COMPUTING

Year 7

What are the aims and intentions of this curriculum?

The aim of our Key Stage 3 Curriculum is to ensure students experience a broad and balanced experience in Computing, which prepares them effectively for the workplace and as active participants in the digital world. The curriculum offers a balanced approach which will equip students to use computational thinking, principles of information, how digital systems work and how to put this knowledge to use through programming, the creation of systems and a range of content. This curriculum also ensures that students can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems and ultimately are responsible, digitally literate, confident and creative users of information and communication technology.

The national curriculum for computing aims to ensure that all students can understand and apply the fundamental principles and concepts of computer science, including logic, algorithms and data representation. It also covers online safety, with progression in the content to reflect the different and escalating risks that young people face as they get older. This includes how to use technology safely, responsibly, respectfully and securely, how to keep personal information private, and where to go for help and support.

Term	Topics	Knowledge and key terms	Skills developed	Assessment
Autumn 1	**Theme: Organising Yourself** **TRHAT IT Communications**	In this unit students will learn the basics of The Rosedale Hewens IT system, how to safe stay safe online, using emails and completing tasks remotely. Clear messaging in digital media Combining the use of digital tools and online. - Microsoft IT Systems for College & Home - Hewens/TRHAT Password Access - Hewens/TRHAT expectations - Hewens/TRHAT support systems	Developing Skills to keep work organised on the computer by making good file and folder structures, online safety and using online communication tools correctly. - Understand a range of ways to use technology safely, respectfully, responsibly and securely, including protecting their online identity and privacy; recognise acceptable/unacceptable or inappropriate content, contact, conduct or behaviour and know how to report concerns.	Year 7 Baseline test Multiple –Choice Online Tests Read Vocabulary **Websites:** Office 365 https://unsplash.com/ https://www.canva.com/en_gb/ https://www.google.co.uk/intl/en-GB/drive/

	Online Safety	- Hewens CS/ICT different forms of assessment - Acceptable use policy - File types - Naming conventions - File management - Backup - Social networking - Cyberbullying - Privacy - Password - Identify theft - Phishing - Search engine cookies - Gambling - Sexting - Grooming - pornography - PIN - AI - Honesty - Integrity - Ways to use technology safely - Create, reuse, revise and repurpose digital artefacts - The benefits of strong passwords - The concept of the digital footprint - The positive and negative impact of social media - The relationship between the internet and social media	- The characteristics of positive and healthy friendships (in all contexts, including online) including: trust, respect, honesty, kindness, generosity, boundaries, privacy, consent and the management of conflict, reconciliation and ending relationships. This includes different (non-sexual) types of relationship. - Their rights, responsibilities and opportunities online, including that the same expectations of behaviour apply in all contexts, including online. - About online risks, including that any material someone provides to another has the potential to be shared online and the difficulty of removing potentially compromising material placed online. - That in school and in wider society they can expect to be treated with respect by others, and that in turn they should show due respect to others, including people in positions of authority and due tolerance of other people's beliefs. - About different types of bullying (including cyberbullying), the impact of bullying, responsibilities of bystanders to report bullying and how and where to get help. - That some types of behaviour within relationships are criminal, including violent behaviour and coercive control. How information and data is generated, collected, shared and used online. - The similarities and differences between the online world and the physical world, including: the impact of unhealthy or obsessive comparison with others online (including through setting unrealistic expectations for body image), how people may curate a specific image of their life online, over-reliance on online relationships including social media, the risks related to online gambling including the accumulation of debt, how advertising and	**Websites:** www.bbc.co.uk/bitesize/guides/z36nb9q/revision/2 www.nibusinessinfo.co.uk/content/benefits-computer-networks https://beinternetawesome.withgoogle.com/en_uk www.speedtest.net www.youtube.com/watch?v=Dxcc6ycZ73M www.submarinecablemap.com www.youtube.com/watch?v=ewrBalT_eBM lifehacks.io/facts-about-the-internet www.youtube.com/watch?v=ZTM9GA-4nBA seotribunal.com/blog/google-stats-and-facts https://www.bbc.co.uk/bitesize/topics/z67ncdm www.lifewire.com/most-common-tlds-internet-domain-extensions-817511 www.yougetsignal.com/tools/network-location/ **Knowledge Organiser** ICT Extra help booklet

		- A basic understanding of the relevant legislation	information is targeted at them and how to be a discerning consumer of information online. Network manager/IT Technician	
Autumn 2	**Hardware and software components that make up computer systems.** **Theme: Computer Networks** **From Semaphores to the internet**	In this unit students will imagine a world without computer networks whilst exploring where and how they have evolved and have changed the way we learn, work, play, and communicate - Integrity - Network - Hub - Server - Router - ISP - Protocol - URL - Mainframe - Wired - Wireless - Bandwidth - Bit, megabit, gigabit - Broadband - Buffering - Packet - IP address - Packet header - Packet payload - Transmission Control Protocol - Internet Protocol - VoIP - Security - Web server - HTTP & HTTPS.	Developing skills to explain the benefits of networking, the hardware required in a computer network. The functionality of components in a computer network. Describe how the internet works as a dominant form of computing network. The difference between the Internet and the World Wide Web. - Understand computer network including the internet how they can provide multiple services such as the www and the opportunities they offer for communication and collaboration. - Understand the hardware and software components that make up computer systems, and how they communicate with one another and with other systems - Understand the hardware and software components that make up computer systems, and how they communicate with one another and with other systems - 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 data and information - Their rights, responsibilities and opportunities online, including that the same expectations of behaviour apply in all contexts, including online. About online risks, including that any material someone provides to another has the potential to be shared online and the difficulty of removing potentially compromising material placed online.	Short 200 word research essay Read Vocabulary **Websites:** https://www.bbc.co.uk/bitesize/topics/zmpsgk7 **Knowledge Organiser** Computer Hardware Computer Networks

