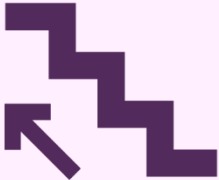






<p><u>What will we be learning?</u></p> <p>01 – Basic Skills</p> 	<p><u>Why this? Why now?</u></p> <p>It's really important for all students to get a good understanding of these key tools before engaging with further tasks using these. This includes both within the Computing curriculum as well as in use in other subjects beyond. You may have had a slightly different experience coming through different Primary Schools, so this unit is designed to cover the way we approach the computer systems at Highcliffe, to ensure consistency.</p>	<p><u>Key Words:</u></p> <p>Directory</p> <p>Folder Structure</p> <p>Naming Convention</p> <p>Outlook</p> <p>Shared Docs</p> <p>Documents</p> <p>My Documents</p> <p>Cybersecurity</p> <p>Desktop</p> <p>Start Menu</p> <p>Shortcut</p> <p>Program Link</p> <p>Icon</p> <p>Etiquette</p> <p>MyHighcliffe</p> <p>MyData</p> <p>MyCurriculum</p> <p>Ctrl</p> <p>Alt</p> <p>Del</p>
<p><u>What will we learn?</u></p> <p>Key elements surrounding cybersecurity such as password good practise, accessing files and emails safely, and file management. We will also focus on key Microsoft Word and PowerPoint Skills that build upon and extend the knowledge from different Primary Schools. You can think of this as an introduction to the way the IT systems work at Highcliffe and how best approach work.</p>		
<p><u>What opportunities are there for wider study?</u></p> <p>These skills will be used in the next Year 7 unit (esafety) as well as in all digital units from now on. Other subjects may require that you create and store information in your 'My Documents' and the naming convention and organisation is important to ensure that you can access these effectively going forwards.</p>		
<p><u>How will I be assessed?</u></p> <p>Word Assessment - through designing and writing a letter to parents inviting them into the school for a specific event.</p> <p>PowerPoint Assessment - investigating the use of design and considering the space needed to share content within the context of a new house style for the school.</p>		




<p><u>What will we be learning?</u></p> <p>02 – E Safety</p> 	<p><u>Why this? Why now?</u></p> <p>It's really important to ensure that you are equipped for potential issues surrounding esafety / cybersecurity as you move through your secondary school life. This might mean talking about elements that you haven't covered in primary school and this is the reason that we want to ensure that you have the skills and knowledge early in Year 7.</p>	<p><u>Key Words:</u></p> <p>Digital Footprint</p> <p>Social Media</p> <p>Online Gaming</p> <p>Cyberbullying</p> <p>Digital Detox</p> <p>Social Responsibility</p> <p>E Safety</p> <p>Online tools</p> <p>Fake News</p> <p>Chat sites</p> <p>Security</p> <p>Malicious Software</p> <p>Malware</p>
<p><u>What will we learn?</u></p> <p>You will investigate different elements of keeping safe online including: your Digital Footprint, how every website and app that you visit uses data to track your engagement; Social Media, ensuring that you have an awareness of how the information (through text posts, images and videos) that you post online may be used; Online Gaming, including both the issues of addiction and communicating with people you don't know online. We will also investiage some Video Design skills as you develop a short information video on Cyberbullying, it's effects and ways to support yourself and others, should you be effected.</p>		
<p><u>What opportunities are there for wider study?</u></p> <p>Parts of this unit will be revisited as part of PSHE throughout the different years, we as a Computing Curriculum revisit elements of Cybersecurity in the dedicated Year 9 unit on Cybersecurity and also in 'How the Internet Works'. There are also cybersecurity events avaiable within the school years, keep an eye on the STE(A)M newsletters and BECI screen (outside IT3/4).</p>		
<p><u>How will I be assessed?</u></p> <p>You will develop a formal presentation on the key elements that you present to the parents of students joining the school at an online safety event held in June. This will also feature the video that you are creating on their entry to help define what Cyberbullying is and how to support people who may be affected by this. This will be uploaded to Microsoft Teams to allow you to include the multimedea elements in this assessment.</p>		




