

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 e-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	E-Safety	Students will 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. Cyberbullying Gambling Sexting Online Grooming Pornography PIN AI Honest integrity Video chat and webcams Downloading Social Networking Location Services Understand the hardware and software components that make up computer	Students understand a range of ways to use technology safely, respectfully, responsibly and securely, including protecting their online identity and privacy. They recognise acceptable/unacceptable or inappropriate content, contact, conduct or behaviour and know how to report concerns. Students identify the following dangers associated with Internet use: E-Safety Cyberbullying Gambling Sexting Online Grooming Pornography PIN AI Honest integrity Video chat and webcams Downloading Social Networking Location Services	E-Safety Posters

Hardware, Software and Computer Systems.

systems, and how they communicate with one another and with other systems.

- Microsoft Office including, Word, Excel, PowerPoint and Databases (Office 365).
- Using Teams, SharePoint and One Drive

Hardware
Software
Network
File Server
Cloud storage
Internet
Operating Systems
Utility Software
Application Software
Data Storage
Communication Types

Students will 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.

How to use the more advanced features of power point and word to present information for a specific purpose and audience. Students learn how to use Teams, the Share Point and One Drive.

Students understand computer networks including the internet how they can provide multiple services such as the www and the opportunities they offer for communication and collaboration. Students understand the hardware and software components that make up computer systems, and how they communicate with one another and with other systems. Students can classify a range of software including operating systems, utility and application software. They can explain the difference between hardware and software, and their roles within a computer system. Students can give examples of how data is stored on a computer and explain the function of the main internal parts of basic computer architecture. Students can outline the concepts behind the input-process-output cycle and recognise that a range of digital devices can be considered a computer. Students can use a range of input and output devices and recognise that all software executed on digital devices is programmed.

PSHE Links - 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.

Students know their rights, responsibilities and opportunities online, including that the same expectations of behaviour apply in all contexts, including online.

They are aware of 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.

Students know that in school and in wider society they can expect to be treated with respect by others, and that in turn they

Power Point presentation presented to the class on E-Safety.

Students will use appropriate software to illustrate the hardware and software components that make up computer systems, and how they communicate with one another and with other systems.

			should show due respect to others, including people in positions of authority and due tolerance of other people's beliefs. Students are able to identify the different types of bullying (including cyberbullying), the impact of bullying, responsibilities of bystanders to report bullying and how and where to get help. They are aware that some types of behaviour within relationships are criminal, including violent behaviour and coercive control. Students have good knowledge and understanding of how information and data is generated, collected, shared and used online. Students know 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). Students have knowledge of how people may curate a specific image of their life online and how there can be an over-reliance on online relationships including social media and the risks related to online gambling including the accumulation of debt. Students can explain how advertising and information is targeted at particular demographics and how to be a discerning consumer of information online. Students aid knowledge of Transition and safety. Transition to secondary school and personal safety in and outside school, including first aid In addition also aids knowledge of Developing skills and aspirations. Careers, teamwork and enterprise skills, and raising aspirations. Also aids knowledge of Diversity. Diversity, prejudice, and bullying. British values: Mutual Respect and Tolerance Students recognise they have the power to influence so should consider how their behaviour, actions and words can affect others. Careers Links - Network manager/IT Technician	
Autumn 2	Hardware, Software and Computer Systems.	Understand the hardware and software components that make up computer systems, and how they communicate	Students understand the hardware and software components that make up computer systems, and how they communicate with one another and with other systems.	Test on Online Safety and Computer Systems.

		with one another and with other systems continued. Hardware Software Network File Server Cloud storage Internet Monitor Keyboard Mouse Computer Case Printer Graphics card Power supply unit Motherboard CPU RAM Storage (HDD, DVD-ROM, Cloud etc.) Students will 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.	Students can 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. Students can identify the functions of the main components which make up the computer system. Students are aware of their rights, responsibilities and opportunities online, including that the same expectations of behaviour apply in all contexts, including online. The have good knowledge and understanding of 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. Students know their 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. Students can identify 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. Aids students' knowledge of Developing skills and aspirations. Careers, teamwork and enterprise skills, and raising aspirations. British values. Individual Liberty People are responsible for advances in science and technology. Students recognise that it is important that risks are managed and the consequences considered carefully so that these advance our society.	Test on producing and developing and a Spreadsheet.
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		- Microsoft Office including, Word, Excel, PowerPoint and Databases (Office 365). - Using Teams, SharePoint and One Drive. Excel Spreadsheet Modelling Data Information Cells Cell Addresses Columns	Careers Links - Data analyst, Content creator. Introduction to Spreadsheet/Modelling and Excel. Students understand what a computer spreadsheet is why they are used. Students can create simple spreadsheets. Students are able to use simple and advanced formulae to create accurate and effective spreadsheets. Students understand the term “Modelling” and can produce working spreadsheet models and explain their conclusions result from the model. Students can undertake the following using a spreadsheet, identify spreadsheet components, can use spreadsheet to model information, can use formulae in spreadsheets, can use data validation and verification effectively. Specific Skills taught: Importing data. Exploring the manipulation of data using simple formulas Making us of operators (+,-,*,/) and parenthesis Cell formatting Cell references (relative, absolute) Use built in functions SUM, MIN, MAX, AVERAGE, COUNT, IF, COUNTIF, LOOKUP, VLOOKUP, HLOOKUP, AND, OR, DATE, TODAY, SUMIF, SUBTOTAL. Use relational operators including =, <, >, <=, >=, <> Sorting Filters PSHE Links - Aids students’ knowledge of Developing skills and aspirations. Careers, teamwork and enterprise skills, and raising aspirations. British Values: Democracy Students recognise that they can use their voices to share their thoughts and impact the future	
Spring 1		Rows Formulae Functions Filters	Introduction to Spreadsheet/Modelling and Excel. Students understand what a computer spreadsheet is why they are used. Students can create simple spreadsheets. Students are able to use simple and advanced formulae to create accurate and	Test on producing and developing and a Spreadsheet.