			- The legal rights and responsibilities regarding equality (particularly with reference to the protected characteristics as defined in the Equality Act 2010) and that everyone is unique and equal. - The similarities and differences between the online world and the physical world, including: the impact of unhealthy or obsessive comparison with others online (including through setting unrealistic expectations for body image), how people may curate a specific image of their life online, over-reliance on online relationships including social media, the risks related to online gambling including the accumulation of debt, how advertising and information is targeted at them and how to be a discerning consumer of information online. Data analyst Content creator	
Spring 1	**Practical Software knowledge and understanding** **Theme:** **Real world causes**	In this unit students develop their understanding of information technology and digital literacy. This unit is designed to build upon learners' experience in key stage 2. It requires learners to use a range of different skills across several pieces of software. They will create a blog post about a real-world cause that they would like to gain support for. Microsoft Office • Word • Excel • PowerPoint • Database	Developing skills to search for digital artefacts using complex search techniques and basic logical operators. Learn to select digital artefacts, assessing their value and using discretion in the selection of information. Know when to combine and refining artefacts using a range of ICT tools to produce and present products for a specific purpose. Evaluate the credibility of sources. Present professional documents and finally evaluate work against given success criteria. - 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,	Presentation of work about the chosen cause Read Vocabulary **Websites:** Office 365 https://unsplash.com/ https://www.canva.com/en_gb/ https://www.google.co.uk/intl/en-GB/drive/

		-Office 365 • Teams • SharePoint • One Drive	evaluating and presenting data and information. - That sharing and viewing indecent images of children (including those created by children) is a criminal offence which carries severe penalties including jail. - How information and data is generated, collected, shared and used online. - The legal rights and responsibilities regarding equality (particularly with reference to the protected characteristics as defined in the Equality Act 2010) and that everyone is unique and equal. - Their rights, responsibilities and opportunities online, including that the same expectations of behaviour apply in all contexts, including online. - About online risks, including that any material someone provides to another has the potential to be shared online and the difficulty of removing potentially compromising material placed online. - Not to provide material to others that they would not want shared further and not to share personal material which is sent to them. - What to do and where to get support to report material or manage issues online. - The impact of viewing harmful content. - That sharing and viewing indecent images of children (including those created by children) is a criminal offence which carries severe penalties including jail. - How information and data is generated, collected, shared and used online. - The similarities and differences between the online world and the physical world, including: the impact of unhealthy or obsessive comparison with others online (including through setting unrealistic expectations for body image), how people may curate a specific image of their life online, over-reliance on	

			online relationships including social media, the risks related to online gambling including the accumulation of debt, how advertising and information is targeted at them and how to be a discerning consumer of information online. Data analyst Content creator	
Spring 2	**Scratch 1** **Theme:** The history of electronic games	In this unit students will build confidence and knowledge of the key programming concepts, these are sequencing, variables, selection, and count-controlled iteration. - Subroutine - Selection - Count-controlled iteration - Operators - Variables - Debugging - Logical operators - Boolean operators - Sequence - Input - Process - Output	Understand how data can be represented and manipulated digitally. Know how to compare the utility of alternative algorithms. Develop modular programming including appropriate use of data structures and key programming constructs. Know the purpose of variables. Tracing the value of a variables in an algorithm. - Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions - Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts - Design, use and evaluate computational abstractions that model the state and behaviour of real-world problems and physical systems Programmer Software Engineer	Multiple –Choice Online Tests Read Vocabulary **Websites:** scratch.mit.edu en.wikipedia.org/wiki/Five_Little_Ducks en.wikipedia.org/wiki/Software_bug https://www.bbc.co.uk/bitesize/topics/zhy39j6 **Knowledge Organiser** Scratch 1 Scratch 2
Summer 1	**Spreadsheets** **Theme:** **The UK and World Weather**	In this unit students will be engaging in activities using Microsoft Excel where they will progress from using basic formulas to writing their own COUNTIF statements to write and present a weather forecast.	Understand the concept of spreadsheets and why spreadsheets are useful. Learn how to navigate a spreadsheet via its rows and columns, and become familiar with the cell referencing system. Locate and select ranges of cells and change cells' background colour and border properties.	A practical assessment where students design their own version of making a weather dashboard. Read Vocabulary

		All students to understand how data and information are used and calculated linking into job prospects of being able to track accounts and money through use of data modelling spreadsheets. - Output - Tables - Charts - Searching - Sorting - Database	- Design, use, and evaluate computational abstractions that model the state and behaviour of real-world problems and physical systems - Undertake creative projects that involve 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 Programmer Software Engineer Meterologist	**Websites:** http://icted.me.uk/category/year-7-spreadsheets/ https://www.metoffice.gov.uk/ https://www.bbc.co.uk/weather https://news.sky.com/weather **Knowledge Organiser** Spreadsheets An example of a quiz