<p><u>What will we be learning?</u></p> <p>03 – Virtual Pet</p> 	<p><u>Why this? Why now?</u></p> <p>This is a stepping stone programming language, which you may have investigated at Primary School. This possible previous experience allows us to cover more advanced concepts within an accessible interface (Scratch). The concepts will be revisited in further units but the ideas and experiences that you have had in the past can be leveraged from this method. We will also revisit the concepts (Variables, Sequence, Selection, Iteration) within the python and microbit units.</p>	<p><u>Key Words:</u></p> <p>Sequence Selection Iteration Variable Block Sprite Background</p>
<p><u>What will we learn?</u></p> <p>This is our first step into programming in Key Stage 3, we use the programming language Scratch to cover key elements such as Variables, Sequences of instructions (algorithms), Selection (using the 'IF/ELIF/ELSE' blocks), Iteration (While, forever, for), as well as investigating the ideas of a function. This is covered through the lesson information, then directly applied using a set of challenges. You then have the opportunity to apply this knowledge through a project, where you are tasked with creating a 'virtual pet' similar to the Tamagotchi, in order to show off the creativity side as well as programming ability.</p>		<p>Costume Code Forever Motion Looks Sensing Control Operator</p>
<p><u>What opportunities are there for wider study?</u></p> <p>Programming in general is vast, with different programming languages varying in complexity and use. Scratch is a brilliant starting point as it bridges the gap between Primary and Secondary. You can expand your knowledge of the scratch programming language, with further tools such as the 'pen' to illustrate different programming principles in this structure (such as turtle). Python in Year 8 moves on to a text-based programming language, taking this knowledge beyond the limitations of the Scratch Interface. Many students have also used Scratch as a presentation method for different subject, when suitable. Such as handing in an animation completed in the interface for a Geography unit.</p>		<p>Function Logic IF/THEN/ELSE</p>
<p><u>How will I be assessed?</u></p> <p>Key challenges interspersed throughout the learning (1-9 over 5 lessons) as well as a longer project diary/evidence log.</p> <p>Final products (the virtual pet itself) is also assessed for both creativity and programming focus.</p>		




<p><u>What will we be learning?</u></p> <p>04 – Computer Components</p> 	<p><u>Why this? Why now?</u></p> <p>This unit is a really key part of understanding the structure within a computer and therefore core when looking at the next steps in computing (the 'how the internet works' unit as well as GCSE option) therefore we wanted to include this early in the KS3 course. This has also been timed to follow a unit in Mathematics, where you have investigated different number bases and therefore have looked at this kind of content before.</p>	<p><u>Key Words:</u></p> <p>Binary Denary / Decimal Bit Byte Kilobyte (KB) Megabyte (MB) Gigabyte (GB) ASCII Pixel Resolution Bit Depth Sample Rate CPU RAM Secondary Storage Peripherals</p>
<p><u>What will we learn?</u></p> <p>This unit is split into two and covers Data Representation and Internal components of the CPU. The first section (data representation) discusses how computers store numbers using Binary as well as Binary Conversion (between our numbers and a computers), Binary Addition (adding 1+1 together) as well as how letters, images and sound files are stored in a computer. The section about the Internal Components CPU covers the parts inside of the processor, how and what RAM is, why we need Secondary Storage (such as hard drives or SSDs) as well as input and output devices you might be familiar with.</p>		
<p><u>What opportunities are there for wider study?</u></p> <p>Key knowledge from this unit is used directly in the 'How the Internet Works' as binary data is transferred around the internet. These units also make up the first two sections of the GCSE Computer Science, therefore more information can be found on the BECI (sharepoint) pages for this course.</p>		
<p><u>How will I be assessed?</u></p> <p>As this unit is heavily linked to core concepts we make use of the tools from Microsoft Forms. These are split within the curriculum and used as a tool to provide immediate feedback. Some of these questions do require you to spend some time working some answers out on paper before submitting these.</p>		