	Sorts	effective spreadsheets. Students understand the term “Modelling” and can produce working spreadsheet models and explain their conclusions result from the model. Students can undertake the following using a spreadsheet, identify spreadsheet components, can use spreadsheet to model information and can use formulae in spreadsheets. Specific Skills taught: Importing data. Exploring the manipulation of data using simple formulas Making us of operators (+, -, *, /) and parenthesis Cell formatting Cell references (relative, absolute) Use built in functions SUM, MIN, MAX, AVERAGE, COUNT, IF, COUNTIF, LOOKUP, VLOOKUP, HLOOKUP, AND, OR, DATE, TODAY, SUMIF, SUBTOTAL. Use relational operators including =, <, >, <=, >=, <> Sorting Filters PSHE Links - 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. Students understand their rights, responsibilities and opportunities online, including that the same expectations of behaviour apply in all contexts, including online. Students can demonstrate a good understanding of 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. Students are aware that they are not provide material to others that they would not want shared further and not to share personal material which is sent to them.	
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			Students know what to do and where to get support to report material or manage issues online. Students are aware of the impact of viewing harmful content. Aids students' knowledge of Developing skills and aspirations. Careers, teamwork and enterprise skills, and raising aspirations. British values. Individual Liberty People are responsible for advances in science and technology. Students recognise that it is important that risks are managed and the consequences considered carefully so that these advance our society. Careers Links - Data analyst, Content creator.	
Spring 2	Data analysis, manipulation and modelling using Spreadsheets continued.	Students will 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 continued. - Microsoft Office including, Word, Excel, PowerPoint and Databases (Office 365). - Using Teams, SharePoint and One Drive Excel Spreadsheet Modelling Data Information Cells Cell Addresses Columns Rows Formulae Functions Filters	Introduction to Spreadsheet/Modelling and Excel. Students understand what a computer spreadsheet is why they are used. Students can create simple spreadsheets. Students are able to use simple and advanced formulae to create accurate and effective spreadsheets. Students understand the term "Modelling" and can produce working spreadsheet models and explain their conclusions result from the model. Students can undertake the following using a spreadsheet, identify spreadsheet components, can use spreadsheet to model information, can use formulae in spreadsheets, can use data validation and verification effectively. Specific Skills taught: Importing data. Exploring the manipulation of data using simple formulas Making us of operators (+,-,*,/) and parenthesis Cell formatting Cell references (relative, absolute) Use built in functions SUM, MIN, MAX, AVERAGE, COUNT, IF, COUNTIF, LOOKUP, VLOOKUP, HLOOKUP, AND, OR, DATE, TODAY, SUMIF, SUBTOTAL. Use relational operators including =, <, >, <=, >=, <> Sorting Filters	Test on producing and developing and a Spreadsheet.

		Sorts	PSHE Links - 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. Students understand their rights, responsibilities and opportunities online, including that the same expectations of behaviour apply in all contexts, including online. Students can demonstrate a good understanding of 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. Students are aware that they are not provide material to others that they would not want shared further and not to share personal material which is sent to them. Students know what to do and where to get support to report material or manage issues online. Students are aware of the impact of viewing harmful content. Aids students' knowledge of Developing skills and aspirations. Careers, teamwork and enterprise skills, and raising aspirations. British values. Individual Liberty People are responsible for advances in science and technology. Students recognise that it is important that risks are managed and the consequences considered carefully so that these advance our society. Careers Links - Data Manager, Accountants, Banking, Statistician, Market Makers (Stock Brokers).	
Summer 1	Scratch Programming	Scratch – Using Scratch, a visual programming language that allows students to create their own interactive stories, games and animations. As students design Scratch projects, they	Students can understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions. Students are able to design, write and debug programs that accomplish specific goals, including controlling or simulating	Scratch Project – Maze/Vacuum Cleaner/Mower Task

	learn to think creatively, reason systematically, and work collaboratively. Students will design, use and evaluate computational abstractions that model the state and behaviour of real-world problems and physical systems. Students will understand several key algorithms that reflect computational thinking [for example, ones for sorting and searching]; use logical reasoning to compare the utility of alternative algorithms for the same problem. Students will 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.	physical systems; solve problems by decomposing them into smaller parts. Students are able to design, use and evaluate computational abstractions that model the state and behaviour of real-world problems and physical systems. PSHE Links – Students know that their rights, responsibilities and opportunities online apply the same expectations of behaviour applied in all contexts. Students have a good understanding of 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. Students are aware of the 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. Aids students' knowledge of Developing skills and aspirations. Careers, teamwork and enterprise skills, and raising aspirations. British values. Mutual Respect and Tolerance Students recognise they have the power to influence so should consider how their behaviour, actions and words can affect others. Programmer, Software Engineer.	
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