Curriculum Skills and Progression Map

Computing

Early Years Foundation Stage	Key Stage One
Understanding of the World **Technology** **Early Learning Goal** • Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes	• Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions • Create and debug simple programs • Use logical reasoning to predict the behaviour of simple programs • Use technology purposefully to create, organise, store, manipulate and retrieve digital content • Recognise common uses of information technology beyond school • Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies

	Programming & Coding	Networks	Digital Literacy	Data	E-Safety
Early Years Foundation Stage	Children in Early Years are already immersed in a programmed world. They experience it every day of their lives when: * the doors at the supermarket open automatically when they approach *the hand drier starts when they place their hands underneath *the price of an item shows as you scan *the streetlights come on automatically when it gets dark. **In the EYFS, continuous provision draws on these common uses of control technology** for children to experience first-hand and to **explore their uses through play**. Additional experiences might also include: 'programming' friends by telling them how to move around like a robot or making jam sandwiches in maths, use of control toys like remote control cars, BeeBots or apps on iPads		Practitioners will need to support the youngest children as they explore digital apparatus with discussion about what it does, how it works and how to use it safely. Children in Early Years will explore mark making programs on screens, tablets or interactive whiteboard to experiment and communicate their ideas. They will Interact with adults and their peers and **explore their environment** using multimedia equipment, including cameras, microscopes, iPads and visualisers to **capture still and moving images**. With help, they will **play back their captured recordings,** demonstrating confidence and increasingly in control. They will be encouraged to explore ways of **making and listening to sounds** using simple programs, apps and devices, e.g. talking postcards and age appropriate apps.	Children's natural curiosity has always driven them to develop an understanding of the world around them and this is no different when it comes to understanding technology; both how it works and what it can do for us. From their first, early experiences with technology, pupils begin to make sense of how it works and the opportunities it can provide. Children's experiences in this area should include exploring: *the **technology they encounter at home and school** (e.g. role play toys, photocopiers, iPads etc.) *how **technology has changed over time** and **how it differs across cultures** by sharing artefacts, photos and videos, and asking others. (Links to history).	It is important for children to learn to be esafe from an early age. Practitioners and teachers of children in the infant years play a vital part in starting this process and involving parents in recognising their responsibilities just as they do when thinking about other aspects of children's safety when crossing the road safety, handling potentially dangerous equipment in the home or at the swimming pool. With the very youngest children, many of the key online safety messages will be conveyed through **guided use, continuous provision** and **adult modelling** in the school or setting. Additionally, and importantly, this will be **alongside and with the involvement of parents and carers** at home. **Listen to young children** talking about their online world and use this overheard talk to **engage with them** and **find out more about their practice and behaviour.**

| Year 1 | ● Give simple instructions to everyday devices to make things happen
● Make choices to control simple models or simulations
● Solve a problem using ICT
● Understand what an algorithm is (a sequence of instructions or set of rules for performing a specific task) (out of the context of programming)
●Understand that algorithms need to be precise, simple, clear and limited.
● Understand that an algorithm is implemented as program on a digital device
● Input simple instructions (into programmable device or coding program) to see what happens
● Write/input a simple a program/code (no desired outcome)

Bee-Bots
● Give commands including straight forwards/backwards/turn one at a time
● Explore what happens when a sequence of instructions is given
● Give a set of simple instructions to follow a task
● Give a set of instructions to form simple geometric shapes
● Improve/change their sequence of commands | ● Discuss and share how and when they use ICT in everyday life
● Complete simple tasks on a computer by following instructions

Internet Research:
● Talk about websites they have been on
● Explore a website by clicking on the arrows, menus and hyperlinks

Emails:
● Recognise an email address
●Find the @ key on the keyboard
● Contribute to a class email
● Open and select reply to an email as a class | ● Operate a range of hardware including: cameras, video cameras, sound recording devices, tablets, keyboard, mouse etc.
● Perform basic operations on a digital device (this includes PC's, tablets, cameras, robots etc.) e.g. switch on/off, log on/off, open/close programmes and apps, enter text etc.
● Perform basic operations in a range of programmes/apps
● Create digital content, using a range of devices, including: word-processing, presentation software, paint packages, digital images and videos, computer programmes, online content (blog posts, social network updates, forum contributions and wiki entries) etc.
● Edit content in a range of programmes/apps e.g. format text, insert images, add transitions in presentation software, edit photographs, use different tools in paint packages, send and open emails etc.
● Combine digital content from multiple sources