<p><u>What will we be learning?</u></p> <p>05 – Spreadsheets</p> 	<p><u>Why this? Why now?</u></p> <p>Part of being digitally literate means that a range of tools can be used, the Basic Skills unit investigates the Microsoft Word and PowerPoint items but this unit really explores the program Excel. Part of the reason for this is that this skill was missing further into the students' school career, not just within the world of Business, Economics, Computing and IT but also in Science and Geography, as both have a need for this kind of large scale data processing and manipulation.</p>	<p><u>Key Words:</u></p> <p>Formula Calculation Operators Count Sum Vlookup Pivot Tables IF</p>
<p><u>What will we learn?</u></p> <p>Spreadsheets are a very powerful tool in computing and IT and can be used to model real world situations with a high degree of accuracy. Students are guided through several different sets of tools with small scale examples but also given the opportunity to apply this to a larger data set, with the use of 'real world' data from the school's Taster Day. This requires the students to take the part of an admin assistant and provide a level of logical processing to the initial data set, use this to make predictions and present the data in a more meaningful manner (such as a graph), all within a familiar scenario.</p>		
<p><u>What opportunities are there for wider study?</u></p> <p>The information and method of delivery (familiar Office application) allow for more logical processing to be carried out, for example the IF function serves the same purpose here as well as in the Scratch, Microbit and Python units. The merchandise section of the Branding unit also calls for some spreadsheet recall and application of business processes.</p>		
<p><u>How will I be assessed?</u></p> <p>Continuing assessment throughout the main tasks, such as the 'IF' structures. Within tasks Taster Day Task (real world) with the support of an administration guide.</p>		




<p><u>What will we be learning?</u></p> <p>06 – Python</p> 	<p><u>Why this? Why now?</u></p> <p>Having already explored the context of the programming language scratch, as well as the more 'English-like' statements of the commands within the Spreadsheet unit explores how the control of computers is generated through text-based commands. Students should be able to spot links between some of the context in these units.</p>	<p><u>Key Words:</u></p> <p>Algorithms</p> <p>Programming Language</p> <p>Syntax</p> <p>Variables</p> <p>IF / Selection</p> <p>Loop / Iteration</p>
<p><u>What will we learn?</u></p> <p>Python is the main text-based programming language that we explore, building on the foundations from Scratch in year 7. Similar concepts are explored, this time with the use of an online IDE (Integrated Development Environment) to help with the syntax (rules of the language) and collation of files. Students are given opportunities to break problems down into smaller parts in order to build their solutions over time. Determination and perseverance as key general skills, alongside precision and 'debugging' which may be more linked to the computer science world.</p>		<p>Search</p> <p>Sort</p>
<p><u>What opportunities are there for wider study?</u></p> <p>Although this short unit is designed to give an overview of the text based programming language python there are ample opportunities to take this further. The structure of the unit, with challenges that far exceed the expectation of this short in-class unit, can be returned to at any point to add to your programming skill set. The basics are covered within the unit, but there is so much more to learn, saving and opening files from your PC via python as well as taking this into GCSE and beyond to A Level projects. Investigate controlling the physical computer system via python in the microbit unit and take it further to create your own AI neural network to make decisions.</p>		
<p><u>How will I be assessed?</u></p> <p>Throughout the lessons there are opportunities for in class assessments, with the main tasks. Independently there is also a set of challenges with time to complete these split between home study and in class sessions. Support and guidance for the programming syntax is given, as well as a 'cheat sheet' regarding the specific commands/structures that might be needed.</p>		




<p><u>What will we be learning?</u></p> <p>07 – Branding</p> 	<p><u>Why this? Why now?</u></p> <p>This unit links most closely with many others, including those yet to be studied, such as the Real Business Challenge in Year 9. This unit brings back information and knowledge from the Basic Skills, Computer Components and Spreadsheets units to create your own brand, around the area of interest in the YouTube Channel tasks interspaced within the unit.</p>	<p><u>Key Words:</u></p> <p>Logo Design Image Properties Cover Art Ident/intro Merchandise</p>
<p><u>What will we learn?</u></p> <p>This unit explores the use of images and video in establishing a brand. Students are asked to plan the resources needed for an YouTube chanel of their choice*, including the initial logo, chanel art, video intro/ident and merchandise that they may produce. This links key ideas between the Computer Components unit, how the images are actually presented, with more elements of business studies (brand guidelines) and the 'Creative iMedia' elements, of using Adobe products to create the images and video items associated with this brand.</p> <p>* - within school boundaries</p>		
<p><u>What opportunities are there for wider study?</u></p> <p>Links on to the Real Business Challenge in Year 9 as well as on to the IT and Business Studies GCSE options.</p> <p>Many students have a want to create this kind of content, so we often find that there are some students who already have their own channels. Please make sure that you are working within the rules of YouTube and that you are communicating with Parents around this too.</p>		
<p><u>How will I be assessed?</u></p> <p>Production of final products (logo / cover / video).</p> <p>Evaluation of process, including how suitable for the Target Audience and genre of subject.</p> <p>Modelled spreadsheet for merchandise.</p>		




