**Computer Skills and Knowledge Progression**

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| **Minimum Expectations For Nursery** | **Minimum Expectations For Reception** | **Links to KS1 Curriculum** |
| Mark make on paint software on the interactive whiteboard.  | Select brushes, colours and rubbers when drawing on paint software.  | Use various tools such as brush, pens, eraser, stamps and shapes.  | Use various tools such as brushes, pens, eraser, stamps, and shapes.  |
| Can play simple games on the interactive whiteboard by pressing buttons.  | Can play simple games on the interactive whiteboard by dragging and dropping items.  | Children can independently change games or increase levels of difficulty on games.  |  |
| Children can switch a camera/iPad on and off.  | Children can take photos on the camera/iPad.  | Children can record videos on the camera/iPad.  | Children can edit photos.  | Erases content and understands how to charge the camera/iPad.  | Identify which things count as personal information. Asks for help when they need it.  |
| Children to know to ask for help if needed. (Reception) | Children know what personal information is and knows it shouldn’t be shared online.  |

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|  | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| **Computing systems and networks** | Technology around usTo identify technologyTo identify a computer and its main partsTo use a mouse in different waysTo use a keyboard to type on a computerTo use the keyboard to edit textTo create rules for using technology responsibly | IT around usTo recognise the uses and features of information technologyTo identify the uses of information technology in the schoolTo identify information technology beyond schoolTo explain how information technology helps usTo explain how to use information technology safelyTo recognise that choices are made when using information technology | Connecting ComputersTo explain how digital devices functionTo identify input and output devicesTo recognise how digital devices can change the way that we workTo explain how a computer network can be used to share informationTo explore how digital devices can be connectedTo recognise the physical components of a network | The InternetTo describe how networks physically connect to other networksTo recognise how networked devices make up the internetTo outline how websites can be shared via the World Wide Web (WWW)To describe how content can be added and accessed on the World Wide Web (WWWTo recognise how the content of the WWW is created by peopleTo evaluate the consequences of unreliable content | Systems and SearchingTo explain that computers can be connected together to form systemsTo recognise the role of computer systems in our livesTo identify how to use a search engineTo describe how search engines select resultsTo explain how search results are rankedTo recognise why the order of results is important, and to whom | Communication and CollaborationTo explain the importance of internet addressesTo recognise how data is transferred across the internetTo explain how sharing information online can help people to work togetherTo evaluate different ways of working together onlineTo recognise how we communicate using technologyTo evaluate different methods of online communication |
| **Programming** | Moving a Robot To explain what a given command will doTo act out a given wordTo combine ‘forwards’ and ‘backwards’ commands to make a sequenceTo combine four direction commands to make sequencesTo plan a simple program To find more than one solution to a problemProgramming animationsTo choose a command for a given purposeTo show that a series of commands can be joined togetherTo identify the effect of changing a valueTo explain that each sprite has its own instructionsTo design the parts of a projectTo use my algorithm to create a program | Robot algorithms To describe a series of instructions as a sequenceTo explain what happens when we change the order of instructionsTo use logical reasoning to predict the outcome of a programTo explain that programming projects can have code and artworkTo design an algorithmTo create and debug a program that I have writtenProgramming quizzesTo explain that a sequence of commands has a startTo explain that a sequence of commands has an outcomeTo create a program using a given designTo change a given designTo create a program using my own designTo decide how my project can be improved | Sequencing sounds To explore a new programming environmentTo identify that commands have an outcomeTo explain that a program has a startTo recognise that a sequence of commands can have an orderTo change the appearance of my projectTo create a project from a task descriptionEvents and actions in programsTo explain how a sprite moves in an existing projectTo create a program to move a sprite in four directionsTo adapt a program to a new contextTo develop my program by adding featuresTo identify and fix bugs in a programTo design and create a maze-based challenge | Repetition in shapes To identify that accuracy in programming is importantTo create a program in a text-based languageTo explain what ‘repeat’ meansTo modify a count-controlled loop to produce a given outcomeTo decompose a task into small stepsTo create a program that uses count-controlled loops to produce a given outcomeRepetition in gamesTo develop the use of count-controlled loops in a different programming environmentTo explain that in programming there are infinite loops and count-controlled loopsTo develop a design that includes two or more loops which run at the same timeTo modify an infinite loop in a given programTo design a project that includes repetitionTo create a project that includes repetition | Selection in physical computingTo control a simple circuit connected to a computer To write a program that includes count-controlled loopsTo explain that a loop can stop when a condition is metTo explain that a loop can be used to repeatedly check whether a condition has been metTo design a physical project that includes selectionTo create a program that controls a physical computing project Selection in quizzesTo explain how selection is used in computer programsTo relate that a conditional statement connects a condition to an outcomeTo explain how selection directs the flow of a programTo design a program that uses selectionTo create a program that uses selectionTo evaluate my program | Variables in gamesTo define a ‘variable’ as something that is changeableTo explain why a variable is used in a programTo choose how to improve a game by using variablesTo design a project that builds on a given exampleTo use my design to create a projectTo evaluate my project Sensing movementTo create a program to run on a controllable deviceTo explain that selection can control the flow of a programTo update a variable with a user inputTo use an conditional statement to compare a variable to a valueTo design a project that uses inputs and outputs on a controllable deviceTo develop a program to use inputs and outputs on a controllable device |