Graphics:
● Use ICT to generate ideas for their work
● Use various tools such as brushes, pens, rubber, stamps, shapes
● Save and print work | ●Know that images give information
● Say what a pictogram is showing them
● Put data into a program
●Sort objects and pictures into simple lists or simple tables | **NOTE: Understanding technology should be incorporated into other subject areas: e.g. science, electricity, robots and machines etc.**
E-safety should be incorporated in all sessions/subjects when using information technology
● Be aware of the main risk associated with the internet
● Recognise that they should not share certain types of personal information online
● Have a clear understanding of what to do if they have concerns about inappropriate behaviour online
● Identify devices that can be used to search the internet
● Understand rules around e-safety
● Make decisions about whether or not statements found on the internet are true or not
● Identify what things count as personal information
● Identify when inappropriate content is accessed and know how to |

			Text/ Word Processing: ● Use spacebar, back space, delete, and return ● Start to use two hands when typing ● Word process a sentence/caption to present Sound Recording: ● Record sound at and away from the computer ● Use software to record sounds Video: ● Capture video ● Discuss which videos to keep and which to delete		act appropriately ● Consider other people's feelings on the internet
Year 2	● Understand what algorithms are, how they are implemented as programs on digital devices and that programs execute by following a sequence of instructions ● Use logical reasoning to predict the behaviour of simple programs Follow and predict the outcome of an program ● Write/input and test a simple a program/ code to achieve a desired outcome (ensuring it is precise, simple, clear and limited) ● Identify a bug in my programme/code (where the algorithm has gone wrong/not achieved the desired outcome) ●Debug a program (fix it by changing algorithm)	● Explain why digital folders are used ● Organise work into digital folders Internet Research: ● Talk about websites they have been on ● Explore a website by clicking on the arrows, menus and hyperlinks Emails: ● Recognise an email address ● Find the @ key on the keyboard ● Contribute to a class email ● Open and select reply to an email as a class	● Edit content in a range of programmes/apps e.g. format text, insert images, add transitions in presentation software, edit photographs, use different tools in paint packages, send and open emails etc. ● Combine digital content from multiple sources ● Make changes to digital content for an audience and purpose taking into account principles of good design Graphics: ● Use ICT to generate ideas for their work ● Use various tools such as brushes, pens, rubber, stamps, shapes ● Save, retrieve and print work	● Know that images give information ● Say what a pictogram is showing them ● Put data into a program ● Sort objects and pictures into simple lists or simple tables ● Make a simple Y/N tree diagram to sort information ● Create and search a branching database	NOTE: Understanding technology should be incorporated into other subject areas: e.g. science, electricity, robots and machines etc. E-safety should be incorporated in all sessions/subjects when using information technology ● Develop sensitivity to others online, treating them with respect and showing respect for their privacy ● Know how to report a worry and talk to teachers or parents about any concerns they have ● Identify devices that can

	Bee-Bots ● Give commands including straight forwards/backwards/turn one at a time ● Explore what happens when a sequence of instructions is given ● Give a set of simple instructions to follow a task ● Give a set of instructions to form simple geometric shapes ● Improve/change their sequence of commands		**Text/ Word Processing:** ● Use spacebar, back space, delete, arrow keys, return, shift ● Start to use two hands when typing ● Word process short texts to present ● Change text size and font ● Use word art for effect **Sound Recording:** ● Record sound at and away from the computer ● Use software to record sounds ● Change sounds recorded ● Save, retrieve and edit sounds **Video:** ● Capture video ● Discuss which videos to keep and which to delete ● Arrange clips to create a short film ● Add a title and credits **Presentation (PowerPoint)** ● Create a title slide and choose a style ● Insert a picture/text/graph from the internet or personal files ● Add text ●Decide upon and use effective transitions ● Present to the class		be used to search the internet ● Identify obviously fake information in a variety of contexts ● Identify personal information that should be kept private ● Understand rules around e-safety ● Identify when inappropriate content is accessed ● Recognise that a variety of devices can be used to connect to a number of people ● Consider other people's feelings on the internet