<p><u>What will we be learning?</u></p> <p>08 – Micro:bit</p> 	<p><u>Why this? Why now?</u></p> <p>As well as the more traditional 'drag and drop' interface available to the students, there is the ability to create text-based code through the 'make code' interface. This unit, therefore, needed to be placed after the Python unit, which introduced key ideas related to text-based programming. Students are also able to develop their logical thinking from the Spreadsheet unit and their skills initially developed in the virtual pet unit.</p>	<p><u>Key Words:</u></p> <p>Algorithms Programming Language Syntax Variables IF / Selection Loop / Iteration</p>
<p><u>What will we learn?</u></p> <p>The physical elements of programmable technology are explored using a familiar drag and drop programming constructions (sequence, selection, iteration). Students are able to download their code onto the Micro:Bit device, and use the linked sensors to give input beyond the limited (two) buttons. Students are asked to investigate some elements linked to different project, with the same core theme (such as energy, initially). The jump between the digital world and the real world, with programmable technology, is also explored more in the Year 9 Technology rotation of Robotics.</p>		<p>Accessing Site / Interface Sensors (on device) Compass Gyroscope Accellerometer Mini Project</p>
<p><u>What opportunities are there for wider study?</u></p> <p>Year 9 Technology rotation of Robotics uses similar programmable technology to link the digital into the real world. Students can also engage with this through the STE(A)M clubs and activities, such as the First Lego League Challenge, run in Septembre to Feburary and subsequent (school based) robotics challenge club, using the same structure. Students also have the opportunity to borrow a set of microbit resources from the library, in order to develop their experiance outside of school.</p>		
<p><u>How will I be assessed?</u></p> <p>Project based approach to tasks, so project log and evaluation used as key assessment tool.</p> <p>Students are also given some senarios to investiage to identify why programs are not working correctly and have to identify the reason behind this (debugging).</p>		




<p><u>What will we be learning?</u></p> <p>09 - How the Internet Works</p> 	<p><u>Why this? Why now?</u></p> <p>Students needed an idea of how the data can be sent around the world, before finishing their KS3 journey. Part of the placement here is to ensure that students understand that the Digital Data (linking back to the year 7 computer components unit) they send is potentially open to others on networks. This security reminder also is really important, as many students have altered their technological habits since covering in year 7 esafety.</p>	<p><u>Key Words:</u></p> <p>Application layer Bandwidth Bluetooth Client Client-server Copper cable Domain name server (DNS) Ethernet Fibre optic FTP Graph HTML HTTP(S) IMAP Internet layer IP address LAN Latency Link layer Media access control (MAC) address Mesh topology Network Network interface card (NIC) Node Packet switching Peer-to-peer POP Protocols Router Server SMTP Star topology Switch TCP/IP model Terminator The internet Topology Transmission rate Transport layer URL WAN Web browser WiFi Wired transmission media Wireless transmission media</p>
<p><u>What will we learn?</u></p> <p>Investigate how the data you use everyday is sent across the network, or even the world. Students explore the ideas around network packets, switching and routing as well as how different networks (such as schools, business and at home) are setup and work. Relevance here is helped by sharing how the school's network is setup and managed by our in-house team. Students get the chance to look at this from the small scale to the international scale, with the support of world networking maps. Different types of networks need different types of connection and this is further investigated, with the real world link continuing throughout.</p>		
<p><u>What opportunities are there for wider study?</u></p> <p>Direct links to the future unit of Cybersecurity, as well as the GCSE Computer Science curriculum. Students have had the opportunity to sign up for the CyberFirst Competition and Development days, linking to the security elements highlighted here.</p> <p>There is a wealth of information available through the internet itself, including the videos published by 'Craig N Dave' a popular computer science YouTube channel - https://student.craigndave.org/videos</p>		
<p><u>How will I be assessed?</u></p> <p>Presentation of notes and activities throughout the work. Students are tasked with creating their own academic presentation, drawing upon their current learning and previous skills. This will be augmented with the retrieval practise style approach to allow students to recall all the different elements covered within the unit.</p>		



