 NCCE Computing Curriculum Whole School Overview

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|  | **Aut 1** | **Aut 2** | **Spr 1** | **Spr 2** | **Sum 1** | **Sum 2** |
|  | **Digital Literacy/ Computer Science** | **Information Technology** | **Computer Science** |
| **EYFS** | All aspects of computing are taught through the inclusion of devices/digital technology throughout continuous provision. Children are exposed to a range of devices including Bee-Bots, iPads and laptops. |
| **Year 1** | **Technology around us**To 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 responsibly2 X EFCW units | **Digital Painting**To describe what different freehand tools doTo use the shape tool and line toolTo make careful choices when painting a digital pictureTo explain why I used the tools I didTo use a computer on my own to paint a picture1 X EFCW unit | **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 problem1 X EFCW unit | **Grouping Data**To 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 objects1 X EFCW unit | Digital WritingTo 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 writing on a computer with writing on paper1 X EFCW unit | Introduction to animationTo 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 program2 X EFCW units |
| **Year 2** | **IT around us**To recognise the uses and features of information technologyTo identify information technology in the homeTo identify information technology beyond schoolTo explain how information technology benefits usTo show how to use information technology safelyTo recognise that choices are made when using information technology | **Digital photography**To know what devices can be used to take photographsTo use a digital device to take a photographTo describe what makes a good photographTo decide how photographs can be improvedTo use tools to change an imageTo recognise that images can be changed | **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 program (series of commands)To explain that programming projects can have code and artworkTo design an algorithmTo create and debug a program that I have written | **Pictograms**To 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 | **Digital music**To say how music can make us feel (not a computing related progression step)To identify that there are patterns in musicTo describe how music can be used in different waysTo show how music is made from a series of notesTo create music for a purposeTo review and refine our computer work | **Introduction to quizzes**To 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 design |
|  | 2 X EFCW units | 1 X EFCW unit | 1 X EFCW unit | 1 X EFCW unit | 1 X EFCW unit | 2 X EFCW units |
| **Year 3** | **Connecting computers**To explain how digital devices functionTo identify input and output devicesTo recognise how digital devices can change the way 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 | **Stop-Frame Animation**To 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 | **Sequencing sounds**To explore a new programming environmentI can identify that each sprite is controlled by the commands I chooseTo 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 description | **Branching databases**To create questions with yes/no answersTo create a branching databaseTo explain why it is helpful for a database to be well structuredTo identify objects using a branching databaseTo identify the object attributes needed to collect relevant dataTo compare the information shown in a pictogram with a branching database | **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 publishing | **Events and actions**To 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 (given) challenge |
|  | 2 X EFCW units | 1 X EFCW unit | 1 X EFCW unit | 1 X EFCW unit | 1 X EFCW unit | 2 X EFCW units |
| **Year 4** | **The Internet**To 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 WebTo describe how content can be added and accessed on the World Wide WebTo recognise how the content of the WWW is created by peopleTo evaluate the consequences of unreliable content 2 X EFCW units | **Audio editing**To identify that sound can be digitally recordedTo use a digital device to record soundTo explain that a digital recording is stored as a fileTo explain that audio can be changed through editingTo show that different types of audio can be combined and played togetherTo evaluate editing choices made1 X EFCW unit | **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 program into partsTo create a program that uses count-controlled loops to produce a given outcome1 X EFCW unit | **Data logging** To explain that data gathered over time can be used to answer questionsTo use a digital device to collect data automaticallyTo explain that a data logger collects ‘data points’ from sensors over timeTo use data collected over a long duration to find informationTo identify the data needed to answer questionsTo use collected data to answer questions | **Photo editing**To explain that digital images can be changedTo change the composition of an imageTo describe how images can be changed for different usesTo make good choices when selecting different toolsTo recognise that not all images are realTo evaluate how changes can improve an image1 X EFCW unit | **Repetition in games**To 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 which 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 repetition2 X EFCW units |
|  |  |  |  | 1 X EFCW unit |  |  |
| **Year 5** | **Systems and searching**To explain that computers can be connected together to form systemsTo recognise the role of computer systems in our livesTo recognise how information is transferred over the internetTo explain how sharing information online lets people in different places work togetherTo contribute to a shared project onlineTo evaluate different ways of working together online2 X EFCW units | **Video/Audio editing**To identify that sound can be digitally recordedTo use a digital device to record soundTo explain that a digital recording is stored as a fileTo explain that audio can be changed through editingTo show that different types of audio can be combined and played togetherTo evaluate editing choices made1 X EFCW unit | **Selection in physical computing**To control a simple circuit connected to a computerTo write a program that includes count-controlled loopsTo explain that a loop can stop when a condition is met, e.g. number of timesTo conclude that a loop can be used to repeatedly check whether a condition has been metTo design a physical project which includes selectionTo create a controllable system which includes selection1 X EFCW unit | **Flat-file databases**To use a form to record informationTo compare paper and computer-based databasesTo apply my knowledge of a database to ask and answer real-world questionsTo explain that tools can be used to select data to answer questionsTo apply my knowledge of a database to ask and answer real-world questionsTo apply my knowledge of a database to ask and answer real-world questions1 X EFCW unit | **Vector drawing**To identify that drawing tools can be used to produce different outcomesTo create a vector drawing by combining shapesTo use tools to achieve a desired effectTo recognise that vector drawings consist of layersTo group objects to make them easier to work withTo evaluate my vector drawing1 X EFCW unit | **Selection in quizzes**To 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 which uses selectionTo create a program which uses selectionTo evaluate my program2 X EFCW units |

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| **Year 6** | **Communication**To explain the importance of internet addressesTo explain how data is transferred across the internetTo explain how sharing information online can help people work togetherTo evaluate different ways of working together onlineTo recognise how we communicate using technologyTo evaluate different methods of online communication2 X EFCW units | **Web page creation**To 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 people1 X EFCW unit | **Variables in games**To 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 project1 X EFCW unit | **Introduction to Spreadsheets** To create a data set in a spreadsheetTo build a data set in a spreadsheetTo explain that formulae should be used to produce calculated dataTo apply formulae to dataTo create a spreadsheet to plan an eventTo choose suitable ways to present data1 X EFCW unit | **3D Modelling**To recognise that you can work in 3D 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 model1 X EFCW unit | **Sensing movement**To create a program to run on a controllable deviceTo explain that selection can control the flow of a programTo update the variable with a user inputTo use a 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 device2 X EFCW units |

Core strands

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| Computing Systems, Networks and Online Safety- CS (Computer Science), NW (Networks), SS (Safety and Security). |
| Creating Media- CM (Creating Media), DD (Design and Development), ET (Effective use of Tools), IT (Impact of Technology). |
| Data and Information- DI (Data and Information). |
| Programming- AL (Algorithms), PG (Programming). |