Computing Year 5/6		
Term 1.1 Computing systems and networks: Bletchley Park		
Vocabulary	Knowledge	Outcomes
• Acrostic Code • Brute force hacking • Caesar cipher • Chip and pin system • Cipher • Code • Combination • Contribute • Convince • Date shift cipher • Discovery • Hero • Invention • Nth Letter Cipher • Password • Pig Latin • Pigpen cipher • Present • Scrambled • Secret • Secure • Technological advancement • Trial and error	• To understand the importance of having a secure password and what "brute force hacking" is. • To know that the first computers were created at Bletchley Park to crack the Enigma code to help the war effort in World War 2. • To know about some of the historical figures that contributed to technological advances in computing. • To understand what techniques are required to create a presentation using appropriate software	• Explain that codes can be used for a number of different reasons and decode messages. • Explain how to ensure a password is secure and how this works. • Create a simple website with information about Bletchley Park including the need to build electronic thinking machines to solve cipher codes. • Explain the importance of historical figures and their contribution towards computer science. • Present information about their historical figure in an interesting and engaging manner.
Term 1.2		

Skills showcase: Inventing a product		
Vocabulary	Knowledge	Outcomes
• Adapt • Advert • Algorithm • Bugs • Coding • Debugging • Design • Edit • Electronic • Evaluate • Facts • Image rights • Images • Influence • Information • Inputs • Loops • Manipulation • Opinions • Output • Photos • Product • Program • Repetition • Screenshot • Search engine • Selection	• To know what designing an electronic product involves. • To know which programming software/language is best to achieve a purpose. • To know the building blocks of computational thinking e.g. sequence, selection, repetition, variables and inputs and outputs	• Evaluate code, understanding what it does and adapt existing to code for a specific purpose. • Debug programs and make them more efficient using sequence, selection, repetition or variables. • Design appropriate housing for their product using CAD software, including any input or output devices needed to make it work. • Create an appealing website for their product, aimed at their target audience which explains what their product is and what it does, using persuasive language. • Create an edited video of their project, articulating the key benefits. • Describe and show how to search for information online and be aware of the accuracy of the results presented.

• Sequence • Snippets • Software • Structures • Variables • Video • Website		
Term 2.1 Creating media: History of computers		
Vocabulary	Knowledge	Outcomes

• Background noise • Byte • Computer • Devices • File • FX • Gigabyte • Graphics • Hard drive • Hardware • Kilobytes • Megabyte • Memory storage • Mouse • Operating system • Overlay • Play • Processor • Radio play • RAM • Raspberry Pi • Record • Reverb • ROM • Script • Smartphone • Sound • Sound effects • Terrabytes	• To know that radio plays are plays where the audience can only hear the action so sound effects are important. • To know that sound clips can be recorded using sound recording software. • To know that sound clips can be edited and trimmed.	• Explain how to record sounds and add in sound effects over the top. • Produce a simple radio play with some special effects and simple edits which demonstrate an understanding of how to use the software. • Create a document that includes correct date information and facts about the computers and how they made a difference. • Demonstrate a clear understanding of their device and how it affected modern computers, including well-researched information with an understanding of the reliability of their sources. • Describe all of the features that we'd expect a computer to have including RAM, ROM, hard drive and processor, but of a higher specification than currently available.

• Touch screen • Track • Trackpad • Trailer		
Term 2.2 Programming: Intro to Python		
Vocabulary	Knowledge	Outcomes

• Algorithm • Code • Command • Design • Import • Indentation • Input • Instructions • Loop • Output • Patterns • Random • Remix • Repeat • Shape	• Iterate ideas, testing and changing throughout the lesson and explain what their program does. • Use nested loops in their designs, explaining why they need two repeats. • Alter the house drawing using Python commands; use comments to show a level of understanding around what their code does. • Use loops in Python and explain what the parts of a loop do. • Recognise that computers can choose random numbers; decompose the program into an algorithm and modify a program to personalise it.	• Iterate ideas, testing and changing throughout the lesson and explain what their program does. • Use nested loops in their designs, explaining why they need two repeats. • Alter the house drawing using Python commands; use comments to show a level of understanding around what their code does. • Use loops in Python and explain what the parts of a loop do. • Recognise that computers can choose random numbers; decompose the program into an algorithm and modify a program to personalise it.
Term 3.1 Data handling 1: Big Data 1		
Vocabulary	Knowledge	Outcomes