| **Data and information** | Grouping dataTo label objectsTo identify that objects can be countedTo describe objects in different waysTo count objects with the same propertiesTo compare groups of objectsTo answer questions about groups of objects | PictogramsTo recognise that we can count and compare objects using tally chartsTo recognise that objects can be represented as picturesTo create a pictogramTo select objects by attribute and make comparisonsTo recognise that people can be described by attributesTo explain that we can present information using a computer | Branching databasesTo create questions with yes/no answersTo identify the attributes needed to collect data about an objectTo create a branching databaseTo explain why it is helpful for a database to be well structuredTo plan the structure of a branching databaseTo independently create an identification tool | Data loggingTo explain that data gathered over time can be used to answer questionsTo use a digital device to collect data automatically To explain that a data logger collects ‘data points’ from sensors over timeTo recognise how a computer can help us analyse dataTo identify the data needed to answer questionsTo use data from sensors to answer questions  | Flat file databasesTo use a form to record informationTo compare paper and computer-based databasesTo outline how you can answer questions by grouping and then sorting dataTo explain that tools can be used to select specific data To explain that computer programs can be used to compare data visuallyTo use a real-world database to answer questions  | Introduction to spreadsheetsTo create a data set in a spreadsheetTo build a data set in a spreadsheetTo explain that formulas can be used to produce calculated dataTo apply formulas to dataTo create a spreadsheet to plan an eventTo choose suitable ways to present data |
| **Creating media** | Digital writing To use a computer to writeTo add and remove text on a computerTo identify that the look of text can be changed on a computerTo make careful choices when changing textTo explain why I used the tools that I choseTo compare typing on a computer to writing on paperDigital paintingTo describe what different freehand tools doTo use the shape tool and the line toolsTo make careful choices when painting a digital pictureTo explain why I chose the tools I usedTo use a computer on my own to paint a pictureTo compare painting a picture on a computer and on paper | Digital photography To use a digital device to take a photographTo make choices when taking a photographTo describe what makes a good photographTo decide how photographs can be improvedTo use tools to change an imageTo recognise that photos can be changedDigital musicTo say how music can make us feelTo identify that there are patterns in musicTo experiment with sound using a computerTo use a computer to create a musical patternTo create music for a purposeTo review and refine our computer work | Desktop publishing To recognise how text and images convey informationTo recognise that text and layout can be editedTo choose appropriate page settingsTo add content to a desktop publishing publicationTo consider how different layouts can suit different purposesTo consider the benefits of desktop publishingStop frame animationTo explain that animation is a sequence of drawings or photographsTo relate animated movement with a sequence of imagesTo plan an animationTo identify the need to work consistently and carefullyTo review and improve an animationTo evaluate the impact of adding other media to an animation | Photo editing To explain that the composition of digital images can be changedTo explain that colours can be changed in digital imagesTo explain how cloning can be used in photo editingTo explain that images can be combinedTo combine images for a purposeTo evaluate how changes can improve an imageAudio productionTo identify that sound can be recordedTo explain that audio recordings can be editedTo recognise the different parts of creating a podcast projectTo apply audio editing skills independentlyTo combine audio to enhance my podcast projectTo evaluate the effective use of audio | Introduction to vector graphics To identify that drawing tools can be used to produce different outcomes To create a vector drawing by combining shapesTo use tools to achieve a desired effectTo recognise that vector drawings consist of layers To group objects to make them easier to work withTo apply what I have learned about vector drawingsVideo productionTo explain what makes a video effectiveTo use a digital device to record videoTo capture video using a range of techniquesTo create a storyboardTo identify that video can be improved through reshooting and editingTo consider the impact of the choices made when making and sharing a video |  Web page creationTo review an existing website and consider its structureTo plan the features of a web pageTo consider the ownership and use of images (copyright)To recognise the need to preview pagesTo outline the need for a navigation pathTo recognise the implications of linking to content owned by other people 3D modellingTo recognise that you can work in three dimensions on a computerTo identify that digital 3D objects can be modifiedTo recognise that objects can be combined in a 3D modelTo create a 3D model for a given purposeTo plan my own 3D modelTo create my own digital 3D model |