



Computing- Knowledge Progression Grid

EYFS

(30 – 50 Months)

- To know how to operate simple equipment e.g. turns on CD player and uses remote control
- To know that information can be retrieved from computers

(40 – 60+ Months)

- To know how to complete a simple program on a computer

	Years 1 & 2	Years 3 & 4	Years 5 & 6
Computer Science	<p><u>Hardware</u></p> <ul style="list-style-type: none"> • To know how to explore and tinker with hardware to find out how it works • To know that computers and devices around us use inputs and outputs, identifying some of these • To know where keys are located on the keyboard • To know how to operate a camera • To know what a computer is and that it's made up of different components • To know that buttons cause effects and that technology follows instructions • To know that technology is doing what we want it to do via its output. 	<p><u>Hardware</u></p> <ul style="list-style-type: none"> • To know what the different components of a computer do and how they work together • To know what a server does • To know the purpose of routers <p><u>Networks and Data Representation</u></p> <ul style="list-style-type: none"> • To know what a network is and its purpose • To know how data is transferred • To know the key components of a network 	<p><u>Hardware</u></p> <ul style="list-style-type: none"> • To know that external devices can be programmed by a separate computer • To know the difference between ROM and RAM • To know that the size of RAM affects the processing of data • To know the fetch, decode, execute cycle • To know about the history of computers and how they have evolved over time • To know how barcodes, QR codes and RFID work • To know about some of the methods which cause data corruption <p><u>Networks and Data Representation</u></p> <ul style="list-style-type: none"> • To know the vocabulary associated with data: data and transmit • To know how the data for digital images can be compressed

	<p><u>Computational Thinking</u></p> <ul style="list-style-type: none"> • To know that decomposition means breaking a problem down into smaller parts • To know that an algorithm is a set of step by step instructions used to carry out a task, in a specific order • To know what abstraction is • To know that there are different levels of abstraction • To know what an algorithm is • To know that computers use algorithms to make predictions • To know that programs execute by following precise instructions <p><u>Programming</u></p> <ul style="list-style-type: none"> • To know debug instructions when things go wrong • To know how the Vee-bot/ Blue-bot works. • To know how to debug an algorithm in an unplugged scenario <ul style="list-style-type: none"> • To know what loops are 	<ul style="list-style-type: none"> • To know that websites & videos are files that are shared from one computer to another • To know about the role of packets • To know that computer networks provide multiple services, such as the World Wide Web, and opportunities for communication and collaboration <p><u>Computational Thinking</u></p> <ul style="list-style-type: none"> • To know that computers follow instructions • To know the purpose of an algorithm • To know the purpose of a script of code <p><u>Programming</u></p> <ul style="list-style-type: none"> • To know that incorporating loops makes coding more efficient • To know that websites can be altered by exploring the code beneath the site 	<ul style="list-style-type: none"> • To know that messages can be sent by binary code, reading binary up to 8 characters and carrying out binary calculations • To know how bit patterns represent images as pixels • To know that computer networks provide multiple services <p><u>Computational Thinking</u></p> <ul style="list-style-type: none"> • To know how software will work based on previous experience • To know past experiences to help solve new problems <p><u>Programming</u></p> <ul style="list-style-type: none"> • To know that writing code can give a desired effect • To know a range of programming commands <ul style="list-style-type: none"> • To know the functions of code and how it can be manipulated for a range of purposes.
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<p>Information Technology</p>	<p><u>Using Software</u></p> <ul style="list-style-type: none"> • To know a basic range of tools within graphic editing software • To know different software tools • To know word processing skills, including altering text, copying and pasting and using keyboard shortcuts • To know that software can create story animations <p><u>Using Email and the Internet</u></p> <ul style="list-style-type: none"> • To know the importance of searching and downloading images from the internet safely <p><u>Using Data</u></p> <p>Introduction to spreadsheets</p> <ul style="list-style-type: none"> • To know the functions and purposes of spreadsheets. <p><u>Wider Use of Technology</u></p> <ul style="list-style-type: none"> • To know common uses of information technology, including beyond school 	<p><u>Using Software</u></p> <ul style="list-style-type: none"> • To know software that can edit and enhance their video <p><u>Using Email and the Internet</u></p> <ul style="list-style-type: none"> • Learning to log in and out of an email account • To know email include a subject and ‘to’ and ‘from’ • To know emails have attachments <p><u>Using Data</u></p> <ul style="list-style-type: none"> • To know the vocabulary associated with databases: field, record, data • To know the pros and cons of digital versus paper databases • To know that sorting and filtering within databases can easily retrieve information <p><u>Wider Use of Technology</u></p> <ul style="list-style-type: none"> • To know the purpose of emails. 	<p><u>Using Software</u></p> <ul style="list-style-type: none"> • To know ways to improve and edit final products <p><u>Using Email and the Internet</u></p> <ul style="list-style-type: none"> • To know search engines can find information effectively using key words <p><u>Using Data</u></p> <ul style="list-style-type: none"> • To know how data is collected • To know how barcodes, QR codes and RFID work <p><u>Wider Use of Technology</u></p> <ul style="list-style-type: none"> • To know what a search engine is
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Digital Literacy	<ul style="list-style-type: none"> • To know the importance of logging in and out and saving work on their own account • To know the importance of a password • To know that when using the internet to search for images, learning what to do if they come across something online that worries them or makes them feel uncomfortable is important • To know 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 	<ul style="list-style-type: none"> • To know what constitutes as a responsible digital citizen; understanding their responsibilities to treat others respectfully and recognising when digital behaviour is unkind • To know about cyberbullying • To know that not all emails are genuine, recognising when an email might be fake and what to do about it • To know what appropriate behaviour is when collaborating with others online • To know that information on the Internet might not be true or correct and that some sources are more trustworthy than others 	<ul style="list-style-type: none"> • To know the possible dangers online and how to stay safe. • Creating an animation about digital safety • To know that information on the Internet might not be true or correct and to know ways of checking validity • To know the importance of secure passwords and how to create them • To know that updated software can help to prevent data corruption and hacking