autumn 1	Autumn 2	Spring 1
CPU, Fetch-execute cycle, ALU, CU, Cache, Register, Von Neumann architecture	Primary storage, RAM, ROM, Virtual memory, Secondary storage, Bit, Nibble, Byte	LAN, WAN, Client-server network, Peer-to-peer network, Wireless access point, Router, Switch

Spring 1

Sp1: ☐ Computer Networks

☐ Connections and Protocols

Why this?

☐ LAN, WAN, The Internet, Standalone, Client-server, Peer-to-peer, Topologies.
☐ Network Hardware. ☐ Cloud computing, wireless and wired connectivity. ☐ IP and MAC addressing, protocol layers.

Why now?

☐ Network communication fundamentals leading into network security.

Reading:

☐ What is intelligence? Can it be mimicked by a machine?

Au2: ☐ Memory and Storage

Why this?

☐ Convert denary, hexadecimal and binary numbers. ☐ Know storage terminology.
☐ Calculate data capacity requirements.
☐ Binary addition. ☐ Binary shifts. ☐ Data representation. ☐ Character sets.

Why now?

☐ Know the need for computers to convert to binary. ☐ Understand what hexadecimal is used for. ☐ Core concepts used in further units.

Reading:

☐ Big data and invasion of privacy

Au1: ☐ Systems Architecture

☐ Memory and Storage

Why this?

☐ Understand what the CPU of a computer does. ☐ Know what the registers in a CPU are. ☐ Know the stages of the fetch, execute cycle. ☐ Primary and Secondary storage.

Why now?

☐ Introduction to the course.
☐ Foundation knowledge to access the rest of the course.

Reading:

☐ The evolution of hardware over the last 50 years

Autumn 2

Autumn 1

START

Su2: ☐ Ethical, legal, cultural and environmental concerns

Why this?

☐ Ethical, legal, moral concerns with computing. ☐ E-waste. ☐ Legislation.
☐ Open source vs. proprietary.

Why now?

☐ Final unit before year 11, wraps up paper 1 theory. ☐ Wider context of computer science beyond systems.

Reading:

☐ Can we populate the galaxy using AI?

Su1: ☐ Network Security

☐ System Software

Why this?

☐ Purpose of operating systems. ☐ Types of interface. ☐ System management.
☐ Utility software.

Why now?

☐ Understand the link between hardware and software. ☐ Know the role utility software plays in system maintenance.

Reading:

☐ Disasters caused by errors in algorithms

Sp2: ☐ Computer Networks

☐ Network Security

Why this?

☐ Malware types and threats. ☐ Phishing, social engineering, brute force, DDoS attacks. ☐ Prevention. ☐ People as the weak point

Why now?

☐ Develops knowledge and understanding of networks from a security perspective.

Reading:

☐ How binary made modern computers possible

FINISH

Summer 2

Summer 1

Spring 2

Tier 3 Vocabulary:

Spring 2	Summer 1	Summer 2
Malware, Social engineering, Phishing, Brute-force attack, Denial of service attack, Data interception and theft, SQL	Systems software, Operating system, User interface, Memory management, Multitasking	The Data Protection Act 2018, Computer Misuse Act 1990, Copyright Designs and Patents Act 1998