Long-term planning

Computing - Year 8

Year 8 Themes	Autumn term 1	Autumn term 2	Spring term 1	Spring term 2	Summer term 1	Summer term 2
	Students will know that	**Students will know that**	**Students will know that**	**Students will know that**	**Students will know that**	**Students will know that**
• **e-Safety: Issues with trolling** • **Understanding computer hardware / software / binary** • **Understanding QR codes and barcodes** • **Understanding spreadsheets** • **Developing text-based coding skills** • **Introduction to website coding** • **Introduction to application design** **Digital literacy IDEA award 2**	School expectations surrounding the ICT Code of Conduct and how they should follow and respect this document. Different image file types include JPEG and PNG. The characteristics of a JPEG and PNG. An individual's digital footprint refers to the trail of data they leave when using the internet. An individual's digital footprint can have lasting consequences if it is not a positive one. The Online Safety Bill is a new set of laws to protect children and adults online. It has made social media	Computer hardware is made of various components that all work together inside a computer. The CPU a tiny quartz clock which 'ticks'. Each time it ticks it can process one single instruction, and it processes instructions very, very fast. A dual-core processor is like having two processors in one. A quad-core processor is four cores and can carry out even more instructions in the same period. The CPU has lots of little switches in it that can either be ON (a 1) or OFF (a 0).	All formulas in Microsoft Excel application start with = A cell reference refers to a cell or a range of cells on a worksheet and can be used in a formula so that Microsoft Excel can find the values or data that you want that formula to calculate. Formulas and built-in Microsoft Excel functions can be used to complete a range of tasks automatically. Tools such as "merge and centre", "wrap text", "borders" etc can be used to enhance the layout of the spreadsheet. The COUNTIF formula will check cell references against a	Target audiences of websites are important to consider when designing a website to ensure that it captures the intended audience. Website features such as: a clear navigation, a search bar, simple colour schemes, the use of text and images and accurate spelling and grammar all enhance the quality of a website design. Website features such as: too much text or fonts that are difficult to read, heavy in flash content, no colour scheme, music and irrelevant pictures all decrease the quality of a website. HTML stands for Hyper Text Markup Language and is not a	While loops are used when you want to repeat a sequence of instructions whilst a condition is met. When the condition is broken the loop will end. This is also known as repetition. E.g. while a>b: Boolean operators (such as AND/OR) are used to check if certain conditions are true before deciding the execution path the program will follow. Sprites, images and sound can all be manipulated via lines of code to create programs that are more engaging for users. Selection statements allow decisions to be made within the program. They are	App stands for application and is a piece of software that allows a user to perform a specific task or tasks and is usually designed to run on a mobile device. The four key techniques of Computational Thinking are used in creating an app. Decomposition, pattern recognition, abstraction and algorithms. GUI stands for Graphical User Interface and is the way a user views and interacts with an app. The GUI needs to meet the needs of the target audience. Whilst a different coding language may be used to code an app,

	companies more responsible for their users' safety on their platforms. Trolling is to post inflammatory or inappropriate messages or comments on the Internet, (especially a message board) for the purpose of upsetting other users and provoking a response.	Binary code is the only thing the CPU understands. Binary code is made up of 1's and 0's. Bitmaps are the name given to one way of storing graphics on a computer system. The resolution describes how big the pixels are in the image. The higher the resolution, the better the image quality. QR code stands for Quick Response Code. It is a series of pixels arranged in a square grid. This unique code acts like a barcode. The user scans the QR code which will direct them to some information.	condition and if the condition matches it will count and create a running total.	programming language, it simply tells a web browser how to display the page and what to display on a page. CSS stands for Cascading Style Sheets and defines the style and layout of web pages. CSS can be used to change the style of a whole website, one web page or a single occurrence of an element. You can divide up your webpage using the tag. Each section can have its own formatting applied. Due to changes in technology, websites are viewed on different size screens. Webpages must automatically adjust to fit. This is responsive design.	implemented in programming using IF statements. Nested statements are when are further statement is completed inside another statement. E.g. a for loop that has another for loop inside it. A function is a block of code which only runs when it is called. You can pass data, known as parameters, into a function. A function can return data as a result.	the same basic coding principles are still followed, such as variables, selection statements, loops, IF statements and functions.

