

Long Term Plan KS3 IT - Year 8

Half term	Unit title	Key knowledge/ Content to learn and retain	Essential skills to acquire (subject & generic)	Link to subject ethos and driver	Anticipated misconceptions	Links to previous KS	Links to future KS	Opportunity for stretch for high prior attainers	SMSC & British Values	Cultural Capital	Career Link
HT1 05.09.22 - 21.10.22 7 weeks	Word, websites/ blogs	<p>Describe what HTML is Use HTML to structure static web pages Modify HTML tags using inline styling to improve the appearance of web pages</p> <p>Display images within a web page Apply HTML tags to construct a web page structure from a provided design</p> <p>Describe what CSS is Use CSS to style static web pages Assess the benefits of using CSS to style pages instead of in-line formatting</p> <p>Describe what a search engine is Explain how search engines "crawl" through the WWW and how they select and rank results</p> <p>Analyse how search</p>	<p>Planning (design skills)</p> <p>Problem solving</p> <p>Creating hyperlinks</p>	Creating solutions to problems.	<p>Hyperlinks</p> <p>We page structure and how people 'view' and 'read' these</p>	Students may have used hyperlinks when working on PowerPoint presentations in the past	BTEC DIT - students need to design and create a multimedia product, using hyperlinks.	Developing web pages, e.g. using scrolling marquee	<p>Resilience is taught through the lessons when students are pushed to achieve their best, moving out of their perceived limits at times and getting the deserved rewards as a result.</p> <p>Mutual respect for tolerance of those with different levels of understanding and knowledge - peer support.</p> <p>Copyright - rule of law - discussed when using images</p>	<p>We encourage students to read newspapers</p> <p>We encourage students to watch the news</p> <p>Current affairs are incorporated into lessons</p> <p>Make links to 'real life'</p>	Web design - research careers task

		<p>engines select and rank results when searches are made</p> <p>Use search technologies effectively Discuss the impact of search technologies and issues that arise by the way they function and the way they are used Create hyperlinks to allow users to navigate between multiple pages</p> <p>Implement navigation to complete a functioning website</p>									
<p>HT2 31.10.22 - 16.12.22 7 weeks</p>	<p>Spreadsheets</p>	<p>Recap on Basic spreadsheet skills from Y7.</p> <p>Advanced skills</p> <ul style="list-style-type: none"> - COUNTA - COUNTIF - COUNTBLANK - IF - WHATIF - SUMIF - Conditional formatting <p>Filtering</p> <p>Absolute cell references (dollar sign and named cells)</p> <p>Summaries of data represented effectively.</p>	<p>Problem solving</p> <p>Manipulating data independently</p> <p>Trial and error</p> <p>Computational thinking - logic - predicting, analysing</p> <p>Mathematical operators</p> <p>Resilience</p>	<p>Progress in computing key topics - application software</p> <p>Progress in computing key topics - data</p> <p>Analyse problems in computational terms</p> <p>Apply K&U of the key concepts and principles of computing</p> <p>Develop</p>	<p>Basic recap will be needed, e.g. formulas start with =, * is multiply etc.</p> <p>Students may need help removing filters once applied.</p> <p>Graphs/charts - titles.</p>	<p>KS2 outcome: select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting</p>	<p>In Y9 students will further develop their spreadsheet skills.</p> <p>This will be built on further at KS4 should they choose IT as an option.</p>	<p>Explaining and analysing.</p> <p>Evaluation</p> <p>Alternative solutions</p>	<p>Resilience is taught through the lessons when students are pushed to achieve their best, moving out of their perceived limits at times and getting the deserved rewards as a result.</p> <p>Mutual respect for tolerance of those with different levels of understanding and knowledge - peer support.</p>	<p>We encourage students to read newspapers</p> <p>We encourage students to watch the news</p> <p>Current affairs are incorporated into lessons</p> <p>Make links to 'real life'</p>	<p>Link to business and how businesses might use spreadsheets.</p> <p>*Map to NC outcomes</p> <p>design, use and evaluate computational abstractions that model the state and behaviour of real-world problems and physical systems</p> <p>undertake creative projects that involve</p>

				confident and responsible use of modern information technologies		data and information In Y7 students will have learnt basic formulas, cell referencing, and the SUM, MIN , MAX and AVERAGE Functions. They will also have created charts.					selecting, using, and combining multiple applications, preferably across a range of devices, to achieve challenging goals, including collecting and analysing data and meeting the needs of known users
--	--	--	--	--	--	--	--	--	--	--	---

