**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 works  Understand that computers and devices around us use inputs and outputs, identifying some of these  Learn where keys are located on the keyboard  Learn how to operate a camera | Understand what a computer is and that it’s made up of different components  Recognise that buttons cause effects and that technology follows instructions  Learn 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 computers  Develop confidence with the keyboard and the basics of touch typing | Understand what the different components of a computer do and how they work together  Draw comparisons across different types of computers  Learn what a server does |
| **COMPUTER SCIENCE: NETWORKS AND DATA REPRESENTATION** |  |  | Learn what a network is and its purpose  Identify the key components within a network, including whether they are wired or wireless  Recognise links between networks and the internet  Learn how data is transferred |
| **COMPUTER SCIENCE: COMPUTATIONAL THINKING** | Learn that decomposition means breaking a problem down into smaller parts  Use decomposition to solve unplugged challenges  Use logical reasoning to predict the behaviour of simple programs  Develop the skills associated with sequencing in unplugged activities  Learn that an algorithm is a set of step by step instructions used to carry out a task, in a specific order  Follow a basic set of instructions  Assemble instructions into a simple algorithm | Articulate what decomposition is  Decompose a game to predict the algorithms used to create it  Use decomposition to decompose a story into smaller parts  Learn what abstraction is  Learn that there are different levels of abstraction  Explain what an algorithm is Follow an algorithm  Create a clear and precise algorithm  Learn that computers use algorithms to make predictions  Learn that programs execute by following precise instructions  Incorporate loops within algorithms | Use decomposition to explain the parts of a laptop computer  Use decomposition to explore the code behind an animation  Use repetition in programs  Understand that computers follow instructions  Use an algorithm to explain the roles of different parts of a computer  Use logical reasoning to explain how simple algorithms work  Explain the purpose of an algorithm  Form algorithms independently |
| **COMPUTER SCIENCE: PROGRAMMING** | Programme a Bee-bot/Blue-bot to follow a planned route  Learn to debug instructions when things go wrong  Develop a how to video to explain how the Vee-bot/ Blue- bot works  Learn to debug an algorithm in an unplugged scenario | Use logical thinking to explore software, predicting, testing and explaining what it does  Use an algorithm to write a basic computer program  Learn what loops are  Incorporate loops to make code more efficient | Use logical thinking to explore more complex software; predicting, testing and explaining what it does  Incorporate loops to make code more efficient  Remix existing code Use a more systematic  approach 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 software  Take and edit photographs  Understand how to create digital art using an online paint tool  Develop control of the mouse through dragging, clicking and resizing of images to create different effects  Develop understanding of different software tools | Develop word processing skills, including altering text, copying and pasting and using keyboard shortcuts  Use word processing software to type and reformat text  Use software to create story animations  Create and label images | Take photographs and record video to tell a story  Use 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 account  Write an email including a subject, ‘to’ and ‘from’  Send an email with an attachment  Reply to an email |
| **INFORMATION TECHNOLOGY: USING DATA** | Introduction to spreadsheets  Represent data in tables, charts and pictograms  Sort data and create branching databases  Identify where digital content can have advantages over paper when storing and manipulating data | Collect and input data into a spreadsheet  Interpret data | Understand the vocabulary associated with databases: field, record, data  Learn about the pros and cons of digital versus paper databases  Sort and filter databases to easily retrieve information  Create and interpret charts and graphs to understand data |
| **INFORMATION TECHNOLOGY: WIDER USE OF TECHNOLOGY** | Recognise common uses of information technology, including beyond school  Recognise 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 account  Understand the importance of a password  When 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 unkind  Learn about cyberbullying  Learn that not all emails are genuine, recognise when an email might be fake and what to do about it |