



Year 11

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 use 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 considers the usability for a known audience.

Digital literacy

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

Year 10

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



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Pathway 5

Year 9

Algorithms

- To be able decompose a problem and create a solution that includes 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 be able to use technologies and online services responsibly.
- To know a range of ways to report concerns.

Year 8

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 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.



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Pathway 5

Year 7

Algorithms

- To be able to design simple algorithms using loops, and selection i.e. if statements.

Programming

- To be able to detect and correct simple semantic errors i.e. debugging, in programs.

Data

- To understand that programs can work with different types of data: text, number
- To know some ways of keeping data safe

Computer

- To be able to recognise and can use a range of input and output devices.

Communication

- To understand how to navigate the web and can carry out simple web searches to collect digital content

Information Technology

- To be able to use a variety of software to manipulate and present digital content: data and information.

Digital Literacy

- To be able to use computers safely and responsibly.
- To know a range of ways to report unacceptable content and contact when online.