**Computing Progression**

**EYFS: Computing is embedded throughout the whole of the curriculum**

*Examples:*

* *Use toy phones/cameras/computers within children’s play*
* *Turn technological devices on and off*
* *Complete a simple programme on a device such as an iPad or a computer*
* *Draw information from computers to support children’s learning*

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|  | **Y1** | **Y2** | **Y3** |
| **COMPUTER SCIENCE: HARDWARE** | Learn how to explore and tinker with hardware to find out how it worksUnderstand that computers and devices around us use inputs and outputs, identifying some of theseLearn where keys are located on the keyboardLearn how to operate a camera | Understand what a computer is and that it’s made up of different componentsRecognise that buttons cause effects and that technology follows instructionsLearn how we know that technology is doing what we want it to do via its output.Use greater control when taking photos with tablets or computersDevelop confidence with the keyboard and the basics of touch typing | Understand what the different components of a computer do and how they work togetherDraw comparisons across different types of computersLearn what a server does |
| **COMPUTER SCIENCE: NETWORKS AND DATA REPRESENTATION** |  |  | Learn what a network is and its purposeIdentify the key components within a network, including whether they are wired or wirelessRecognise links between networks and the internetLearn how data is transferred |
| **COMPUTER SCIENCE: COMPUTATIONAL THINKING** | Learn that decomposition means breaking a problem down into smaller partsUse decomposition to solve unplugged challengesUse logical reasoning to predict the behaviour of simple programsDevelop the skills associated with sequencing in unplugged activitiesLearn that an algorithm is a set of step by step instructions used to carry out a task, in a specific orderFollow a basic set of instructionsAssemble instructions into a simple algorithm | Articulate what decomposition isDecompose a game to predict the algorithms used to create itUse decomposition to decompose a story into smaller partsLearn what abstraction isLearn that there are different levels of abstractionExplain what an algorithm is Follow an algorithmCreate a clear and precise algorithmLearn that computers use algorithms to make predictionsLearn that programs execute by following precise instructionsIncorporate loops within algorithms | Use decomposition to explain the parts of a laptop computerUse decomposition to explore the code behind an animationUse repetition in programsUnderstand that computers follow instructionsUse an algorithm to explain the roles of different parts of a computerUse logical reasoning to explain how simple algorithms workExplain the purpose of an algorithmForm algorithms independently |
| **COMPUTER SCIENCE: PROGRAMMING** | Programme a Bee-bot/Blue-bot to follow a planned routeLearn to debug instructions when things go wrongDevelop a how to video to explain how the Vee-bot/ Blue- bot worksLearn to debug an algorithm in an unplugged scenario | Use logical thinking to explore software, predicting, testing and explaining what it doesUse an algorithm to write a basic computer programLearn what loops areIncorporate loops to make code more efficient | Use logical thinking to explore more complex software; predicting, testing and explaining what it doesIncorporate loops to make code more efficientRemix existing code Use a more systematicapproach to debugging code,justifying what is wrong and how it can be corrected |
| **INFORMATION TECHNOLOGY: USING SOFTWARE** | Use a basic range of tools within graphic editing softwareTake and edit photographsUnderstand how to create digital art using an online paint toolDevelop control of the mouse through dragging, clicking and resizing of images to create different effectsDevelop understanding of different software tools | Develop word processing skills, including altering text, copying and pasting and using keyboard shortcutsUse word processing software to type and reformat textUse software to create story animationsCreate and label images | Take photographs and record video to tell a storyUse software to edit and enhance their video adding music, sounds and text on screen with transitions |
| **INFORMATION TECHNOLOGY: USING EMAIL AND THE INTERNET** | Search and download images from the internet safely |  | Learn to log in and out of an email accountWrite an email including a subject, ‘to’ and ‘from’Send an email with an attachmentReply to an email |
| **INFORMATION TECHNOLOGY: USING DATA** | Introduction to spreadsheetsRepresent data in tables, charts and pictogramsSort data and create branching databasesIdentify where digital content can have advantages over paper when storing and manipulating data | Collect and input data into a spreadsheetInterpret data | Understand the vocabulary associated with databases: field, record, dataLearn about the pros and cons of digital versus paper databasesSort and filter databases to easily retrieve informationCreate and interpret charts and graphs to understand data |
| **INFORMATION TECHNOLOGY: WIDER USE OF TECHNOLOGY** | Recognise common uses of information technology, including beyond schoolRecognise uses of technology beyond school | Learn how computers are used in the wider world | Understand the purpose of emails |
| **DIGITAL LITERACY** | Log in and out and save work on their own accountUnderstand the importance of a passwordWhen using the internet to search for images, learn what to do if they come across something online that worries them or makes them feel uncomfortable | Understand how to stay safe when talking to people online. Not sharing personal information and what to do if they see or hear something online that makes them feel upset or uncomfortable | Learn to be a responsible digital citizen; understand their responsibilities to treat others respectfully and recognise when digital behaviour is unkindLearn about cyberbullyingLearn that not all emails are genuine, recognise when an email might be fake and what to do about it |