

Long-term planning

Computing - Year 9

Year 9 Themes	Autumn term 1	Autumn term 2	Spring term 1	Spring term 2	Summer term 1	Summer term 2
<ul style="list-style-type: none"> • e-Safety: Issues with sexting • Developing text-based coding skills • Understanding computer networks and the Internet • Understanding Artificial Intelligence • Digital literacy skills: Microsoft PowerPoint and Microsoft Excel <p>Digital literacy IDEA award 3 (Completion)</p>	<p>Students will know that</p> <p>School expectations surrounding the ICT Code of Conduct and how they should follow and respect this document.</p> <p>Designing digital artefacts can be done in a variety of software applications and should be done using a variation of appropriate tools depending on the audience of the artefact.</p> <p>Font styles, sizes and colours are contributing factors to how readable digital artefacts are.</p> <p>When creating digital artifacts in the form of posters the right balance between text and images is important to capture the audience and</p>	<p>Students will know that</p> <p>An array is a special variable, which can hold more than one value at a time (also known as a list).</p> <p>You can manipulate list items by adding and removing items using built-in commands.</p> <p>Nested statements are when are further statement is completed inside another statement. E.g. an if statement with another if statement inside it</p> <p>Global variables are variables that can be accessed from anywhere within a program and are not limited to within functions/procedures as local variables can be.</p>	<p>Students will know that</p> <p>When you type in certain words into the Python IDLE the text will change colours. E.g. purple words are command words, black words are normal words, green words are what will be displayed to the user or what the user will type in and orange words are statement words.</p> <p>String concatenation means add strings together, if a different data type needs adding to the string, then str() must be used to convert the data type into a string.</p> <p>Arithmetic operators are used to construct mathematical calculations and for longer, more complex calculations the use of brackets in the correct place needs to be considered.</p>	<p>Students will know that</p> <p>A computer network is a set of computers sharing resources located on or provided by network nodes. Computers use common communication protocols over digital interconnections to communicate with each other.</p> <p>Computer networks can be a local area network (over one building/a small geographical location) or a wide area network (over a large geographical location).</p> <p>Network topology refers to the arrangement of different elements like nodes, links, and devices in a computer network. It defines how these</p>	<p>Students will know that</p> <p>Artificial Intelligence (AI) is when a computer program or machine is able to perform tasks, think and learn like a human.</p> <p>Generative AI focuses on creating new content like text, images, and music.</p> <p>ChatGPT and Microsoft copilot are examples of generative AI tools.</p> <p>Machine learning (ML) is a branch of artificial intelligence (AI) and computer science that focuses on the using data and algorithms to enable AI to imitate the way that humans learn, gradually improving its accuracy.</p> <p>As of today, AI is primarily utilised to increase speed and accuracy in the</p>	<p>Students will know that</p> <p>Microsoft PowerPoint has a variety of tools that can assist users in making digital artefacts for a range of purposes.</p> <p>In Microsoft PowerPoint you can link slides together by creating hyperlinked buttons.</p> <p>Slide master allows you to include content on every single slide that cannot be adapted when out of the slide master view to ensure consistency with the theme of the presentation.</p> <p>Various graphs can be used to visually represent data in Microsoft Excel.</p>

	<p>ensure the artifact has maximum reach.</p> <p>Social media platforms such as TikTok have the potential to become a toxic environment for children, exposing them to highly addictive content and inappropriate, negative content and commentary.</p> <p>Sexting is the sending or receiving of nude or sexually provocative photos or videos, usually by text message or other digital technology.</p> <p>It is an offence for a person to take, distribute, possess, or publish indecent photographs of a child under 18.</p> <p>Support is available for young people to access if they are worried about content, they see online via CEOP, ChildLine, Stonewall and The Mix. (other services are also available)</p>	<p>The split () method splits a string into a list. You can specify the separator that you want to use to split the string.</p> <p>Indexing refers to the process of accessing a specific element in a sequence, such as a string or list, using its position or index number. Indexing in Python starts at 0, which means that the first element in a sequence has an index of 0, the second element has an index of 1, and so on.</p> <p>String concatenation means add strings together, if a different data type needs adding to the string, then str() must be used to convert the data type into a string.</p> <p>Dictionaries are used to store data values in key:value pairs. Dictionaries are written with curly brackets.</p>		<p>components are connected and interact with each other.</p> <p>IP Addresses have a structure: □ □ □ . □ □ □ . □ □ □ . □ □ □ and each part of the address is a number from 0 to 255.</p> <p>A router works out which workstation has asked for a web page and when the request has been located, knows how to route it to that device.</p> <p>DNS is used to match human readable names to IP addresses e.g. www.bbc.co.uk / 212.58.246.95</p> <p>The internet is a global network of interconnected computers using wires to allow them to speak to each other.</p> <p>The world wide web is a set of documents/pages that are hyperlinked together giving access</p>	<p>healthcare industry. Some of the current uses of AI in this field include Diagnosing Patients: AI algorithms analyse medical imaging data, such as X-rays, MRIs, and CT scans, to assist healthcare professionals in accurate and swift diagnoses.</p>	
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Up-skirting is a highly intrusive practice, which typically involves someone taking a picture under another person's clothing without their knowledge, with the intention of viewing their genitals or buttocks (with or without underwear).

