Computer Science CURRICULUM JOURNEY

FURTHER STUDY
- A level Computing

CAREER PATHS
- Cyber security analyst, game designer, machine learning engineer, web developer, forensic computer scientist

SKILLS
- System theory, design, development and application

YEAR 11

Programming Fundamentals — Assessment: sequence, selection, iteration

Producing Robust Programs — Assessment: anticipating misuse & authentication

REVISION — Assessment: flashcard making, exam techniques

REVISION & EXAMS

Algorithms and Boolean Logic — Assessment: truth tables, combining operators

Revision & Mock Exams

Ethical, Legal, Cultural & Environmental Issues — Assessment: privacy issues and wider society

System Software — Assessment: file and memory management

Computer Networks & Network Security — Assessment: protocols, WANs & LANs

YEAR 10

Computing Systems — Assessment: machine learning, logic gates
- General purpose computers.
- Hardware components.
- Operating systems.

Web Development — Assessment: web design principles
- HTML
- CSS
- Hyperlinks
- Formatting

Vector Graphics — Assessment: create a logo
- Manipulate objects.
- Draw paths.
- Combine paths.

E-Safety — Assessment: healthy online communication
- Healthy relationships.
- Online challenges.

System Architecture — Assessment: Von Neumann architecture

Memory and Storage Part 1&2 — Assessment: optical, magnetic, solid state

YEAR 9

Minecraft for Education — Assessment: practical programming task
- Sequencing
- Test agent
- Events
- Loops
- Conditions

Cybersecurity — Assessment: hacking, phishing, brute force attack
- Data protection
- Hacking
- Malware
- DoS & DDos

E-Safety — Assessment: knowledge of Internet Safety
- Respond to threats on the Internet.

Micro:bit — Assessment: program a Micro:bit
- Event driven programming.
- Selection to control the flow of a program.

Mobile App Development — Assessment: development of a mobile app
- Block-based programming.
- Functions and expressions.

Intro to Python — Assessment: practical programming project
- Executing algorithms and programs.
- Use of arithmetic expressions.

YEAR 8

Scratch — Assessment: practice new programming techniques
- Define what a variable is.
- Modify a sequence.
- Define logical operators AND, OR & NOT.

Using Media — Assessment: use of software to create online content
- Identify the key features of a word processor.
- Construct a blog using appropriate software.

E-Safety — Assessment: knowledge of Internet safety
- Describe safe ways to communicate with others online.

Networks — Assessment: protocols, the Internet and the World Wide Web
- Define what a computer network is.
- Define what the Internet is.

Video Editing — Assessment: use of software to create & edit videos
- Use of different camera angles.
- Explain the purpose of a storyboard
- Effects and transitions.

YEAR 7

Modelling Data — Assessment: creation of a spreadsheet
- Identifying, columns, rows and cell references.
- Explain the difference between data and information.

Algorithms with Flowol — Assessment: knowledge of flowchart symbols
- Develop a control flowchart solution for a simple problem.
- Use decision systems in a flowchart.

Understanding Computers — Assessment: binary conversion, RAM vs. ROM
- Explain how a computer inputs, processes and outputs information.
- How the fetch - decode - execute cycle works.

COMPUTING SKILL Solving simple and complex problems → **COMPUTING SKILL** Use of critical & analytical thinking → **COMPUTING SKILL** Cope with rapid changes in technology → **COMPUTING SKILL** Effective communicators and team workers