



Year 11

Algorithms

- To be able to represent and explain algorithms using structured language e.g. procedures.

Programming

- To understand the effect of the scope of a variable e.g. a local variable can't be accessed from outside its function.
- To be able to apply a modular approach to error detection and correction.

Data

- To understand the relationship between binary and electrical circuits, including Boolean logic.
- To understand how and why values are data typed in many different languages when manipulated within programs.
- To know a wide range of system security vulnerabilities and how to avoid them

Computer

- To understand that processors have instruction sets and that these relate to low-level instructions carried out by a computer

Communication

- To know the purpose of the hardware and protocols associated with networking computer systems.

Information Technology

- To understand the properties of media when importing them into digital artefacts

Digital literacy

- To use technologies and online services securely, and know how to identify and report inappropriate conduct.

Year 10

Algorithms

- To recognise that some problems share the same characteristics and use the same algorithm to solve both.

Programming

- To understand the difference between, and uses appropriately, procedures and functions including use of parameters.
- To be able to detect and correct syntactical errors.

Data

- To understand how numbers, images, sounds and character sets use the same bit patterns.
- To be able to perform simple operations using bit patterns e.g. binary addition.
- To understand the relationship between resolution and colour depth, including the effect on file size.
- To know a wide range of system security vulnerabilities and how to avoid them

Computer

- To understand the functions of the CPU including the fetch- execute cycle and how data is stored in memory.

Communication

- To know the names of basic network hardware and protocols.

Information Technology

- To be able to evaluate the trustworthiness of digital content and consider the usability for a known audience.

Digital literacy

- To be able to use technologies and online services securely, and know how to identify and report inappropriate conduct.



Heathfield Community College

Pathway 6

Year 9

Algorithms

- To understand that iteration is the repetition of a process such as a loop.

Programming

- To understand a textual language, including using standard libraries when programming.
- To be able to use a range of operators and expressions e.g. Boolean, and applies them in the context of program control.

Data

- To understand that digital computers use binary to represent all data.
- To understand threats to data and forms of attack.

Computer

- To understand the function of the main internal parts of basic computer architecture.
- To Understand CPU components and their functions and how they relate to memory

Communication

- To understand how to construct static web pages using HTML and CSS.
- To understand basic network topologies including star and mesh.

Information Technology

- To be able to evaluate the appropriateness of digital devices, internet services and application software.

Digital literacy

- To use technologies and online services securely, and know how to identify and report inappropriate conduct.

Year 8

Algorithms

- To be able to design a solution by decomposing a problem and create a sub-solution for each part.

Programming

- To understand the difference between, and appropriately use if and if, then and else statements.
- To be able to use a variable and relational operators within a loop to govern termination.
- To be able to design, write and debug modular programs using procedures.

Data

- To be able to perform more complex searches for information e.g. using Boolean and relational operators.
- To be able to list a wide range of security measures.

Computer

- To understand the main functions of the operating system.
- To know the difference between physical, wireless and mobile networks.

Communication

- To understand how to effectively use search engines and know how search results are selected.

Information Technology

- To be able to make judgements about digital content when evaluating and repurposing it for a given audience.

Digital Literacy

- To use technologies and online services responsibly and knows a range of ways to report concerns.



Year 7

Algorithms

- To be able to design solutions (algorithms) that use repetition and two-way selection i.e. if, then and else.

Programming

- To be able to declare and assign variables.
- To be able to use selection statements in programs, including an if, then and else statement.

Data

- To be able to understand the difference between data and information.
- To be able to explain basic data security rules.

Computer

- To understand the difference between hardware and application software, and their roles within a computer system.

Communication

- To understand the difference between the internet and internet service (www)

Information Technology

- To be able to create digital content to achieve a given goal through combining software packages.
- To be able to use internet services to communicate with a wider audience e.g. blogging.

Digital Literacy

- To be able to recognise what is acceptable and unacceptable behaviour when using technologies and online services.