Year 7

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
	Computational Thinking	**Bebras Challenge & Scratch**	**Word Processing**	**Clear messaging in social media**	**Networks & The internet**	**Hardware and assessments**
Developing	**e-safety** **To be able to:** • Identify risks of using the internet and ways to stay safe. • Identify the different ways to get help if things go wrong online **Computational thinking** **To be able to:** • Describe what some of the computational thinking skills are i.e. algorithms, decomposition, abstraction and pattern recognition • Solve some puzzles demonstrating the use of Computational thinking skills	**Computational thinking** **To be able to:** • Complete Computational puzzles as part of the Bebras challenge **Scratch** **To be able to:** • Use costumes to change the appearance of a sprite • Use movement blocks to move a sprite across a stage • Design a stage for a animation/game	**To be able to:** • Use basic skills to create a word document with text and images • Apply some formatting to a document • Identify some of the different licences that might apply to an image	**To be able to:** • Use a search engine to find some information for an issue • Identify some features of a good poster • Copy and paste some images into a poster • Create a poster containing some text and images • Make some changes to a logo • Add some text and images to slides in a presentation	**Networks** **To be able to:** • Describe how and why computers are connected to a network e.g in school and at home • Identify the type of network used in our school and at home, • Label some components of a LAN • Identify the difference between wired and wireless networks • Describe how the internet is a world wide network • List some internet services • State the difference between the world wide web and the internet	**Hardware** • Label different components inside a computer and being to explain what some of them do • Distinguish between input and output devices • Identify the main storage devices found in computers (and other devices)
Core	**e-safety** **To be able to:** • Identify risks of using the internet and ways to stay safe. • Identify the different ways to get help if things go wrong online **Computational thinking** **To be able to:** • Describe what an algorithm is giving examples • Describe what decomposition is and give examples of its use • Describe what abstraction it's and give examples of its use • Describe what pattern recognition is and give examples of its use • Solve some puzzles demonstrating the use of Computational thinking skills	**Computational thinking** **To be able to:** • Complete Computational puzzles as part of the Bebras challenge **Scratch** **To be able to:** • Create and use variables in your code • Demonstrate the use of selection to move a sprite across a stage • Demonstrate the use of one type of loop in your code	**To be able to:** • Create word documents with text, images and tables. • Demonstrate the use of a range of different formatting techniques, choose appropriate formatting for different audiences • Describe the differences between licences that may apply to an image and how to comply with their terms	**To be able to:** • Choose search terms to find appropriate information for an issue • Identify a range of features of a good poster • Copy and paste appropriate images into a poster • Create a poster with appropriate text and images for the message and using appropriate formatting • Make appropriate changes to a logo • Add appropriate text and images to your slides	**Networks** **To be able to:** • Describe what a protocol is • Describe what a network is • Identify the benefits of using networks • Describe some components of a LAN • State the benefits and drawbacks of using wired and wireless networks • Identify different factors that effect the performance of a network • Describe how data is transferred over the internet • List a range of different internet services • Describe what the internet of things is • Identfy how the internet connected devices can effect you • Describe how webpages are stored and accessed on a device	**Hardware** • Describe the purpose of the main components inside a computer • Describe the purpose of some input and output devices • Describe the features of different storage devices

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	Computational Thinking	**Bebras Challenge & Scratch**	**Word Processing**	**Clear messaging in social media**	**Networks & The internet**	**Hardware and assessments**
Advanced	**e-safety** **To be able to:** • Identify risks of using the internet and ways to stay safe. • Identify the different ways to get help if things go wrong online **Computational thinking** **To be able to:** • Identify computational thinking skills used when solving problems and be able to describe how these skills may be used in other subjects and outside of school • Solve a range of puzzles demonstrating the use of Computational thinking skills	**Computational thinking** **To be able to:** • Complete Computational puzzles as part of the Bebras challenge **To be able to** • Explain why variables are used in code • Demonstrate the use of 2 different types of loop in your code and explain the difference	**To be able to:** • Create word documents with text, images and tables. • Demonstrate the use of a wide range of different formatting techniques	**To be able to:** • Refine a Google search to improve results • Evaluate the features of different posters • Demonstrate good poster design e.g. consistent font, use of white space • Demonstrate use of the slide master to add consistent formatting and layout for your slides • Format slides demonstrating the use of complementary colours	**Networks** **To be able to:** • Describe how some protocols used on the internet e.g. http work • Describe what a network is the benefits of using networks • Label some components of a LAN • Describe the benefits and drawbacks of using wired and wireless networks • Describe the factors that can effect the performance of wired and wireless networks • Describe how data is transferred over the internet by packet switching • Describe how internet-enabled devices can effect you • Describe how http and https are used when downloading content off the internet	**Hardware** • Select a computer for a particular purpose based on the components • Describe how the CPU performs the fetch execute cycle • Describe what clock speed and cache memory are • Select an appropriate storage device for a given purpose • Select storage devices for a particular purpose

