 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 technology  To identify a computer and its main parts  To use a mouse in different ways  To use a keyboard to type on a computer  To use the keyboard to edit text  To create rules for using technology responsibly  2 X EFCW units | **Digital Painting**  To describe what different freehand tools do  To use the shape tool and line tool  To make careful choices when painting a digital picture  To explain why I used the tools I did  To use a computer on my own to paint a picture  1 X EFCW unit | **Moving a robot**  To explain what a given command will do  To act out a given word  To combine forwards and backwards commands to make a sequence  To combine four direction commands to make sequences  To plan a simple program  To find more than one solution to a problem  1 X EFCW unit | **Grouping Data**  To label objects  To identify that objects can be counted  To describe objects in different ways  To count objects with the same properties  To compare groups of objects  To answer questions about groups of objects  1 X EFCW unit | Digital Writing  To use a computer to write  To add and remove text on a computer  To identify that the look of text can be changed on a computer  To make careful choices when changing text  To explain why I used the tools that I chose  To compare writing on a computer with writing on paper  1 X EFCW unit | Introduction to animation  To choose a command for a given purpose  To show that a series of commands can be joined together  To identify the effect of changing a value  To explain that each sprite has its own instructions  To design the parts of a project  To use my algorithm to create a program  2 X EFCW units |
| **Year 2** | **IT around us**  To recognise the uses and features of information technology  To identify information technology in the home  To identify information technology beyond school  To explain how information technology benefits us  To show how to use information technology safely  To recognise that choices are made when using information technology | **Digital photography**  To know what devices can be used to take photographs  To use a digital device to take a photograph  To describe what makes a good photograph  To decide how photographs can be improved  To use tools to change an image  To recognise that images can be changed | **Robot algorithms**  To describe a series of instructions as a sequence  To explain what happens when we change the order of instructions  To use logical reasoning to predict the outcome of a program (series of commands)  To explain that programming projects can have code and artwork  To design an algorithm  To create and debug a program that I have written | **Pictograms**  To recognise that we can count and compare objects using tally charts  To recognise that objects can be represented as pictures  To create a pictogram  To select objects by attribute and make comparisons  To recognise that people can be described by attributes  To 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 music  To describe how music can be used in different ways  To show how music is made from a series of notes  To create music for a purpose  To review and refine our computer work | **Introduction to quizzes**  To explain that a sequence of commands has a start  To explain that a sequence of commands has an outcome  To create a program using a given design  To change a given design  To 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 function  To identify input and output devices  To recognise how digital devices can change the way we work  To explain how a computer network can be used to share information  To explore how digital devices can be connected  To recognise the physical components of a network | **Stop-Frame Animation**  To explain that animation is a sequence of drawings or photographs  To relate animated movement with a sequence of images  To plan an animation  To identify the need to work consistently and carefully  To review and improve an animation  To evaluate the impact of adding other media to an animation | **Sequencing sounds**  To explore a new programming environment  I can identify that each sprite is controlled by the commands I choose  To explain that a program has a start  To recognise that a sequence of commands can have an order  To change the appearance of my project  To create a project from a task description | **Branching databases**  To create questions with yes/no answers  To create a branching database  To explain why it is helpful for a database to be well structured  To identify objects using a branching database  To identify the object attributes needed to collect relevant data  To compare the information shown in a pictogram with a branching database | **Desktop publishing**  To recognise how text and images convey information  To recognise that text and layout can be edited  To choose appropriate page settings  To add content to a desktop publishing publication  To consider how different layouts can suit different purposes  To consider the benefits of desktop publishing | **Events and actions**  To explain how a sprite moves in an existing project  To create a program to move a sprite in four directions  To adapt a program to a new context  To develop my program by adding features  To identify and fix bugs in a program  To 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 networks  To recognise how networked devices make up the internet  To outline how websites can be shared via the World Wide Web  To describe how content can be added and accessed on the World Wide Web  To recognise how the content of the WWW is created by people  To evaluate the consequences of unreliable content    2 X EFCW units | **Audio editing**  To identify that sound can be digitally recorded  To use a digital device to record sound  To explain that a digital recording is stored as a file  To explain that audio can be changed through editing  To show that different types of audio can be combined