<p>HT3 04.1.2 3 - 10.02. 23</p> <p>6 weeks</p>	<p>Hardware and Software</p>	<p>Computer hardware - components and functionality</p> <p>Measuring computer performance</p> <p>Computer peripherals and the different input and output devices</p> <p>Storage devices and media</p> <p>The internet of things</p>	<p>Literacy - explaining</p> <p>Technical awareness</p>	<p>Apply K&U of the key concepts and principles of computing</p> <p>Communication and the internet</p> <p>How equipment works</p>	<p>Different input/output devices - e.g. digital cameras, touch screen devices - misunderstanding of if input/output or both</p>	<p>In Y7 the students will have looked at networks and will have used different pieces of hardware and software</p> <p>KS2: understand computer networks, including the internet; how they can provide multiple services, such as the World Wide Web, and the opportunities they offer for communication and collaboration</p>	<p>Links to the KS4/5 IT and Computing curriculums</p>	<p>Potential to look at devices inside a computer in more detail</p>	<p>Resilience is taught through the lessons when students are pushed to achieve their best, moving out of their perceived limits at times and getting the deserved rewards as a result.</p> <p>Mutual respect for tolerance of those with different levels of understanding and knowledge - peer support.</p> <p>From an environmental standpoint students are encouraged to understand the ways that computer systems and parts can be recycled, reused and have extended lives. The understanding of environmental impacts is</p>	<p>We encourage students to read newspapers</p> <p>We encourage students to watch the news</p> <p>Current affairs are incorporated into lessons</p> <p>Make links to 'real life'</p>	<p>Technicians and technical roles in IT</p> <p>*NC statements</p> <p>understand the hardware and software components that make up computer systems, and how they communicate with one another and with other systems</p> <p>understand how instructions are stored and executed within a computer system</p> <p>understand a range of ways to use technology safely, respectfully, responsibly and securely, including protecting their online identity and privacy;</p>
--	------------------------------	---	---	---	--	--	--	--	---	--	---

									taught through lesson themes.		
--	--	--	--	--	--	--	--	--	--	--	--

HT4 20.02. 23 - 31.03. 23 6 weeks	Python	Using the print function Variables Inputs Selection Finding and fixing errors	Problem solving Writing programs Trial and error Computational thinking - logic - predicting, analysing Mathematical operators	Creating students who can solve problems and think outside the box to create solutions	Capital letters Spelling (Syntax errors) Logical errors Naming variables	Students will have had experience with block based programming both at primary school and in Y7..	In GCSE Computer science students need to use programming languages such as Python.	All lessons will include challenge tasks in them, specific examples include writing own code unguided and also creating 'How to' guides.	Resilience is taught through the lessons when students are pushed to achieve their best, moving out of their perceived limits at times and getting the deserved rewards as a result. Mutual respect for tolerance of those with different levels of understandin g and knowledge - peer support.	We encourage students to read newspapers We encourage students to watch the news Current affairs are incorporated into lessons Make links to 'real life'	In the first lesson students need to research IT jobs, specifically a software developer. Teacher to discuss range of IT options pre KS3 with students at this point. *NC statements use two or more programming languages, at least one of which is textual, to solve a variety of computational problems; make appropriate use of data structures [for example, lists, tables or arrays]; design and develop modular programs that use procedures or functions
HT5 17.04.	Online Safety	Online reputation - Examples of	Online safety skills - this	Wisdom to know how	How search engines are	Please refer to the	Please refer to the	The outcomes for	From an environmenta	We encourage	The skills learned from

