Brenzett CE Primary School

Computing Medium Term Plans

We follow a two-year rotating cycle at Brenzett CE Primary School in our mixed-age classes.
This allows for full National Curriculum coverage.

Cycle One				
	EYFS	**Years 1 and 2**	**Years 3 and 4**	**Years 5 and 6**
Term 1		**Computing systems and networks – What is a computer?**	**Programming – Programming Scratch (Yr3)**	**Data handling – Mars Rover (Yr 5)**
	To know I can play with technological toys with knobs or pulleys and real objects such as touchscreen devices, by pressing parts and lifting flaps to achieve effects such as sound, movements or new images.	To know the difference betweena desktop and laptop computer. To know that people control technology. To know some input devices that give a computer aninstruction about what to do (output). To know that computers oftenwork together. To know that the internet is many devices connected to one another.	To know that Scratch is a programming language and some of its basic functions. To understand how to use loops to improve programming. To understand how decomposition is used in programming. To understand that you can remix and adapt existing code. To know that not everything on the internet is true: people share facts, beliefs and opinions online.	To know that Mars Rover is a motor vehicle that collects data from space by taking photos and examining samples of rock. To know what numbers using binary code look like and be able to identify how messages can be sent in this format. To understand that RAM is Random Access Memory and acts as the computer's working memory. To know that simple operations can be used to calculate but patterns. To know different ways we can communicate online.
Term 2		**Computing systems and networks – Algorithms unplugged**	**Computing systems and networks – Journey inside a computer (Yr3)**	**Programming – Music (Y5)**
	To know how to interact with age appropriate computer software, e.g. play a simple game.	To understand that an algorithm is when instructions are put in an exact order. To know that input devices get formation into a computer and that output devices get information out of a computer. To understand that decomposition means breaking a problem into manageable chunks and that it is important in computing. To know that we call errors in an algorithm 'bugs' and fixing these 'debugging'. To know what to do if you feel unsafe or worried online - tell a trusted adult.	To know the roles inputs and outputs play on computers. To know some of the different components inside a computer and how they work together To know what a tablet is and how it is different from a laptop / desktop computer. To understand thatthe internet can affect your moodsand feelings.	To know that a soundtrack is music for a film/video and that one way of composing these is on programming software. To understand that using loops can make the process of writing music simpler and more effective. To know how to adapt their music while performing. To understand how online information can be used to form judgements.
Term 3		**Programming – Bee Bots (Yr 1)**	**Programming – Further coding in Scratch (Yr4)**	**Computing systems and networks – creating media Bletchley Park (Yr6)**
	To know how to operate mechanical toys, e.g. turn the knob on a wind-up toy or pull back on a friction car. To know how to operate some simple equipment	To know that computers often work together. To know that you can use a camera / tablet to make simple videos To know that algorithms move bee bots accurately to a chosen destination. To know that people you do not know on the internet (online) are strangers and are not always who they say they are.	To understand that a variable is a value that can change and know that you can create them in Scratch, To know what a conditional statement is in programming. To understand that variables can help you create a quiz in scratch. To know that privacy settings limit who can access your important personalinformation such as your name	To know the importance of having a secure password and what "brute force hacking" is. To know 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 figuresthat contributed to technologicaladvances in computing. To know whattechniques are required to create a presentation using appropriate software. To know that sound clips can be recorded using sound recording software and that sound clips can be edited and trimmed To understand some ways to deal with onlinebullying and where to go to get support

Term 4		Data information – International Space station (Yr 2)	Data handling – Investigating weather (Yr4)	Computing systems and networks – creating media Artificial Intelligence (Yr6)
	I know that information can be retrieved from digital devices andthe internet. I know how to access and interactwith a range of age appropriate technology	To understandthat you can enter simple data into a spreadsheet. To understandwhat steps youneed to take tocreate an algorithm. To understandwhat steps youneed to take tocreate an algorithm. To know whatdata to use to answer certainquestions. To know that computers canbe used to monitor supplies. To know that to stay safe online it is important to keep personal information safe.	To know that computers can use different forms of input to sense the world around them so that they can record and respond to data ('sensor data'). To know that a weather machine is an automated machine that respond to sensor data. To understand that weather forecasters use specific language, expression and pre-prepared scripts to help create weather forecast films. To know what social media is and that age restrictions apply.	To know that AI is artificial intelligence and is used in everyday life. To know that AI is trained on data to recognise patterns andgenerate outputs. To know that AI can beused to generate written content. To know that AI can beused to create visual content like pictures. To know that AI canhelp generate basic HTML code to createthe structure and layout of a website. To know that there areethical issues surrounding AI, including data privacy,bias and responsible use. To know that apps require permission to access private information and that you can alter the permissions.