Fake news is news or stories created to deliberately misinform or deceive readers. Fake news is often created to influence views or for political motives.

Click bait is content whose main purpose is to attract attention and encourage visitors to click on a link to a particular web page.

to sounds, images, videos and text.

	Students will know how	Students will know how	Students will know how	Students will know how	Students will know how	Students will know how
	<p>Identify why the use of an ICT code of conduct within school is necessary.</p> <p>Have confidence in using other school systems such as VLE/remote access.</p> <p>Educate other students of West Hill School (particularly new year 7 students) about the rules and expectations when using the school ICT facilities.</p> <p>Create digital artifacts for a given audience using a chosen software, with attention to trustworthiness, design and usability.</p> <p>Identify the laws surrounding “sexting” and “upskirting” and the consequences of sharing explicit images.</p> <p>Identify what support services such as CEOP, childline, Stonewall and</p>	<p>Create arrays in Python using the correct syntax, including appending and deleted items along with using len() to find the length of a list.</p> <p>Search for items in arrays using selection statements.</p> <p>Create mini games on Python in Pieces using the sprites and background features.</p> <p>Use Python to translate between base 10 and base 2.</p> <p>Use Python to linear search algorithm.</p>	<p>Identify and debug common syntax and logic errors in Python.</p> <p>Comment on lines of code using the “#” to explain what the lines of code are for/what they will do.</p> <p>Make small changes to code to make it appear more user-friendly when running in the Shell. E.g. \n, time.sleep(1)</p> <p>Work independently creating coding solutions to given problems, using creativity.</p>	<p>Explain the advantages and disadvantages of being in a network.</p> <p>Describe how workstations connect to a network, using servers, WiFi/wired connections, routers and firewalls.</p> <p>Identify the differences between a bus, ring and star topology and the advantages and disadvantages of each.</p> <p>Identify network hardware components and explain the role they have within a network.</p> <p>Design a network, identifying key components needed and potential cost implications.</p>	<p>Consider the ethical implications that arise from the use of AI.</p> <p>Use generative AI tools to create unique images that are appropriate for a considered audience.</p> <p>Identify careers that have been impacted by the development of AI.</p> <p>Peer assess fellow student generative AI creations.</p> <p>Evaluate the effectiveness of their own creations using generative AI tools.</p>	<p>Use a range of tools to create an interactive PowerPoint in Microsoft PowerPoint.</p> <p>Consider the target audience of digital artifacts to ensure that content covered, along with fonts and colour schemes are appropriate for the intended audience.</p> <p>Identify consistent content that needs to appear on each slide and use the slide master to ensure consistency in the design.</p> <p>Use a variety of graphs in Microsoft Excel and select the most appropriate graph for the purpose.</p>

	The Mix off for young people to access.					
	Advise young people on what they should do if explicit images of themselves are distributed.					
	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, Computer Misuse Act, Digital Footprint, Sexting, Up-skirting, social media, Data privacy, Click bait, Fake news	Array, Selection, nested statements, global variable, functions, local variable, indexing, sequence, string concatenation, dictionaries, linear search	Python, Python IDLE, Python Shell, Syntax, String concatenation, Arithmetic operators	Computer Network, Peripherals, IP Address, Wide Area Network (WAN), Local Area Network (LAN), Peripherals, Routers, Domain Name System (DNS), Firewall, Switch, Server, Intranet, Data, Workstation, Network Topology, Ethernet, Internet Service Provider	Artificial intelligence, wearable technology, generative AI, machine learning, ethics	Interactive PowerPoint, formatting, target audience, digital artifacts
	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment
	Student assessment screenshot PPT Assessment week 1	Low stake quizzes	Student assessment screenshot PPT	Student assessment screenshot PPT Assessment week 2	Student assessment screenshot PPT	Low stake quizzes

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 digital technology usage? Moral – Computer Misuse Act, Sexting, Up-skirting Moral – understanding the consequences of actions Social – class/group discussions, taking on the role of a councillor	Spiritual – using creativity in learning Social – class/group discussions	Spiritual – using creativity in learning Moral – ethical issues associated with program developers Social – class/group discussions	Spiritual – fascination in learning about the world around them – how networks are used all around them Moral – ethical issues associated with the internet and the world wide web Moral – Recognising right and wrong and understanding the consequences of inappropriate use of the internet Social – class/group discussions	Spiritual – fascination in learning about the world around them – how AI is used all around them Moral – ethical issues associated with AI Moral – Recognising right and wrong and understanding the consequences of algorithmic bias Social – class/group discussions “AI is likely to be either the best or worst thing to happen to humanity” “Do you think AI will “rule the world by 2050”?”	Spiritual – using creativity in learning 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 3		Safer Internet Day iDEA - SLA 3	Research task - careers linked to Computer Networking iDEA - SLA 3	Virtual opportunity – Tech in Gen AI Research task - emerging/changing careers based on AI	Alan Turing Day iDEA - SLA 3