<p>23 - 26.05.23</p> <p>6 weeks</p>		<p>impacts and how this can affect future opportunities</p> <ul style="list-style-type: none"> - How to manage online reputation <p>Online bullying</p> <ul style="list-style-type: none"> - How this may change as we grow older - Types of bullying - Victim blaming - Actions <p>Privacy and security</p> <ul style="list-style-type: none"> - Risks of activities online - Ways to change browser settings - App permissions - Security of devices <p>Copyright</p> <ul style="list-style-type: none"> - Concepts of software and content licencing - Consequences of illegal access or downloading - How to protect own creations 	<p>term will cover 5 of the 8 key strands from the Education for a connected world framework</p> <p><i>*Note the others are covered in Collective worship and PSICHE</i></p> <p>Communication skills - class discussions</p> <p>Literacy skills - literacy tasks in line with school policy</p>	<p>to be safe online and to have the courage to ask for help when needed</p> <p>Online reputation : Students will explore the concepts of reputation and how others may use online information to make judgement s.They will have opportunities to develop strategies to manage personal digital content effectively and capitalise on technology's capacity to create effective positive profiles.</p> <p>Managing online information: Students</p>	<p>ranked</p> <p>How to tell if a source is valid and reliable</p> <p>That content posted online may be used by others</p> <p>Freedom of speech and moral issues of content posted</p> <p>Fake news - what it is/isn't</p>	<p>"Education for a Connected World" framework which shows progression for all strands from KS1-KS5</p>	<p>"Education for a Connected World" framework which shows progression for all strands from KS1-KS5</p>	<p>the following year will be used as challenge work</p> <p>Real life applications and giving advice to others on topics will form a part of the challenge tasks</p>	<p>I standpoint students are encouraged to understand the ways that computer systems and parts can be recycled, reused and have extended lives. The understanding of environmental impacts is taught through lesson themes.</p> <p>Democracy is something students will learn about and will know how to treat others fairly and how to make things work for the whole class as well as the individual.</p> <p>Rule of Law is taught through lesson themes as well with school rules also being adhered to and</p>	<p>students to watch the news</p> <p>Make links to 'real life' examples</p>	<p>completing KS3 will provide background and knowledge for students to progress into work roles and be computer and software literate.</p> <p>Specialist careers in IT will include:</p> <ul style="list-style-type: none"> IT teacher Web designer Graphic artist Animator Software Developer Data Analyst Systems Analyst Business Analyst IT Support Analyst Network Engineer IT Consultant
-------------------------------------	--	--	---	--	--	---	---	--	--	---	--

				<p>will explore how online information is found, viewed and interpreted. They will learn strategies to search effectively, evaluate data, recognise risks and manage content of online threads and challenges. They should understand ethical publishing.</p> <p>Online bullying: Students will explore bullying and other online aggression and how technology impacts on these issues. They will learn strategies for effective reporting</p>				<p>considered at all times.</p> <p>Individual Liberty – It is important to have students understand their freedoms as well as knowing how these fit in with the school ethos. Students will know their rights as individuals and will know both what to expect and what is expected of them.</p> <p>Mutual respect for tolerance of those with different faiths and beliefs, and for those without faith is important</p> <p>Resilience is taught through the lessons when students are pushed to achieve their</p>	<p>Technical Sales Rep</p> <p>NC Links: understand a range of ways to use technology safely, respectfully, responsibly and securely, including protecting their online identity and privacy; recognise inappropriate content, contact and conduct and know how to report concerns.</p>
--	--	--	--	--	--	--	--	---	--

				<p>and intervention and consider how bullying and other aggressive behavior relates to legislation.</p> <p>Online relationships: Students explore how technology shapes communication styles and identifies strategies for positive relationships in online communities. They are given the opportunity to discuss relationships, respecting, giving and denying consent and behaviours that may lead to harm and how positive interaction</p>					<p>best, moving out of their perceived limits at times and getting the deserved rewards as a result.</p>		
--	--	--	--	---	--	--	--	--	--	--	--