and played together  To evaluate editing choices made  1 X EFCW unit | **Repetition in shapes**  To identify that accuracy in programming is important  To create a program in a text-based language  To explain what ‘repeat’ means  To modify a count-controlled loop to produce a given outcome  To decompose a program into parts  To create a program that uses count-controlled loops to produce a given outcome  1 X EFCW unit | **Data logging**  To explain that data gathered over time can be used to answer questions  To use a digital device to collect data automatically  To explain that a data logger collects ‘data points’ from sensors over time  To use data collected over a long duration to find information  To identify the data needed to answer questions  To use collected data to answer questions | **Photo editing**  To explain that digital images can be changed  To change the composition of an image  To describe how images can be changed for different uses  To make good choices when selecting different tools  To recognise that not all images are real  To evaluate how changes can improve an image  1 X EFCW unit | **Repetition in games**  To develop the use of count-controlled loops in a different programming environment  To explain that in programming there are infinite loops and count controlled loops  To develop a design which includes two or more loops which run at the same time  To modify an infinite loop in a given program  To design a project that includes repetition  To create a project that includes repetition  2 X EFCW units |
|  |  |  |  | 1 X EFCW unit |  |  |
| **Year 5** | **Systems and searching**  To explain that computers can be connected together to form systems  To recognise the role of computer systems in our lives  To recognise how information is transferred over the internet  To explain how sharing information online lets people in different places work together  To contribute to a shared project online  To evaluate different ways of working together online  2 X EFCW units | **Video/Audio editing**  To identify that sound can be digitally recorded  To use a digital device to record sound  To explain that a digital recording is stored as a file  To explain that audio can be changed through editing  To show that different types of audio can be combined and played together  To evaluate editing choices made  1 X EFCW unit | **Selection in physical computing**  To control a simple circuit connected to a computer  To write a program that includes count-controlled loops  To explain that a loop can stop when a condition is met, e.g. number of times  To conclude that a loop can be used to repeatedly check whether a condition has been met  To design a physical project which includes selection  To create a controllable system which includes selection  1 X EFCW unit | **Flat-file databases**  To use a form to record information  To compare paper and computer-based databases  To apply my knowledge of a database to ask and answer real-world questions  To explain that tools can be used to select data to answer questions  To apply my knowledge of a database to ask and answer real-world questions  To apply my knowledge of a database to ask and answer real-world questions  1 X EFCW unit | **Vector drawing**  To identify that drawing tools can be used to produce different outcomes  To create a vector drawing by combining shapes  To use tools to achieve a desired effect  To recognise that vector drawings consist of layers  To group objects to make them easier to work with  To evaluate my vector drawing  1 X EFCW unit | **Selection in quizzes**  To explain how selection is used in computer programs  To relate that a conditional statement connects a condition to an outcome  To explain how selection directs the flow of a program  To design a program which uses selection  To create a program which uses selection  To evaluate my program  2 X EFCW units |

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| **Year 6** | **Communication**  To explain the importance of internet addresses  To explain how data is transferred across the internet  To explain how sharing information online can help people work together  To evaluate different ways of working together online  To recognise how we communicate using technology  To evaluate different methods of online communication  2 X EFCW units | **Web page creation**  To review an existing website and consider its structure  To plan the features of a web page  To consider the ownership and use of images (copyright)  To recognise the need to preview pages  To outline the need for a navigation path  To recognise the implications of linking to content owned by other people  1 X EFCW unit | **Variables in games**  To define a ‘variable’ as something that is changeable  To explain why a variable is used in a program  To choose how to improve a game by using variables  To design a project that builds on a given example  To use my design to create a project  To evaluate my project  1 X EFCW unit | **Introduction to Spreadsheets**  To create a data set in a spreadsheet  To build a data set in a spreadsheet  To explain that formulae should be used to produce calculated data  To apply formulae to data  To create a spreadsheet to plan an event  To choose suitable ways to present data  1 X EFCW unit | **3D Modelling**  To recognise that you can work in 3D on a computer  To identify that digital 3d objects can be modified  To recognise that objects can be combined in a 3d model  To create a 3d model for a given purpose  To plan my own 3d model  1 X EFCW unit | **Sensing movement**  To create a program to run on a controllable device  To explain that selection can control the flow of a program  To update the variable with a user input  To use a conditional statement to compare a variable to a value  To design a project that uses inputs and outputs on a controllable device  To develop a program to use inputs and outputs on a controllable device  2 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). |