

Blessed Robert Widmerpool



Computing Curriculum Coverage

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2	Online safety Safer Internet Day (Spring 1)
EYFS	Set up continuous provision in your classroom:	Computing systems and networks 1: Using a computer To be able to understand what a computer keyboard is and recognise some letters and numbers. To know that a mouse can be used to click, drag and create simple drawings. To know that to use a computer you need to log in to it and then log out at the end of your session.	Programming 1: All about instructions To know that being able to follow and give simple instructions is important in computing. To understand that it is important for instructions to be in the right order. To understand why a set of instructions may have gone wrong.	Computing systems and networks 2: Exploring hardware To know that different types of technology can be found at home and in school. To know that you can take simple photographs with a camera or iPad. To know that you must hold the camera still and ensure the subject is in the shot to take a photo.	Programming 2: Programming Bee-Bots To know that you can program a Bee-Bot with some simple commands. To understand that debugging means how to fix some simple programming errors. To understand that an algorithm is a set of clear and precise instructions.	Data handling: Introduction to data To know that sorting objects into various categories can help you locate information. To know that using yes/no questions to find an answer is known as a branching database. To know that a pictogram is a way of showing information.	Safe Inside and Out – Asking for help
Year 1	Computing systems and networks: Improving mouse skills To know:	Programming 1: Algorithms unplugged To know: An algorithm is when instructions are put in an exact order.	Creating media: Digital imagery To know: Holding a camera or device still and considering angles	Programming 2: Bee-Bots To know: Humans need to give robots instructions to follow and that they will	Data handling: Introduction to data To know how charts and pictograms can	Skills showcase: Rocket to the moon To know: When we create something on a computer it can be	Online safety: Year 1 To know that the internet is many devices connected to one another.

	Log in and log out means to begin and end a connection with a computer. A computer and mouse can be used to click, drag, fill, select, add backgrounds, text, layers, shapes and clipart. Passwords are important for security and to keep us safe.	Decomposition means breaking a problem into manageable chunks, which is important in computing. Errors in an algorithm are called bugs and fixing these is called debugging.	and light are important to taking good pictures. Photographs can be edited, cropped and filtered. How to search safely for images online.	carry out these instructions exactly, even if they are wrong. Humans need to give instructions in the correct language for the robot to understand. An algorithm is a set of instructions used to carry out a task. Algorithms must give every step of a task. Algorithms must give clear, sequenced instructions. There may be an error if a set of instructions (an algorithm) does not give the expected result. Errors could result from sequencing issues, unclear instructions or missing steps.	be created using a computer. To understand that a branching database is a way of classifying a group of objects.	more easily saved and shared than a paper version. Some of the simple graphic design features of a piece of online software. A spreadsheet is an electronic table for sorting data.	To know what to do if you feel unsafe or worried online – tell a trusted adult. To know that people you do not know on the internet (online) are strangers and are not always who they say they are. To know that to stay safe online, it is important to keep personal information safe. To know that ‘sharing’ online means giving something specific to someone else via the internet and ‘posting’ online means placing information on the internet.
Year 2	Computing systems and networks 1: What is a computer? To know: The difference between a desktop and a laptop computer. People control technology.	Programming 1: Algorithms and debugging To know: Programming a computer or device involves giving it instructions to perform specific tasks. Video games, phones, websites and apps are all created using programming.	Computing systems and networks 2: Word processing To know: Touch typing is the fastest way to type. I can make text a different style, size and colour.	Option 1: Programming 2: Scratch Junior To know that coding is writing in a special language so that the computer understands what to do. To understand that the character in Scratch Jr is	Data handling: International Space Station To know: Simple data can be entered into a spreadsheet. What steps are needed to take to	Creating media: Stop motion: Using tablets To understand that an animation is made up of a sequence of photographs. To know that small changes in my frames will create a	Online safety: Year 2 To understand the difference between online and offline. To understand what information I should not post online. To know how to create a strong password.

