Year 1/2 Computing Progression

Strand	Area of learning	Progression of skills and knowledge	Unit coverage (Cycle A / Cycle B)
Computer Science	Algorithms and instructions	Year 1: Understand that an algorithm is a set of ordered instructions to solve a problem and that coding turns it into instructions a computer can interpret. Year 2: Create an algorithm and turn each step into code; recognise that program outputs result from coded instructions.	Cycle A: Creating and Following Instructions; Route Explorers. Cycle B: Coding.
	Programming and debugging	Year 1: Arrange code blocks to create a simple program; recognise simple errors and attempt to debug. Year 2: Create programs with more than one object type, alter attributes, use timers and button-triggered events, and debug by interpreting code in sequence.	
	Logical reasoning	Year 1: Predict outcomes using the intended algorithm and code blocks, focusing on objects, actions and events. Year 2: Identify events and actions in programs and compare a design plan or algorithm with the program's behaviour.	
Information Technology	Digital content and software	Year 1: Name, save and retrieve work; access online resources; create and combine images, sound and text for a purpose. Year 2: Access, save and edit content; use software to create and manipulate content and merge artefacts from different sources.	Cycle A: Introduction to PM; Data Explorer; Questioning. The Internet Cycle B: Introduction to PM; Creative Computing; Creating Pictures; Animated Stories. Spreadsheets.
	Data handling	Begin to organise, store and retrieve digital content. Progress to using spreadsheets to organise data and perform calculations and using digital tools to present information.	
	Understanding technology	Identify technology in and outside school and explain its purpose. Develop understanding that devices connect to the internet and provide access to websites and information.	
Digital Literacy	Searching and online information	Begin to understand that online content varies and may be real or make-believe. Use simple keyword searches and navigate webpages using links, tabs and buttons; recognise that not everything online is true.	Cycle A: The Internet. Both cycles: 2BeSafe.
	Safety, privacy and relationships	Follow rules for safe technology use, keep personal information private and tell a trusted adult about worrying content or contact. Develop an understanding of passwords, consent, respectful behaviour and online bullying.	
	Copyright, identity and reputation	Understand that their own work belongs to them and that copying others' work does not make it theirs. Recognise that online information may remain available and be copied; begin to understand online identity.	

Year 3/4 Computing Progression

Strand	Area of learning	Progression of skills and knowledge	Unit coverage (Cycle A / Cycle B)
Computer Science	Algorithms and decomposition	Year 3: Plan algorithms in increasing detail and break tasks into smaller logical steps. Year 4: Independently design, code, test and debug a simple program, decomposing tasks and beginning to consider efficiency.	Cycle A: Logo; Coding. Cycle B: Route Planners; Coding.
	Sequencing, repetition and selection	Year 3: Code sequential programs and use timers and repetition. Year 4: Use sequencing, selection (if/if-else) and repetition; understand and create number variables such as scores.	
	Logical reasoning and debugging	Year 3: Read and create flowcharts, debug logically and begin to consider nested code. Year 4: Read multi-step programs, predict outcomes and debug by considering how code sections interact.	
Information Technology	Communication and digital systems	Understand digital and non-digital communication. Read, compose and send emails; develop understanding of hardware and software and how digital systems support tasks.	Cycle A: Animation; Sound Stories; Touch Typing; Introduction to AI. Cycle B: Email; Unpacking Hardware & Software; Presentations.
	Creating and combining content	Select suitable software. Create presentations, animations, sound stories and musical compositions; combine digital products, for example music within an animation.	
	Data and digital tools	Create simple databases and spreadsheets, perform calculations and present information. Use a growing range of software tools appropriately and develop keyboard skills.	
Digital Literacy	Searching and evaluating	Use key phrases and autocomplete. Judge whether online information is accurate, use clear keywords and refined techniques such as quotation marks, and consider fake news and advertising.	Cycle B: Effective Searching. Both cycles: 2BeSafe.
	Online behaviour and relationships	Recognise online bullying and different forms it can take. Understand that knowing someone online differs from knowing them in real life; practise respectful behaviour and know when to seek help.	
	Privacy, reputation and identity	Understand that online information may be created, copied or shared by others. Explore privacy, data collection and consent; reflect on online and offline identity and recognise impersonation.	
	Copyright and wellbeing	Think carefully about who owns online images, music and videos and whether they can be reused. Recognise when technology may distract from other activities and consider screen-time strategies.	

Year 5/6 Computing Progression

Strand	Area of learning	Progression of skills and knowledge	Unit coverage (Cycle A / Cycle B)
Computer Science	Algorithms, decomposition and abstraction	Year 5: Consider different program structures, decompose tasks and model parts of physical systems through code; understand abstraction. Year 6: Use design documentation and flowcharts to produce accurate algorithms and apply decomposition and abstraction confidently.	Cycle A: Coding; Introduction to Python. Cycle B: Coding.
	Programming structures and variables	Year 5: Use sequence, selection and repetition; recognise when functions improve efficiency and readability; use string and number variables. Year 6: Use a wider range of coding structures, variables, user inputs, cloning and hotspots; transfer block-coding skills to Python.	
	Logical reasoning and debugging	Year 5: Use logical reasoning and testing to identify and fix bugs. Year 6: Begin debugging at the design and algorithm stage and use a systematic step-by-step approach with less reliance on trial and error.	
Information Technology	Data and digital products	Year 5: Use databases, spreadsheets and word processing; collect, manipulate and interrogate data to answer a query. Year 6: Transfer skills between tools, analyse data and present information using graphs, blogs, spreadsheets and other artefacts.	Cycle A: Networks; Databases; Spreadsheets; Data Detectives. Cycle B: Quizzing; Game Creator; Graphing; Spreadsheets; Word Processing.
	Networks and digital systems	Develop understanding of networks and the services they provide. By Year 6, explain network functions, distinguish LAN and WAN, and explain the difference between the internet and the World Wide Web.	
	Creating and selecting digital content	Select software for a purpose. Create quizzes, games and concept maps, and use digital tools with greater sophistication, including 3D models and digital content embedded in other work.	
Digital Literacy	Search and evaluation	Assess trustworthiness, understand how search engines rank results, recognise targeted advertising and sponsorship, distinguish misinformation from disinformation, and acknowledge sources when reusing content.	Both cycles: 2BeSafe.
	Online behaviour and relationships	Understand how online bullying differs from face-to-face bullying, how to report it and capture evidence such as screenshots and URLs. Respect boundaries and consider consequences of sharing information or images.	
	Privacy, security and reputation	Create strong passwords, understand app permissions and privacy settings, recognise scams and phishing, and develop strategies to protect a positive online reputation and identity.	
	Wellbeing and identity	Understand age ratings and persuasive design. Use strategies to protect wellbeing, including breaks and balanced screen time. Critically consider harmful online representations and stereotypes and seek support when needed.	