KS4 GCSE Computer Science Curriculum Map

Maths Faculty

Programming skills
Problem Solving
Computational Thinking
Design skills

Programming Project
-Additional programming techniques
-Computational thinking
-Developing a coded solution

Programming skills
Problem Solving
Computational Thinking

Programming fundamentals (Python)
-Sequence
-Selection
-Iteration
-Variables
-Data types

What are some of the common algorithms?
How can I create them?

Algorithms
-Computational thinking
-Designing and creating algorithms
-Searching and sorting algorithms

Producing Robust programs
-Defensive design
-Testing

How can I create a robust program?
Testing skills

Logical thinking skills

Boolean Logic
-Logic gates
-Combining Boolean operators
-Truth Tables

Programming Languages and IDE's
-Languages
-Characteristics of IDE's

What are the different languages?

Is technology always good?
How can I stay on the right side of the law?
Critical thinking skills

Ethics
-Ethical issues
-Legal issues
-Cultural issues
-Environmental issues
-Privacy issues
-Legislation

Yr 11

Systems software
-Operating systems
-Utility Software

What does my operating system do?
What's the purpose of utility software?

How can I keep my computer safe?

Yr 10

Systems Architecture
-The CPU
-Von Neumann architecture
-Embedded systems

How does my computer work?

Memory and Storage
-Primary memory
-Secondary storage
-Units
-Data storage
-Compression

How does my data get stored?
Maths skills (unit conversions)

Computer networks
-Network topologies
-LAN vs WAN
-Protocols
-TCP/IP model

How does the internet work?
Abstract thinking skills

Network Security
-Threats
-Identifying and preventing vulnerabilities

Ashby School
Empowered to Learn