<p><u>What will we be learning?</u></p> <p>10 – Business Challenge</p> 	<p><u>Why this? Why now?</u></p> <p>We teach this unit now so students get an insight into some Business Studies content that would be in GCSE Business Studies. As Business is not a KS3 subject, this unit is left until Year 9. Students will be able to use the skills developed in other units such as their Basic IT skills and their Branding unit to help complete this work.</p>	<p><u>Key Words:</u></p> <p>Good and Services Factors of Production Sectors of Industry External Factors Mission Statements Aims and Objectives Primary Research Secondary Research Target Market USP Differentiation Price Skimming Price Penetration Cost Plus Pricing Psychological Pricing Competitive Pricing Sales Promotions Direct Selling Public Relations Sponsorship E-Commerce Revenues and Profits Corporate Responsibility</p>
<p><u>What will we learn?</u></p> <p>Purpose and Nature of Business Mission Statements and Company Profile Market Research and Customer Needs The Marketing Mix – 4 P’s Production Methods and Factors of Production Costs and Revenues Corporate Responsibility</p>		
<p><u>What opportunities are there for wider study?</u></p> <p>Direct links with the GCSE Business Studies, including some of the founding key words and themes to be revisited in the different modules within the GCSE: Business in the Real World, Influences on Business, Business Operations, Human Resources, Marketing, and Finance.</p>		
<p><u>How will I be assessed?</u></p> <p>Assessment through individual student presentation developed throughout the lessons of the unit.</p>		



<p><u>What will we be learning?</u></p> <p>11 – CyberSecurity</p> 	<p><u>Why this? Why now?</u></p> <p>Students are about to potentially finish their formal computing education (or continue into more detail) so it is important to develop the initial understanding of Esafety into the more developed modern language of cyber security.</p>	<p><u>Key Words:</u></p> <p>Malware Virus Worm Spyware Adware Social Engineering Shouldering Phishing Pharming Blagging Brute Force Attack Denial of Service (DOS) Distributed DOS (DDOS) Security Physical Locks</p>
<p><u>What will we learn?</u></p> <p>Students get a chance to explore how (in principle) the different types of malware and social engineering occur, to know how and what to protect against. This could be in their own technology or even in the world of work. Students explore the reason behind those who are attacking and understand the wider world a little more clearly.</p> <p>The link between the theoretical and the real world is demonstrated here, through examples such as anonymous and previous events, such as the Heartbleed and iloveyou virus.</p>		
<p><u>What opportunities are there for wider study?</u></p> <p>CyberDiscovery Development Day CyberDiscovery Competitions</p>		



<p><u>What will we be learning?</u></p> <p>12 – Digital Skills</p>	<p><u>Why this? Why now?</u></p> <p>Development of different skills and knowledge in this unit summaries all of the previous and used as a reminder before students possibly end their formal computing education. Students are always encouraged to recall their activities and, at the minimum, what is possible for the different systems available for them to use in their future.</p>	<p><u>Key Words:</u></p> <p>Budget Income Expenses / Expenditure Want Need Interest Rate APR Credit / Debit Finance Lease</p>
<p><u>What will we learn?</u></p> <p>Students use their existing skills, developed by the curriculum previously and use of technology in general, to solve a series of different challenges. These feature elements such as creating a household budget and (linked) working out how much you can save to go on holiday. These kinds of skills are really important for many and often some of the elements that schools leave out.</p>		
<p><u>What opportunities are there for wider study?</u></p> <p>Multiple in different routes forwards depending on option choice within the department (Business GCSE, Computer Science GCSE, IT - Creative iMedia)</p>		