Year 8

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Year 8	Data representation	Images and sound	Sound & Software recap	Small basic		End of year tests & Mobile app development
Developing	**Bubble sorts** **To be able to:** • Complete a pass of a bubble sort. **Logic gates** **To be able to:** • Label AND, OR and NOT logic gates. **Number systems** **To be able to:** • Convert binary to denary numbers • Convert denary to binary numbers • Add binary numbers	**To be able to:** • State that images are stored as pixels • Understand how the resolution of an image effects its quality • Change the order of some layers in an image • Demonstrate 2 basic tools select, scale, text, filters, brush, rubber stamp	**Sound** **To be able to:** • Describe how sound is stored as binary **Word** **To be able to:** • Use basic skills to create a word document with text and images **PowerPoint** **To be able to:** • Create presentations containing text and images	**To be able to:** Create and execute code in Small Basic including: • Outputting strings • Demonstrating the use of variables and output stored values • Use inputs to store values		**To be able to:** • Create an App that is partially functional and meets some of the success criteria. • Successfully use an event handler to perform an action triggered by the user.

Core	**Bubble sorts**
	To be able to:
	• Complete a a bubble sort on numbers
	
	Logic gates
	To be able to:
	• Identify inputs and outputs for AND, OR and NOT logic gates and simple logic circuits
	
	Number systems
	To be able to
	• Convert denary to binary numbers
	• Add binary numbers
		To be able to:
		• Describe how images are stored as binary
		• Describe the term image resolution
		• Describe the effect of changing the resolution of an image
		• Use layers appropriately in an image
		• Demonstrate the use of 4 basic tools select, scale, text, brush, rubber stamp,.
			Sound
			To be able to:
			• Describe how sampling is used to capture sound
			• Describe the effect of changing the sampling frequency on the size and quality of a file
			
			Word
			To be able to:
			• Create word documents with text, images and tables.
			• Demonstrate the use of a range of different formatting techniques
			
			PowerPoint
			To be able to:
			• Demonstrate use of master slides
			• Insert a range of different media into slides including videos
				To be able to:
				Create and execute code in Small basic including:
				• Choose appropriate datatypes for variables
				• Cast the datatype of a variable within your code
				• Demonstrate a range of mathematical and logical operators
				• Demonstrate the use of IF statements (selection) in your code
				• Demonstrate the use of a simple loop (iteration) in your code
						To be able to:
						• Create an App that is mostly functional and meets most of the success criteria.
						• Has successfully implemented:
						   ○ Event handling
						   ○ Variables
						   ○ Selection

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Year 8	**Data representation**	**Images and sound**	**Sound & Software recap**	**Small basic**		**End of year tests & Mobile app development**

Advanced	**Bubble sorts**
	To be able to
	Complete a bubble sort on words
	
	Logic gates
	To be able to:
	Identify inputs and outputs for circuits that contain multiple AND, OR and NOT logic gates.
	
	Number systems
	To be able to
	Convert denary to hexadecimal numbers
	Describe what an overflow error is
		To be able to:
		• Describe what the colour depth of an image is and describe the effect of changing the colour depth on an image
		• Demonstrate the use of at least 1 advanced tool from magic wand, lasso, pen and attaching text
		• Create an image for both print and website and describe how you did it
		• Describe the difference between jpeg and png formats for an image
			Sound
			To be able to:
			• Describe the effect of changing the bit depth on the size and quality of a file
			
			Word
			To be able to:
			• Demonstrate the use of advanced features of word including the use of columns and section breaks
			
			PowerPoint
			To be able to:
			• Insert a range of different media into slides including videos
			• Use advanced settings e.g. setting videos to autoplay, changing the order of animations
				To be able to:
				Create and execute code in Small Basic including:
				• Demonstrate the use of different types of loops in your code
				• Demonstrate the use of lists in your code
						To be able to:
						• Create an App that is fully functional and meets all of the success criteria.
						• Has successfully implemented and extended the project to include:
						  o Event handling
						  o Variables
						  o Selection
						  o Iteration

