



Computing Curriculum Map – Becoming Computer Scientists



Computing Curriculum Intent at Ghost Hill



“Computing is not about computers anymore. It is about living.”

Nicholas Negroponte

At Ghost Hill our intent is to ensure our computing curriculum enables children to become confident digital citizens. We seek to educate children on the importance of technology in a safe and supported environment as they become increasingly exposed to it in their everyday lives. We recognise that the ability to use computers and work digitally “is not about computers anymore. It is about living.”

Computing at Ghost Hill intends to develop ‘thinkers of the future’ through a modern, ambitious, and relevant education in computing. We want to equip pupils to use computational thinking and creativity that will enable them to become active participants in the digital world. It is important to us that the children understand how to use the ever-changing technology to express themselves, as tools for learning and to drive their generation forward into the future. We aim to equip children with the life skills they will need to embrace and utilise new technology to function in a rapidly changing virtual world.



Our progression is based on the ‘Teach Computing’ framework developed by the National Centre for Computing Education (NCCE). We share their vision for every child in every school in England to have a world-leading computing education. This is why we have implemented their planning, training, and resources at Ghost Hill.

Composite (From National Curriculum)

Progression Components (The building blocks to National Curriculum Composites)

By the End of KS1 (Y2)	The Building Blocks of Knowledge in the Early Years Foundation Stage		Year 1	Year 2
	<i>In Early Years these building blocks will be observed and provided through rich opportunities in the environment for children to access independently. Computing is predominantly observed within Personal, Social and Emotional Development, Physical Development, Understanding the World and Expressive Art and Design.</i>			
1. Understand what algorithms are; how they are implemented as programs on digital devices; and that programs	Nursery	Reception (including ELG)	<ul style="list-style-type: none">Explain what a given command will doAct out a given wordUse my algorithm to create a program	<ul style="list-style-type: none">Describe a series of instructions as a sequenceExplain that a sequence of commands has a startExplain that a sequence of commands has an outcome
	<ul style="list-style-type: none">Choose the right resources to carry out their own plan.Develop their own ideas and then decide which materials to use to express them.Understand and follow a basic	<ul style="list-style-type: none">Be confident to try new activities and show independence, resilience, and perseverance in the face of challenge.Show resilience and perseverance in the face of a challenge.		

execute by following precise and unambiguous instructions	<p>instruction</p> <ul style="list-style-type: none"> Explore the outcomes when pressing buttons on toys and resources 	<ul style="list-style-type: none"> Begin to verbally compose a basic instruction. Select and use a range of technology, including programming a simple toy 		
2. Create and debug simple programs			<ul style="list-style-type: none"> Combine forwards and backwards commands to make a sequence Combine four direction commands to make sequences Plan a simple program Find more than one solution to a problem Show that a series of commands can be joined together Identify the effect of changing a value Explain that each sprite has its own instructions 	<ul style="list-style-type: none"> Design an algorithm Create and debug a program that I have written Create a program using a given design Change a given design Create a program using my own design Decide how my project can be improved
3. Use logical reasoning to predict the behaviour of simple programs	<ul style="list-style-type: none"> Match their developing physical skills to tasks and activities in the setting Explore how things work. Understand that cameras can take still and moving images 		<ul style="list-style-type: none"> Choose a command for a given purpose Design the parts of a project 	<ul style="list-style-type: none"> Explain what happens when we change the order of instructions Use logical reasoning to predict the outcome of a program Explain that programming projects can have code and artwork
4. Use technology purposefully to create, organise, store, manipulate and retrieve digital content	<ul style="list-style-type: none"> Select and use activities and resources, with help when needed. This helps them to achieve a goal they have chosen, or one which is suggested to them. Use one-handed tools and equipment, such as a mouse Develop their own ideas and then decide which materials to use to express them. 	<ul style="list-style-type: none"> Develop their small motor skills so that they can use a range of tools competently, safely and confidently. Use their core muscle strength to achieve a good posture when sitting at a table or sitting on the floor. Explore, use and refine a variety of artistic effects to express their ideas and feelings. 	<ul style="list-style-type: none"> Use a mouse in different ways Use a keyboard to type on a computer Use the keyboard to edit text Describe what different freehand tools do Use the shape tool and the line tools Make careful choices when painting a digital picture Explain why I chose the tools I used 	<ul style="list-style-type: none"> Use a digital device to take a photograph Make choices when taking a photograph Describe what makes a good photograph Decide how photographs can be improved Use tools to change an image Recognise that photos can be changed

	<ul style="list-style-type: none"> Recognise the letters in their name on a computer keyboard 	<ul style="list-style-type: none"> Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form, and function. 	<ul style="list-style-type: none"> Use a computer on my own to paint a picture Compare painting a picture on a computer and on paper Label objects Identify that objects can be counted Describe objects in different ways Count objects with the same properties Compare groups of objects Answer questions about groups of objects Use a computer to write Add and remove text on a computer Identify that the look of text can be changed on a computer Make careful choices when changing text Explain why I used the tools that I chose Compare typing on a computer to writing on paper 	<ul style="list-style-type: none"> Recognise that we can count and compare objects using tally charts Recognise that objects can be represented as pictures Create a pictogram Select objects by attribute and make comparisons Recognise that people can be described by attributes Explain that we can present information using a computer Say how music can make us feel Identify that there are patterns in music Experiment with sound using a computer Use a computer to create a musical pattern Create music for a purpose Review and refine our computer work
5. Recognise common uses of information technology beyond school	<ul style="list-style-type: none"> Discuss and identify information technology in school 	<ul style="list-style-type: none"> Discuss and identify information technology both in school and the wider world Begin to understand why we use technology 	<ul style="list-style-type: none"> Identify technology Identify a computer and its main parts 	<ul style="list-style-type: none"> Recognise the uses and features of information technology Identify the uses of information technology in the school Identify information technology beyond school Explain how information technology helps us
6. use technology safely and respectfully, keeping personal information private; identify where to go for help and support	<p>See Ghost Hill's separate Online Safety progression Map</p>			

when they have concerns about content or contact on the internet or other online technologies.