				<p>online can empower and amplify voice.</p> <p>Privacy and security: Students will explore how personal online information can be used, stored, processed and shared. They will learn both behavioural and technical strategies to limit impact on privacy and protect data and systems against compromise.</p> <p>Copyright and ownership : Students will explore the concept of ownership of online content and</p>							
--	--	--	--	--	--	--	--	--	--	--	--

				explore strategies for protecting personal content and crediting the rights of others as well as addressing potential consequences of illegal access, download and distribution.							
HT6 5.06.2 3 - 21.07. 23 7 weeks	Binary and computer logic	<p>Know that digital devices rely on switches to make decisions involved in data processing</p> <p>Understand the operation of AND, OR and NOT logic gates</p> <p>Be able to complete the truth tables for logic gates</p> <p>Understand the significance of 1s and 0s in data processing within digital systems</p> <p>Know what the binary system is</p> <p>Understand how binary numbers relate to denary numbers</p>	<p>Logical/computational thinking</p> <p>Trial and error</p> <p>Problem solving</p> <p>Resilience</p>	<p>Creating students who can solve problems and think outside the box to create solutions</p> <p>Apply K&U of the key concepts and principles of computing</p> <p>Programming and data</p>	<p>Logic gates - the operation of each type</p> <p>Truth tables - how these work</p> <p>Converting to and from binary</p>	<p>use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs</p>	KS4/5 Computer science	<p>Challenge work</p> <p>Understand how the ASCII system has standardised the way characters are represented</p> <p>Be able to convert ASCII text into binary strings and vice versa</p>	<p>Mutual respect for tolerance of those with different faiths and beliefs, and for those without faith is important</p> <p>Resilience is taught through the lessons when students are pushed to achieve their best, moving out of their perceived limits at times and getting the deserved rewards as a result.</p>	<p>We encourage students to watch the news</p> <p>Make links to 'real life' examples</p>	<p>App design - link to Business and software developer</p> <p>NC Outcomes - understand simple Boolean logic [for example, AND, OR and NOT] and some of its uses in circuits and programming; understand how numbers can be represented in binary, and be able to carry out simple operations on</p>

		<p>Know how to count in binary</p> <p>Know how to convert binary numbers to denary numbers</p> <p>Design an app</p> <p>Code their application</p> <p>Review someone else's app</p> <p>Evaluate their own app</p> <p>Understand the meaning of 'data representation'</p> <p>Produce an algorithm for encoding an image into a binary string</p> <p>Be able to decode binary strings to create black and white colour images</p> <p>Understand the importance of metadata</p>									<p>binary numbers [for example, binary addition, and conversion between binary and decimal]</p> <p>understand how instructions are stored and executed within a computer system; understand how data of various types (including text, sounds and pictures) can be represented and manipulated digitally, in the form of binary digits</p>
--	--	---	--	--	--	--	--	--	--	--	--

Skills developed throughout the programme

Cognitive skills

- Non-routine problem solving – expert thinking, metacognition, creativity.
- Systems thinking – decision making and reasoning.
- Critical thinking – definitions of critical thinking are broad and usually involve general cognitive skills such as analysing, synthesising and reasoning skills.
- ICT literacy – access, manage, integrate, evaluate, construct and communicate.

Interpersonal skills

- Communication – active listening, oral communication, written communication, assertive communication and non-verbal communication.
- Relationship-building skills – teamwork, trust, intercultural sensitivity, service orientation, self-presentation, social influence, conflict resolution and negotiation.
- Collaborative problem solving – establishing and maintaining shared understanding, taking appropriate action, establishing and maintaining team organisation.

Intrapersonal skills

- Adaptability – ability and willingness to cope with the uncertain, handling work stress, adapting to different personalities, communication styles and cultures, and physical adaptability to various indoor and outdoor work environments.
- Self-management and self-development – ability to work remotely in virtual teams, work autonomously, be self-motivating and self-monitoring, willing and able to acquire new information and skills related to work.