	Students will know how	Students will know how	Students will know how	Students will know how	Students will know how	Students will know how
	Identify why the use of an ICT code of conduct within school is necessary Confidence in using other school systems such as VLE/remote access Folder management Save images into correct folders and insert these into Word documents. Manipulate images in Word e.g. changing the format of the images. Identify reasons behind the introduction of The Online Safety Bill. Explain how The Online Safety Bill will protect children and adults. Discuss the issues and impacts social media has had on society. Explain how social media, including trolling, can impact individual's mental health.	Identify which pieces of hardware are input devices and which are output devices. Describe the role of computer hardware components. Describe what impacts the speed and performance of a computer. Convert from denary-binary and binary-denary for up to 8-bit numbers. Create bitmap images of different resolution and be able to explain what causes images to become pixelated.	Complete simple calculations in Microsoft Excel using built-in functions such as SUM. Set up a Microsoft Excel quiz using a range of built-in functions such as the IF function and COUNTIF. Plan out an idea before creating it, thinking about things such as: formatting Excel for a clear layout, what formulas and functions will be needed. Evaluate the effectiveness of their own quiz. Peer assess fellow student quizzes.	Review websites to identify what features make a website good/bad and explain reasons for this. Create a basic HTML file using various tags such as <h1> <p> <b> <i> <IMG SRC> Create a HTML file using CSS to define the style and layout of the website using either line-by-line or embedded styling. Create a website that has various webpages that link together and to external links. Plan out a webpage before creating it, thinking about things such as: the layout of the page, the tags needed, the style needed, the text required. Evaluate the effectiveness of their own webpage. Peer assess fellow student webpages.	Debug programs that have syntax, logic or runtime errors in them. Use Boolean operators such as AND / OR to create complex Boolean statements. Use built-in functions such as isdigit() to add validation into programs. Import different libraries into Python such as "random" and "time" to add greater functionality to programs allowing them to use commands such as random.randint() Use image and sound in programs created to make programs that are more user-friendly.	Use decomposition, pattern recognition, abstraction and algorithms to produce a solution to a task or problem. To create an interesting GUI using accepted design principles including layout and colour, that is aimed at the target audience. To program an app following the given coding syntax.

	Vocabulary and the concepts they link to	**Vocabulary and the concepts they link to**	**Vocabulary and the concepts they link to**	**Vocabulary and the concepts they link to**	**Vocabulary and the concepts they link to**	**Vocabulary and the concepts they link to**
	Email, Virtual Learning Environment, Cyber-Security, Network, Software, Workstation, Word Processing, Image, JPEG, PNG, Digital Footprint, Trolling, Social Media, Mental Health	Hardware, Software, Input Devices, Output Devices, Central Processing Unit, Control Unit, Arithmetic Logic Unit, Motherboard, Power unit, Hard Drive, Random Access Memory, Read Only Memory, Heat sink, Clock Speed, Dual-Core Processor, Quad-Core Processor, Binary, Bitmaps, Resolution, Pixel, System Software, Utility Programs, Application Software	Spreadsheet modelling, formula, functions, cell reference, conditional formatting, SUM, IF function	Website, Webpage, HTML (Hyper Text Markup Language), CSS (Cascading Style Sheets), HTML Tags, Div, Syntax, Formatting, Responsive Design, Navigation	Debug, repetition, selection, operators, python libraries, Boolean operators, functions, string, integer, parameters	Application (app), software, graphical user interface (GUI), syntax, decomposition, pattern recognition, abstraction, algorithm, variable
	Assessment	**Assessment**	**Assessment**	**Assessment**	**Assessment**	**Assessment**
	End of unit VLE quiz Student assessment screenshot PPT	Student assessment screenshot PPT Assessment week 1	Student assessment screenshot PPT – including their own quiz and review of the quiz	Student assessment screenshot PPT	Low stake quizzes	Assessment week 2

	Diversity & development of cultural capital	Diversity & development of cultural capital	Diversity & development of cultural capital	Diversity & development of cultural capital	Diversity & development of cultural capital	Diversity & development of cultural capital
	Spiritual – fascination in learning about the world around them – how digital technology, social media and applications can impact young people Spiritual – what family values do households have in terms of social media usage? Moral – Computer Misuse Act, The Online Safety Bill Moral – understanding the consequences of actions Social – class/group discussions	Spiritual – fascination in learning about the world around them – how computer hardware and software is used all around them Social – class/group discussions	Spiritual – using creativity in learning Social – class/group discussions Social – understanding how society functions	Spiritual – fascination in learning about the world around them – how web pages are developed using HTML and CSS Spiritual – using creativity in learning Moral – Phishing websites Moral – understanding the consequences of phishing websites Social – class/group discussions	Spiritual – using creativity in learning Social – class/group discussions	Spiritual – using creativity in learning Spiritual – fascination in learning about the world around them – how applications are created Moral – understanding the consequences of actions Social – class/group discussions
	Cross-curricular opportunities and enrichment	**Cross-curricular opportunities and enrichment**	**Cross-curricular opportunities and enrichment**	**Cross-curricular opportunities and enrichment**	**Cross-curricular opportunities and enrichment**	**Cross-curricular opportunities and enrichment**
	iDEA - SLA 2	iDEA - SLA 2	Safer Internet Day			Alan Turing Day iDEA - SLA 2