Computer Science Curriculum Map (Year 10)

Pearson / Edexcel (GCSE) [2022 – 2023]

Practical & Theory Assessment

Build a PC

Students are taken in small groups to look at PC components and with support from IT technicians they build a gaming PC.

Networks

LANs & WANs
Networks speed
Connectivity
Wired v. wireless
Network topologies

Using Turtle

Turtle introduction, pens, and lines
Turtle movement, coordinates, polygons, subprograms
Turtle pens, colours, filling, and circle
Turtle combining subprograms, layers
Turtle big problem

Practical & Theory Assessment

Malware, hackers, social engineering

Malware & anti-malware
Hackers
Social engineering
Data level protection
Robust software

Search and Sort algorithms. Writing to files

Merge sort
Reading files
String processing
Writing files
Authentication

Year 10 – Term 3

Lists, Procedures, Functions

One-dimensional lists for loops, range function
Procedures
Functions
Subprograms

CPU, RAM, Secondary storage

Stored program concept
Fetch-decode-execute
Fetch-decode-execute 2
Secondary storage 1
Secondary storage 2

Practical & Theory Assessment

2 dimensional Lists, Validation, Linear searches.

string.format()
Two-dimensional lists
Validation
Linear search (one-dimensional)
Linear search (two-dimensional)

Operating Systems

Operating system
OS: File management
OS: Process management
OS: Peripheral & user management
Utility software

Practical & Theory Assessment

Year 10 – Term 2

Practical & Theory Assessment

2's compliment, binary shifts, hexadecimal

Two's complement 2
Logical binary shifts
Arithmetic binary shifts
Hexadecimal
ASCII

String manipulation, Selection, Iteration

String manipulation, string methods
if, if else, relational operators
if elif else, readability
Boolean operators
Repetition (while)

Practical & Theory Assessment

Binary

Binary
Unsigned integers
Binary arithmetic
Two's complement 1

Intro to programming

Introduction to programming
Decomposition algorithms
Data types, variables
Input and integer functions, debugging tools
Flow charts

Year 10 – Term 1