Cycle Two				
	EYFS	**Years 1 and 2**	**Years 3 and 4**	**Years 5 and 6**
Term 1		**Computing systems and networks – Improving mouse skills (Yr1)**	**Computing systems and networks – Networks and the internet (Yr3)**	**Creating media – Stop motion animation (Yr5)**
	To know I can play with technological toys with knobs or pulleys and real objects such as touchscreen devices, by pressing parts and lifting flaps to achieve effects such as sound, movements or new images.	To know that "log in and log out" means to begin and end a connection with a computer. To know that a computer and mouse can be used to click, drag, fill and select and also add backgrounds, text, layers, shapes and clip art. To know that passwords are important for security. To understand the difference betweenonline and offline.	To understand that a network is a group of Interconnected devices. To know the components that make up a network (Wireless access point/WAP, Networkswitch, Router, Server and devices To know that a server is central to a network and responds to requests made. To know that the internet connects all the networks around the world. To know that a router connects us to the internet. To know what a packet is and why it is important for website data transfer. To understand some of the methods used to encourage people to buy things online	To know that decomposition of an idea is important when creating stop-motion animations. To understand that stop motion animation is an animation filmed one frame at a time using models, and with tiny changes between each photograph. To know that editing is an important feature ofmaking and improving a stop motion animation. To know that a digital footprint means the information that exists on the internet as a result of a person's online activity.
Term 2		**Computing systems and networks – Algorithms and debugging (Yr2)**	**Creating media – Video Trailers (Yr3)**	**Computing systems and networks – Search engines (Yr 5)**
	To know how to interact with age appropriate computer software, e.g. play a simple game.	To understand what machine learning is and how it enables computers to make predictions To know that loops in programming arewhere you set a certain instruction (or instructions) to be repeated multiple times. To know that abstraction is the removing of unnecessary detail to help solve a problem. To understand whatinformation I shouldnot post online.	To know that different types of camera shots can make my photos or videos look more effective. To know that I canedit photos and videos using film editing software. To understand that I can add transitions and text to my video. To understand that technology can be designed to act like or impersonate living things.	To know how search engines work. To understand that anyone can create a website and therefore we should take steps to check the validity of websites. To know that web crawlers are computerprograms that crawl through the internet. To understand what copyright is. To know what steps are required to capture bullying content as evidence
Term 3		**Programming – Scratch Jr (Yr2)**	**Computing systems and networks – Collaborative Learning (Yr 4)**	**Data handling – Big data 1 (Yr6)**
	To know how to operate mechanical toys, e.g. turn the knob on a wind-up toy or pull back on a friction car. **To know how to operate some simple equipment**	To know that coding is writing ina special language so that the computer understands whatto do. To understand that the characterin ScratchJr is controlled by the programming blocks. To know that youcan write a program to createa musical instrument or tella joke.	To understand that software can be used collaboratively online to work as a team. To know what type of comments and suggestions on a collaborative document can be helpful. To know that you can use images, text, transitions and animation in	To know that data contained within barcodes and QR codes can be used computers. To know that infrared waves are a way of transmitting data. To know that Radio Frequency Identification (RFID) is a more private way oftransmitting data.

		To know what thetechniques are for creating a strong password.	presentation slides To understand that technology can be a distraction and identify when someone might need to limit the amount of time spent using technology.	To know that data isoften encrypted so that even if it is stolen it is not useful to the thief. To understand that it is important to managepersonal passwords effectively.
Term 4		**Creating media – Digital imagery (Yr1)**	**Programming – Computational thinking (Yr4)**	**Programming – Introduction to Python (Yr6)**
	I know that information can beretrieved from digital devices andthe internet. **I know how to access and interactwith a range of age appropriate technology**	To understand that holding the camera still and considering angles and light are important to take good pictures. To know that you can edit, crop and filter photographs. To know how tosearch safely for images online. To know that you should ask permission from others before sharing about themonline and that theyhave the right to say'no.'	To know that combining computational thinking skills can help you to solve a problem. To understand that pattern recognition means identifying patterns to help them work out how the code works. To understand that algorithms can be used for a number of purposes e.g. animation, games design etc. To understand what behaviours are appropriate in order to stay safe and be respect online.	To know that there are text-based Programming languages such as Logo and Python. To know that nested loops are loops inside of loops. To understand the use of random numbersand remix Python code. To understand what itmeans to have a positive online reputation. To know some common online scams.