Progression in Computing Knowledge & Skills

Information Technology

	Expectations	Key words
EYFS	Completes a simple program on a computer Use ICT hardware to interact with age-appropriate computer software Recognises that a range of technology is used in places such as homes and schools Select and use technology for particular purposes	Program Software Technology4+
Y1	To sort items using a range of criteria To use a pictogram to record results To introduce the concept of spreadsheets and begin to make basic use of one to count items To create an animated story using sound, voice and music created by the children To publish e-books on a class board	Criteria Spreadsheet Data Electronic
Y2	To understand the advantages a spreadsheet has over a pictogram To use copy, paste and total tools within a spreadsheet Use a spreadsheet to add amounts Create tables and block graphs Use a binary tree to answer questions To use a database to answer simple and complex questions To understand the terminology associated with searching To read a search results page and choose appropriate To use line and pattern templates and other art functions to create a piece of surrealist art To upload sounds to given software and use sounds from a sound bank to create their own music	Tool Binary Searching bank
Y3	To create pie charts and bar graphs automatically from data To enter data into a graph and answer questions To solve an investigation and enter results in graphic form To use more than, less than and equal to compare numbers and work out solutions Find specified cell locations in a spreadsheet To know the correct way to sit at a keyboard To know how to use home, top and bottom row keys	Representation Investigate Posture Database Simulation

	To know the keys typed with the left and right hands To sort objects using yes/no questions To complete a branching database To create and debug their own branching database To know what a simulation is, explore one, then analyse and evaluate a simulation	
Y4	Use the formula wizard to add formulae and explore formatting cells Use a series of data to create a line graph Use a spreadsheet for budgeting Explore place value with a spreadsheet To know how to create animation using computer software To add backgrounds and sounds to an animation To know how to use the onion skin tool to create an image To use stop motion to create an animation To search effectively to find out information To assess whether true and reliable To understand the different parts which make up a computer	Formula Formulae Onion skinning Reliability Processor Motherboard Circuits
Y5	To use formula in a spreadsheet to convert measurements Use formulae to calculate area, perimeter and other real life problems Use simple formulae with different variables Use spreadsheets to plan for an event To know how to search a database to answer questions Enter information into a class database Create their own database by adding records and database field information To create correctly structured questions to retrieve information from a database Be able to describe elements of a successful game Upload images to create an environment Change animations and sounds of characters Create and evaluate a playable game including peers Adapt and manipulate flat images which represent models Understand how designs needed to adapted to suit a purpose Refine a design for printing and making in to a model	Nodes Connections Stage Records Fields Environment variables

	To create a concept map with correct vocabulary	
Y6	To use spreadsheets to solve probability questions Use spreadsheets to create a computational model Use a spreadsheet to model a real life situation and come up with solutions Create test and debug a plan for a story based text adventure To code a map based text adventure including debugging of code To understand the difference between www and the internet To learn the difference between LAN and WAN To know how we access the internet in school To know the history of the internet To combine text, database and graphic skills to create quizzes for a target audience	Probability LAN WAN

Digital Literacy

Online Safety

	Expectations	Key words
EYFS	Know information can be retrieved form computers Select appropriate technology for the task Be aware of what to do if they see something they do not like on a website, e.g., how to turn the monitor off, tell an adult, use back buttons to return to the home page	Retrieve Safe
Y1	Children can log in safely To take ownership of their creative work To be able to safely save and retrieve work Understand the importance of logging out safely Be aware of technology used in the local community and identify examples of technology outside school	Safe Save Retrieve Find technology
Y2	To know how to search safely Understand that work online can must moderated and approved before display To understand the concept of a digital footprint and to think critically about the information they leave online To keep personal data and hardware secure Use email as a form of communication To know that digital content can be represented in many forms Can create non-fiction content using appropriate resources Can present their digital content to an audience	Search Moderate Digital footprint Personal Hardware data
Y3	To know what makes a safe password and the consequences of giving them away Understand how the internet can be used for effective communication Begin to develop an understanding of fake information and reliability of information online To know the meaning of age restrictions and why they exist To know where to seek help if inappropriate content is viewed or received To know many methods and forms of communication To open, create and send emails using an address book To be able to add attachments to emails and send to multiple recipients	Consequence Communication Restrictions Appropriate Inappropriate Attachments Recipients
Y4	To know how to protect ourselves from online identity theft and the link between a digital footprint and identity	Software

	theft To know the risks and benefits of installing software and apps To understand the concepts of plagiarism and its consequences To understand the positive and negative influences of technology on health and environment To know the importance of a sensible balance between screen time a other parts of their healthy lifestyles To explore how font size and style can impact a text To produce a news report and collaborate for a community campaign To share animation via class blog or display	Applications (apps) Plagiarism Influence Impact
Y5	To review sources of support when using technology To know what Childnet SMART CREW is and think critically about the information they have online about themselves and others To be aware of their own responsibilities to one another with their online behaviour To know how to maintain secure passwords To understand the issues and reasons for altering images digitally To be aware of inappropriate media and the consequences of online sharing To search the internet with consideration of reliability of information and the importance of citing sources Use skills learnt in coding to create a game Create a collaborative concept map and present to an audience	Responsibilities Altering Citation Collaboration
Y6	Identify benefits and risks of mobile devices broadcasting location Identify secure sights by looking for privacy seals e.g. https/padlock Identify the benefits and risks of allowing apps and software to access personal information Children to understand how what they share impacts upon themselves and others Children to know the consequences of promoting inappropriate content and how to stop it where they experience it personally or witness it Children take ownership of the balance between technology and other aspects of their lives To identify the purpose of blogging and the features of a successful blog To understand the importance of audience and regular uploads for a successful blog To understand how blogs need to be approved by the teacher To comment and peer assess on blogs Use code to create a map-based text adventure	Broadcasting GPS Witness Bystander

Computer Science

	Expectations	Key words
EYFS	know that an instruction tells you what to do to be able to program a bee-bot to make it move Control simple games on-screen using the arrow keys.	Robot Bee-bot Sequence Navigate
Y1	Follow and create simple instructions in a computer program and physically To understand the order of instructions affects the result Be able to create a longer algorithm for an activity To explore the use of the "when" command in an algorithm	Algorithm Instructions De-bug
Y2	To understand the concept of coding within computing Begin to use repeat and timer commands Revisit de-bugging and de-bug simple programs Apply logic and reasoning to make predictions Use coding knowledge to create a more complex program which tells a story	Coding Repeat Timer predict
Y3	To understand the concepts of "object, action, output, control and event" Use flowcharts to design and review code To design and write programs which simulates and physical system To understand variables and be able to use these for specific purposes To explore the use of repeating within coding	Simulation Variable Purpose
Y4	To explore the use of "if/else" command in an algorithm and within flowcharts Children to create code which conforms to their own storyboard design Introduce and use the "repeat until" command To program a character to respond to user input Investigate control by creating a simulation To know what decomposition and abstraction are in computer science	Decomposition Abstraction If/else
Y5	Children can select relevant features of a situation and incorporate in a simulation using decomposition and abstraction To explore text variables in coding To create a playable competitive game, making use of variables, if else statements and repeats	Loops Statements Launch Permissions

	Create a program which can be used to launch other programs	
Y6	To use variables within a game to keep track of the properties of objects To use functions and understand why they are useful in coding To debug a program and organise the code into tabs To organise code into functions and call functions to eliminate surplus code within a program To explore text input within code To use a flowchart to test and debug a program Use all coding skills to create a text-based adventure game	Properties Organisation Functions Surplus