	Some input devices that give a computer an instruction about what to do (output). Computers often work together.	An algorithm is a set of instructions used to carry out a task. An algorithm becomes a program when it is coded. Programs execute the exact instructions they are given, even if they are incorrect. A program is a series of instructions (algorithms) that are written for a computer to follow.	Copy and paste is a quick way of duplicating text.	controlled by the programming blocks. To know that you can write a program to create a musical instrument or tell a joke.	create an algorithm. What data to use to answer certain questions. Computers can be used to monitor supplies.	smoother looking animation. To understand what software creates simple animations and some of its features e.g. onion skinning.	To know that you should ask permission from others before sharing about them online and that they have the right to say 'no.' To understand that not everything I see or read online is true.
Year 3	Computing systems and networks 3: Journey inside a computer To know the roles that inputs and outputs play on computers. To know what some of the different components inside a computer are e.g. CPU, RAM, hard drive, and how they work together. To know what a tablet is and how it is different from a laptop/desktop computer.	Programming: Scratch To know: Decomposition is the process of breaking down a task or problem into smaller parts. Breaking down a problem into smaller parts makes it easier to solve.	Microsoft Office 365: Computing systems and networks 2: Emailing To understand that email stands for 'electronic mail.' To know that an attachment is an extra file added to an email. To understand that emails should contain appropriate and respectful content. To know that cyberbullying is bullying using	Computing systems and networks 1: Networks To understand that a network is a group of interconnected devices. To know the components that make up a network (Wireless access point/WAP, Network switch, 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.	Data handling: Comparison cards databases To know: A database is a collection of data stored in a logical, structured and orderly manner. Computer databases can be useful for sorting and filtering data. Different visual representations of data can be made on a computer.	Creating media – Stop-frame animation (NCCE SOW) Learners will use a range of techniques to create a stop-frame animation. They will apply those skills to create a story-based animation. This unit will conclude with learners adding other types of media to their animation, such as music and text.	Online safety: Year 3 To know: That not everything on the internet is true; people share facts, beliefs and opinions online. The internet can affect people's moods and feelings. Privacy settings limit who can access important personal information, such as names, ages, gender etc. What social media is and that age restrictions apply.

			electronics such as a computer or phone.	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.			
Year 4	Microsoft Office 365: Computing systems and networks: Collaborative learning To know: Software can be used collaboratively online to work as a team. What type of comments and suggestions on a collaborative document can be helpful. You can use images, text, transitions and animation in presentation slides.	Programming 1: Further coding with Scratch To know: Breaking down a problem into smaller parts makes it easier to solve the problem. Loops are used to save time when writing code by reducing repetition. A variable is a container or holder for storing information that can change, e.g. numbers or text. Conditional statements tell the computer what to do next based on a user's input. It is important to identify where the mistake is in the programming as part of the debugging process. Errors in a program could result from sequencing errors, coding errors or missing code.	Microsoft Office 365: Creating media: Website design To know that a website is a collection of pages that are all connected. To know that websites usually have a homepage and subpages as well as clickable links to new pages, called hyperlinks. To know that websites should be informative and interactive.	Skills showcase: HTML To know: And identify examples of HTML tags. What changing the HTML does to alter the appearance of an object on the web. Copyright means that those images are protected and to understand that people should use a 'Creative Commons' image search if they wish to use images from the internet. What fake news is and ways to spot websites that carry this type of misinformation. What the inspect tool is and ways of using it to explore and alter text and images.	Programming 2: Computational thinking To know: Decomposition is the process of breaking down a task or problem into smaller parts. Breaking down a problem into smaller parts makes it easier to solve the problem. Abstraction is identifying the important detail and ignoring irrelevant information. Loops are used to save time when writing code by reducing repetition. A variable is a container or	Data handling: Investigating weather 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.	Online safety: Year 4 To know: Some of the methods used to encourage people to buy things online. Technology can be designed to act like or impersonate living things. Technology can be a distraction and identify when someone might need to limit the amount of time spent using technology. What behaviours are appropriate to stay safe and be respectful online.

