Cycle A

Computing Curriculum Design

Computing Knowledge	Computing Skills	How are we learning this, through real-life, personal experiences?
	Y1&2	
Computing Systems: Using computers 1 To know: • The names of common digital devices • The names of the parts of a device • People should have different passwords • Passwords keep things safe • Computer files need a name so they can be found again • Work can be saved on a digital device • Online means to be connected to other devices or the internet • Some digital devices are online	• Use a touchscreen to interact with a digital device • Use a keyboard to interact with a digital device • Describe where technology is used at home • Browse and interact with pre-selected websites and software • Create and name a file with guidance • Save and retrieve work with guidance • Use a password to log in and out of a common platform • Recognise a log in screen	• Discussing technology children use at home • Discussing digital devices they have at home • Children browse websites related to their interests
Programming: Commands unplugged To know: • There may be an error if a set of instructions does not give the expected result • Errors could result from sequencing, unclear instructions or missing steps	• Explain what they are trying to achieve with their instructions • Write clear, sequences instructions for familiar tasks • Use terms 'start', 'end' and 'next' to describe the steps in instructions • Change their instructions or algorithms into code that a robot understands	• Unplugged activities • Give examples of commands from their life • Explore commands through games • Give commands for others to follow • Use play to explore the order and structure of instructions
Programming 2: Algorithms and Debugging To know:	• Develop confidence with a keyboard and basics of touch typing • Explain what an algorithm is • Follow an algorithm	• Unplugged activities • Creating algorithms for everyday tasks e.g. getting dresses, brushing teeth

• Understand what machine learning is and how it enables computers to make predictions • Loops in programming are where you set a certain instruction to be repeated multiple times • Abstraction is the removing of unnecessary detail to help solve a problem	• Create a clear and precise algorithm • Use an algorithm to write a basic computer program • Explain what decomposition is • Decompose a game to predict the algorithms used to create it • Incorporate loops within algorithms	
Creating Media: Digital Designers To know: •	•	
Y3&4		
Programming: Scratch To know: • Decomposition is the process of breaking down a task into smaller parts • Breaking down a problem into smaller parts makes it easier to solve	• Work towards a given goal that a program needs to accomplish • Break down what they want to achieve into smaller parts • Tinker with an existing text-based code to see how it affects a program • Remix code to alter and add to an existing program • Recognise the relationship between what is happening in a program and the written code • Work backwards, beginning to identify the code they think a program uses	• Children use their interests and likes to program their own story • Children have a go at programming and coding each on their own device

	• Run small chunks of code at a time to find an error or bug	
Computer systems & Networks: Connecting Devices To know: • A peripheral is something you can connect to a device • Ports are where peripherals can be attached • A computer is made from different components that do different jobs • Some peripherals connect wirelessly • A network is a group of two or more connected computers • Networks are made up of components such as servers, routers and switches • Networks allow devices to share information • Different log ins have different purposes • The school network is a private system that can only be accessed by school	• Select and use appropriate devices for specific purposes • Recognise the shape and name of connectors and their ports • Connect or pair a wireless peripheral like headphones or micro:bit • Identify examples of networks • Save and retrieve files from different places on a network • Independently log in and out • Describe how computer accounts are personalised to a user	• Discuss networks and devices they may use at school and at home • Link their learning about the school network to network devices in their home
Programming: Further programming with Scratch To know:	• Work towards a given goal that a program needs to accomplish	• Program games and projects linked to their interests and likes • Program a times table game

• Breaking down a problem into smaller parts makes it easier to solve the problem • A variable is a container or holder for storing information that can change • Loops are used to save time when writing code by reducing repetition • Conditional statements tell the computer what to do next based on 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	• Break down what they want to achieve into smaller parts • Tinker with an existing text-based code to see how it affects a program • Remix code to alter and add to an existing program • Create loops to make code more efficient in block-based programs • Begin to use variables in block-based programming language to make programs more interactive • Include a conditional statement in block-based programming languages • Work backwards, beginning to identify the code they think a program uses • Run small chunks of code at a time to find an error or bug	
Creating Media: Video Trailers To know: •		
Y5&6		
Programming: Scratch - Pixels and Positions To know: • Nested loops are loops within loops • Computers use pixels to measure in digital visuals • Positions are often understood by a computer as x and y	• Make links between different programming interfaces • Look at programming blocks and consider how they could be used in a program • Decompose a program independently when given a specific outcome or task • Live coding	• Programming games and projects linked to their interests and likes • Programming and coding each on their own device

• Turns or rotations are often described as degrees • Errors in a program could be a result of forgetting to 'end' a loop	• Altering existing code with a new, specific outcome in mind • Use nested loops to make code more efficient • Use variables in block-based programming languages and understand the impact of changing the variables in their code • Systematically identify mistakes, problems or bugs in a program	
Computer Systems & Networks: Machine Learning To know: •	•	•
Creating Media: Creating Podcasts To know: • .	•	•
Data Handling: Exploring Spreadsheets To know:	•	•