

Year 9 Computing

	FOUNDATION	DEVELOPING	SECURE	EXCELLING
Physical computing	<ul style="list-style-type: none"> * I can describe the micro:bit * I can identify parts of the micro:bit * I can list the built-in components for input and output * I can use block code to write a simple program for the micro:bit 	<ul style="list-style-type: none"> * I can describe how to upload code to the micro:bit * I can use block code to write a game for the micro:bit * I can explain the process of uploading files to the micro:bit * I recognise syntax errors 	<ul style="list-style-type: none"> * I can test and debug Python programs for the micro:bit * I can use an IDE to write and execute a Python program * I can write programs that exchange messages wirelessly * I can write programs that use sensors and/or pins for input and output 	<ul style="list-style-type: none"> * I can design a physical computing artifact purposefully * I can decompose the functions of a physical computing system * I can implement the design of a physical computing project * I can test, revise and refine the design of a project * I can combine components to solve meaningful problems
Web design	<ul style="list-style-type: none"> * I can explain the meaning of HTML * I can describe the 'world wide web' * I can identify types of websites * I can explain the term 'domain name' * I can explain the term 'hyperlink' * I can explain why I must plan a website before building it 	<ul style="list-style-type: none"> * I can identify basic HTML tags * I can identify parts of a website * I can discuss the difference between using a template or text editor * I can explain why a website must be hosted using a web server using a domain name 	<ul style="list-style-type: none"> * I can discuss different navigation methods: hyperlinks, hotspots and menus * I can identify common web parts: banners, navigation, content and footers * I can apply CSS to format the website * I am able to discuss things to consider when planning a website 	<ul style="list-style-type: none"> * I can apply JavaScript to make the website interactive * I can apply a range of menu designs * I can discuss benefits and drawbacks of using web authoring software * I can test my website for different hardware and software * I can add 'responsive design' to improve the usability of my website * I can evaluate the website design
Audiovisual	<ul style="list-style-type: none"> * I can explain how digital images are made from binary * I can describe a pixel * I can select different colours using hexadecimal codes * I can explain that sound is a wave * I can use microphones and speakers 	<ul style="list-style-type: none"> * I can define key terms such as resolution and colour depth * I can describe how colour can be represented as a mixture of red, green and blue * I can move objects using wrapping tools * I can explain the need for compression 	<ul style="list-style-type: none"> * I can describe the link between file size and quality for digital media * I can calculate the representation size of a bitmap digital image * I can calculate the size of digital sounds * I can describe how digital images and sounds are represented as a sequence of bits 	<ul style="list-style-type: none"> * I can assess creative benefits and ethical drawbacks of digital manipulation * I can assess the use of AI when manipulating sound and images * I can explain the difference between lossy and lossless * I can apply advanced editing tools to solve problems.

Ethical, social and legal	<ul style="list-style-type: none"> * I can explain the term 'e-waste' * I can describe copyright * I can identify personal data * I can explain how technology changes society, such as driverless cars * I can describe 'malware' * I can define AI 	<ul style="list-style-type: none"> * I can discuss the effects of 'e-waste' * I can give examples of copyright * I can explain the need to protect personal data * I can give three examples of malware * I can discuss the use of driverless cars * I can define 'intellectual property' 	<ul style="list-style-type: none"> * I can discuss social, ethical and environmental effects of 'e-waste' * I can explain how the Copyright and Patents Act protects intellectual property * I can explain how the Data Protection Act protects personal data * I can explain how the Computer Misuse Act protects against malware * I can discuss the use of AI 	<ul style="list-style-type: none"> * I can discuss environmental and social impacts of data centres * I can explain how AI impacts the Copyright and Patents Act * I can analyse the effectiveness the Data Protection Act * I can evaluate how the Computer Misuse Act protects against complex malware * I can discuss the benefits and drawbacks of AI and driverless cars
Algorithms	<ul style="list-style-type: none"> * I can describe the term 'algorithm' * I understand that algorithms are not computer code * I understand that algorithms are used to solve a problem or plan a task * I understand that algorithms are a step of instructions 	<ul style="list-style-type: none"> * I can design a simple algorithm using a flowchart * I understand that algorithms are linked to Computational Thinking principles * I can identify suitable symbols to design a flow chart 	<ul style="list-style-type: none"> * I can design a simple algorithm using pseudocode * I understand that algorithms are used to calculate, process data and automate * I can design a flow chart using suitable symbols 	<ul style="list-style-type: none"> * I can design a complex algorithm using selection and iteration * I can design a complex algorithm using logical operators * I understand that algorithms are used to calculate, process data and automate
Python	<ul style="list-style-type: none"> * I can use an IDE to write and execute a basic Python program * I can explain input, process and output * I can explain the need to save Python code appropriately * I can call basic functions to design basic shapes * I can describe what lists are 	<ul style="list-style-type: none"> * I can use an IDE to write and execute a Python program asking for user input and output a message * I can create a basic list * I can call functions * I can identify basic syntax errors * I can describe the difference between the shell and interpreter windows 	<ul style="list-style-type: none"> * I can use selection (IF) to control the flow of program execution * I can trace through branches and loops * I can use variables to keep track of information * I can design lists and access individual elements * I can locate and correct syntax errors 	<ul style="list-style-type: none"> * I can use iteration (while) to control the flow of program execution * I can use variables to keep track of counts * I can use variables to keep track of information * I can combine features to develop solutions to meaningful problems * I can design functions (def) for specific purposes