					holder for storing information that can change, e.g. numbers or text. Conditional statements tell the computer what to do next based on a user's input. It is important to identify where the mistake is in the programming as part of the debugging process. Errors in a program could result from sequencing errors, coding errors or missing code.		
Year 5	Computing systems and networks: Search engines To know: How search engines work. Anyone can create a website; therefore, people should take steps to check the validity of websites.	Programming 2: BBC micro: bit To know that a Micro:bit is a programmable device. To know that Micro:bit uses a block coding language similar to Scratch. To understand and recognise coding structures including variables.	Data handling: Mars Rover 1 To know: Mars Rover is a motor vehicle that collects data from space by taking photos and examining rock samples.	Programming 1: Music To know: Programmers often save time when creating code by taking code from one program and turning it into another. Nested loops are loops within loops.	Stop-motion animation – Option 1: Using Stop Motion Studio To know: Decomposition of an idea is important when creating stop-motion animations.	Skills showcase: Mars Rover 2 To understand that bit patterns represent images as pixels. To understand that the data for digital images can be compressed.	Online safety: Year 5 To know: Possible dangers online and how to stay safe. The pros and cons of online communication. That information on the internet might not be true or correct and ways of checking validity.

	Web crawlers are computer programs that crawl through the internet. What copyright is.	To know what techniques to use to create a program for a specific purpose (including decomposition).	What numbers using binary code look like and be able to identify how messages can be sent in this format. RAM is Random Access Memory and acts as the computer's working memory. What simple operations can be used to calculate bit patterns.	Running a program to identify errors should be done before checking the code. Errors in a program could be a result of forgetting to end a loop.	Stop-motion animation is filmed one frame at a time using models and with tiny changes between each photograph. Editing is an important feature of making and improving a stop-motion animation.	To know the difference between ROM and RAM. To understand various techniques that will improve the design of a 3D object (using CAD software).	What to do if they experience bullying online. How to use an online community safely.
Year 6	Computing systems and networks: Bletchley Park and the history of computers To know: The importance of having a secure password and what brute force hacking is. The first computers were created at Bletchley Park to crack the Enigma code to help the war effort in World War 2. About some of the historical figures that contributed to technological	Computing systems and networks: Exploring AI To know: AI is artificial intelligence and is used in everyday life. AI is trained on data to recognise patterns and generate outputs. AI can be used to generate written content. AI can be used to create visual content like pictures. AI can help generate basic HTML code to create the structure and layout of a website. There are ethical issues surrounding AI, including data	Data handling 1: Big Data 1 To know: Data contained within barcodes and QR codes can be used by computers. Infrared waves are a way of transmitting data. Radio Frequency Identification (RFID) is a more private way of transmitting data. Data is often encrypted so that even if it is stolen it is not useful to the thief.	Programming: Exploring Python To know: Code may sometimes need to be downloaded onto a physical system/device. Programmers often save time when creating code by taking code from one program and turning it into another. Nested loops are loops within loops. It is important to follow the syntax rules in a programming language so that the computer understands what we are trying to tell it, but	Data handling 2: Big Data 2 To know that data can become corrupted within a network but this is 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.	Skills showcase: Inventing a product To know: What designing an electronic product involves. Which programming software/language is best to achieve a purpose. The building blocks of computational thinking, for example, sequence, selection, repetition, variables and inputs and outputs.	Online safety: Year 6 To know: A digital footprint means the information that exists on the internet as a result of a person's online activity. What steps are required to capture bullying content as evidence. It is important to manage personal passwords effectively. What it means to have a positive online reputation. Some common online scams.

	advances in computing. What techniques are required to create a presentation using appropriate software. Sound clips can be recorded using sound recording software. Sound clips can be edited and trimmed.	privacy, bias and responsible use		that we do not need to remember all these rules. Many text-based coding languages use brackets or indentation to show which code belongs to a particular function or loop. Typing and spacing are very important in text-based languages and can cause errors in code if used incorrectly. Running a program to identify errors should be done before checking the code. Errors in a program could be as a result of forgetting to 'end' a loop.			
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