



JOURNEY DIAGRAM - COMPUTER SCIENCE - KS4

Year 10

Year 11

Autumn 1

- Decomposition
- Algorithms
- Data types
- Variables
- Input and integer functions
- Debugging tools
- Flowcharts
- Binary
- Unsigned integers
- Binary arithmetic
- Two's complement 1

Autumn 2

- String manipulation
- String methods
- if /if else
- relational operators
- if /elif /else
- readability
- Boolean operators
- Repetition (while)
- Two's complement
- Logical binary shifts
- Arithmetic binary shifts
- Hexadecimal
- ASCII

Spring 1

- One-dimensional lists
- For loops
- Range function
- Procedures
- Functions
- Subprograms
- Stored program concept
- Fetch-decode-execute
- Secondary storage

Spring 2

- string.format()
- Two-dimensional lists
- Validation
- Linear search (one-dimensional & two-dimensional)
- Operating system
- OS: File management
- OS: Process management
- OS: Peripheral & user management
- Utility software

Summer 1

- Merge sort
- Reading files
- String processing
- Writing files
- Authentication
- Malware & anti-malware
- Hackers
- Social engineering
- Data level protection
- Robust software

Summer 2

- Turtle pens, lines, movement, coordinates, polygons, subprograms, colours, filling, and circle, combining subprograms, layers
- LANs & WANs
- Networks speed
- Connectivity
- Wired v Wireless
- Network topologies

Summer 2



Summer 1

- Final Consolidation & Mock Exams
- Edexcel Specification Links: All Paper 1 & Paper 2.

Spring 2

- Data structures (2-dimensional)
- Subprograms (local, global, procedures, functions)
- Problem solving
- Trace tables
- Errors
- Problem solving
- Testing with data
- AI, Machine learning & Robotics
- Personal data
- Privacy & Ownership
- Data protection legislation

Spring 1

- Data types
- String manipulation
- Validation
- Data structures (one-dim)
- Trace tables
- Errors
- Problem solving
- Bitmaps
- Sound
- Compression

Autumn 2

- Trace Tables
- Errors
- Bubble sort
- Binary search
- Problem solving
- Environmental impact: ·manufacture & use
- Environmental impact: ·e-waste
- Low-level & High-level languages
- Translators
- Intellectual Property

Autumn 1

- Programming Revision
- Subprograms
- Local, global Variables
- Math, Time Libraries
- Problem solving
- Embedded systems
- The Internet of Things
- Packet switching
- TCP/IP