• Algorithms • Barcode • Binary • Boolean • Brand • Chips • Commuter • Contactless • Data • Encrypted • Infrared • MagicBand • Privacy • Proximity • QR code • QR scanner • Radio waves • RFID • Signal • Systems/data analyst • Transmission • Wireless	• To know that data contained within barcodes and QR codes can be used by computers. • To know that infrared waves are a way of transmitting data. • To know that Radio Frequency Identification (RFID) is a more private way of transmitting data. • To know that data is often encrypted so that even if it is stolen it is not useful to the thief.	• Understand why barcodes and QR codes were created. • Create (and scan) their own QR code using a QR code generator website. • Explain how infrared can be used to transmit a Boolean type signal. • Explain how RFID works, recall a use of RFID chips, and type formulas into spreadsheets. • Take real-time data and enter it effectively into a spreadsheet. • Presenting the data collected as an answer to a question. • Recognising the value of analysing real-time data. • Analyse and evaluate transport data and consider how this provides a useful service to commuter
Term 3.2 Data handling 2: Big Data 2		
Vocabulary	Knowledge	Outcomes
• Big Data • Bluetooth • Corrupted	• To know that data can become corrupted within a network but this is	• Recognise that data can become corrupted within a network and that data sent in packets is more robust,

• Data • Energy • GPS • Improve • Infrared • Internet of Things • Personal • Privacy • QR codes • Revolution • RFID • SIM • Simulation • Smart city • Smart school • Stop motion • Threat • WiFi • Wireless	less likely to happen if it is sent in 'packets'. • To know that devices or that are not updated are most vulnerable to hackers. • To know the difference between mobile data and WiFi.	as well as identify the need to update devices and software. • Recognise differences between mobile data and WiFi and use a spreadsheet to compare and identify high-use data activities and low-use data activities. • Make links between the Internet of Things and Big Data and give a basic example of how data analysis/analytics can lead to improvement in town planning. • Explain ways that Big Data or IoT principles could be used to solve a problem or improve efficiency within the school and prepare a presentation about their idea, considering the privacy of some data. • Present their ideas about how Big Data/IoT can improve the school and provide feedback to others on their presentations.

ONELINE SAFETY TO BE TAUGHT THROUGHOUT THE YEAR		
Vocabulary	Knowledge	Outcomes
• Anonymity • Antivirus • Biometrics • Block and report • Consent • Copy • Digital footprint • Digital personality	• To know that a digital footprint means the information that exists on the internet as a result of a person's online activity. • To know what steps are required to capture bullying content as evidence.	• Discuss a range of issues online that can leave pupils feeling sad, frightened, worried or uncomfortable and can describe numerous ways to get help. • Explain how sharing online can have both positive and negative impacts.

• Financial information • Hacking • Inappropriate • Malware • Online bullying • Online reputation • Password • Paste • Personal information • Personality • Phishing • Privacy settings • Private • Reliable source • Report • Reputation • Respect • Scammers • Screengrab • Secure • Settings • Software updates • Two factor authenication • URL • Username	• To understand that it is important to manage personal passwords effectively. • To understand what it means to have a positive online reputation. • To know some common online scam	• Be aware of how to seek consent from others before sharing material online and can describe how content can still be shared online even if it is set to private. • Explain what a 'digital reputation' is and what it can consist of. • Understand the importance of capturing evidence of online bullying and can demonstrate some of these methods on the devices used at school. • Describe ways to manage passwords and strategies to add extra security such as two-factor authentication. • Explain what to do if passwords are shared, lost, or stolen. • Describe strategies to identify scams. • Explain ways to increase their privacy settings and understand why it is important to keep their software updated.