Year 9

		Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
		Networks and the internet	**Cybersecurity and Bebras**	**Search algorithms and Python**		**Spreadsheets**	**, Revision, End of year exams. Word and PowerPoint skills**
Developing		**Networks** **To be able to:** • Identify the type of network used in our school and at home, • Identify some reasons why a network is used in a school and at home • Label some components of a LAN **The Internet** **To be able to:** • Describe why the internet is a Wide Area Network • Describe how URL's are used to access websites • Use a search engine to research a topic	**Bebras** **To be able to:** • Complete Computational puzzles as part of the Bebras challenge • Identify types of data collected online • Identify some ways that a business might use your data • Identify laws that are designed to protect your personal data • Identify some social engineering methods that might put your personal data at risk • Describe the term hacking • Describe what a DDoS and a brute force attack is • Identify laws that are designed to prevent computer systems being attacked • Identify some malware threats • Identify some ways that malware can cause problems for a computer system • Identify some ways that an organisation might be effected by common security threats • Identify some ways that a network can be protected from common security threats	**Searching algorithms** **To be able to:** • Perform a binary search on a short sequence of numbers **Python** **To be able to:** Create and execute code in python including: • Outputting strings • Demonstrating the use of variables and output stored values • Use inputs to store values		**To be able to:** • Identify how a spreadsheet can be used • Perform calculations using simple formals • Insert functions using the function builder in Excel • Create simple graphs (charts) • Apply basic formatting to a spreadsheet	**Word** **To be able to:** • Use basic skills to create a word document with text and images **PowerPoint** **To be able to:** • Create presentations containing text and images
Core		**Networks** **To be able to:** • Describe the benefits of Local Area Networks • State the purpose of some components in a LAN • Identify a range of factors that effect the performance of a network connection **The Internet** **To be able to:** • Describe why DNS is needed to make websites work • Describe how a search engine works	**To be able to:** • Complete Computational puzzles as part of the Bebras challenge to Merit Level • State the difference between information and data • Identify what happens to data entered online • Describe some reasons why businesses collect data • Describe what a privacy policy is • Describe some consequences of data theft • Describe how the data protection act applies to a business • Describe how some social engineering methods that might put your personal data at risk and identify some ways to reduce your risk • Identify reasons why someone might hack into a computer system • Describe how a DDoS attack can impact user of online services • Identify some strategies to reduce the chance of a brute force attack being successful • Explain the need for the Computer Misuse Act • Describe some malware threats • Describe how malware can cause problems for a computer system • Identify how malicious bots can have an impact on societal issues • Describe how an organisation might be effected by common security threats • Describe some methods of protecting data on a network can be protected from common security threats	**Searching algorithms** **To be able to:** • Perform a binary search on a sequence of numbers and identify the pre requisites for a binary search Create and execute code in python including: • Choose appropriate datatypes for variables • Cast the datatype of a variable within your code • Demonstrate a range of mathematical and logical operators • Demonstrate the use of IF statements (selection) in your code • Demonstrate the use of a simple loop (iteration) in your code		**To be able to:** • Use autofill to copy formulas • Insert functions (SUM, AVERAGE, COUNT) into a spreadsheet without the use of a function builder • Label graphs and make basic formatting adjustments • Apply a range of different formats to a spreadsheet including those for numbers	**Word** **To be able to:** • Create word documents with text, images and tables. • Demonstrate the use of a range of different formatting techniques **PowerPoint** **To be able to:** • Demonstrate use of master slides • Insert a range of different media into slides including videos

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	Networks and the internet	**Cybersecurity and Bebras**	**Search algorithms and Python**		**Spreadsheets**	**, Revision, End of year exams. Word and PowerPoint skills**
Advanced	**Networks** **To be able to:** • State the difference between IP and MAC addresses • Explain how different factors including bandwidth and latency effect the performance of a network **The Internet** **To be able to:** • Explain the link between Webservers, DNS and IP addresses • Demonstrate advanced search techniques to refine results when using a search engine	**To be able to:** • Complete Computational puzzles as part of the Bebras challenge to Distinction Level • Describe a range of ways that businesses might use your data • Describe your rights under the data protection act • Describe how a range of social engineering methods might put your personal data at risk and describe how you can minimise your risk • Describe a range of strategies that reduce the chance of a brute force and DDoS attack being successful • Describe a range of malware threats • Describe how to protect computer systems from Malware threats • Explain how malicious bits can have an impact on societal issues • Compare security threats against probability and the potential impact to organisations • Explain how networks can be protected from common security threats	Create and execute code in python including: • Demonstrate the use of different types of loops in your code • Demonstrate the use of lists in your code		**To be able to:** • Demonstrate the use of relative and absolute cell referencing • Demonstrate the use of vlookup, count and countif functions	**Word** **To be able to:** • Demonstrate the use of advanced features of word including widow and orphan control, section breaks **PowerPoint** **To be able to:** • Insert a range of different media into slides including videos • Use advanced settings e.g. setting videos to autoplay, changing the order of animations