



Computing

Skills progression overview at Sixpenny Handley First School and Nursery

National curriculum/EY curriculum			
Year N (ages in brackets)	Year R	Key stage 1	Key Stage 2
<p>PSED</p> <p>Remember rules without needing an adult to remind them.</p> <p>PD</p> <p>Match their developing physical skills to tasks and activities in the setting</p> <p>UW</p> <p>Explore how things work.</p>	<p>Reception children will be learning to: (Development matters)</p> <p>PSED -Show resilience and perseverance in the face of a challenge.</p> <p>-Know and talk about the different factors that support their overall health and wellbeing: -sensible amounts of 'screen time'.</p> <p>PD: Develop their small motor skills so that they can use a range of tools competently, safely and confidently.</p> <p>Expressive Art and design: Explore, use and refine a variety of artistic effects to express their ideas and feelings.</p> <p>ELG: Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.</p> <p>-Be confident to try new activities and show independence, resilience and perseverance in the face of challenge.</p>	<ul style="list-style-type: none"> ▪ 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. 	<ul style="list-style-type: none"> ▪ design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts ▪ use sequence, selection, and repetition in programs; work with variables and various forms of input and output ▪ use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs ▪ understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration ▪ use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content ▪ select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information ▪ use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.



	Explain the reasons for rules, know right from wrong and try to behave accordingly.		
--	---	--	--

Themes within subject	Year N (ages in brackets)	Year R	Year 1	Year 2	Year 3	Year 4
	As an computer literate, a nursery child can:	As an computer literate, a reception child can:	As an computer literate, a year 1 child can:	As an computer literate, a year 2 child can:	As an computer literate, a year 3 child can:	As an computer literate, a year 4 child can:
What is a computer?	<p>Explore course and effect with electrical devices. (interactive toys and age appropriate electrical devices)</p> <p>Identify and explores: torches, tablets, talking tins, cameras, CD players</p>	<p>I Can recognised computers in my life (phones, ipads, tablets, tv)</p> <p>I can show that it responds to an input.</p>	<ul style="list-style-type: none"> I can recognise computers in a range of forms (e.g. iPads, phones, laptops, netbooks, desktops) I can explain the computer's response to inputs(e.g. keys being pressed causes typing) <p>I can discuss what might be inside devices e.g. microphone/camera inside mobile phone)</p>	<ul style="list-style-type: none"> I do recognise computers in a range of forms outside of school(E.g. traffic lights, DVD players, microwaves) I know that people interact with computers I know that computers have no intelligence and their computers can do nothing unless the program is run <p>I know that all software executed on digital devices is programmed</p>	<ul style="list-style-type: none"> I know the range of digital devices can be considered the computer I can explain how the computers respond to input I can explain that the computer shows what it's doing through outputs <p>I can understand the computer receives inputs from a circuit</p>	<ul style="list-style-type: none"> I can explain and use a range of input and output devices I can understand a computer receives input through a circuit I know how programs specify the function of the general-purpose computer I can discuss what might be inside devices <p>I know the difference between data and information</p>
Algorithms	<p>Play games by following instructions. (Robots)</p> <p>Guiding other by giving step by step instructions</p>	<p>I can explain that a computer follows instructions.</p> <p>I can give instructions to a friend</p>	<ul style="list-style-type: none"> I can explain that an algorithm is a set of instructions I can explain that algorithms are implemented on a 	<ul style="list-style-type: none"> I can explain what an algorithm is I know that computers need precise instructions 	<ul style="list-style-type: none"> I can write an algorithm for a task I do regularly I can debug my algorithm and test it I can evaluate the efficiency of an algorithm 	<ul style="list-style-type: none"> I can plan more complex algorithms using a flowchart I can write an algorithm for a task using loops and selections



		I can follow instruction	<p>digital devices such as programs apps, computers.</p> <ul style="list-style-type: none"> I understand algorithms run in order (From start to finish) I can sequence a set of instructions I can orally describe an algorithm (Series of instructions) for a given task <p>I can predict a change when I change apart of my algorithm</p>	<ul style="list-style-type: none"> I can record a simple algorithm using symbols I can show care position to avoid errors <p>I can use terminology of loops and sections, when discussing algorithm</p>	<ul style="list-style-type: none"> I can record and more complex algorithm using flowchart I can show care and precision to avoid errors <p>I can use some terminology of loops and selections when discussing an algorithm</p>	<ul style="list-style-type: none"> I can debug my algorithms and test it I can discuss, sorts and search algorithms <p>I can evaluate the efficiency of an algorithm</p>
Programming	Guiding other by giving step by step instructions		<ul style="list-style-type: none"> I can press the button to make the floor robot move I can program a floor robot to move to a specific space I can find an incorrect instruction in the program I can understand programs run in order (from start to finish) I can sequence sets of instructions I can predict changes when I change part of the program. <p>I can control and on-screen character using simple directions or arrows keys</p>	<ul style="list-style-type: none"> I can explain that users can write their own programs I can explain the computers only do what someone has told them to do I can create a simple program I can debug simple programs <p>I can run, check and change programs</p>	<ul style="list-style-type: none"> I can explain how programs runs sequentially I can discuss that are programmes are based on its code I can break down the problem into smaller steps I can plan what is needed to be written to each stage I can write a simple computer program containing a loop to repeat instruction <p>I can debug a simple program after testing it</p>	<ul style="list-style-type: none"> I can understand that a computers programs run sequentially I can discuss what a programs does based on its code I can break down a problem into smaller steps I can plan what's needed to be written to each stage I can write a computer program containing a loop, Conditional and variables <p>I can do better program after testing</p>
Searching	Show awareness that information can be found on the internet	Show awareness that information can be found on the internet	Show awareness that information can be found on the internet from different sources.	Show awareness that information can be found on the internet from different sources and in different forms. (Videos, music, newspaper articles, blogs, advertisements	Show awareness that information can be found on the internet from different sources and in different forms. (Videos, music, newspaper articles, blogs, advertisements	<ul style="list-style-type: none"> I can explain how search engines use keywords I can explain that some results are aid of a high-ranking I can explain that search engines are admirable to choose the best result



				<p>I can understand where to search safety on the internet (Kidde)</p> <p>I can explain how search engines use keywords</p>	<p>I can explain how search engines use keywords</p>	<ul style="list-style-type: none"> I understand that not all of the things on the Internet can be found by search engines <p>I can suggest reasons why a website ranks as a top result</p>
<p>Key vocabulary</p>	<p>Understand and use vocabulary such as :</p> <p>Phone, I pad, tablet, instructions, screen, internet, recording,</p> <p>Let's see what happened next? What happens when?</p>	<p>Understand and use vocabulary such as :</p> <p>Technology, Computer, Ipad, play, fast, forward, skip, record, left right back control program, internet app</p>	<p>Understand and use vocabulary such as :</p> <p>Algorithm, Scratch, Programme, Action, Input, Storage, Consequence</p>	<p>Understand and use vocabulary such as :</p> <p>De-bug, store, tablet, keyboard, shift , space bar delete caps lock return algorithm, program, keys, home, internet, safe, -safety, personal information, data, protect, Internet</p>	<p>Understand and use vocabulary such as : draw, object, shape, line, line colour, fill colour, group, ungroup, font, size, text box, format, image, wrap text, plan, link, image, object, link, hyperlink, minimise, restore, size, move, screen, split, create, organise, file, folder, close, exit, search, print, password, screenshot, snipping tool, shift, undo, redo, menu, dictionary, highlight, cursor, toolbar, spellcheck.</p>	<p>Understand and use vocabulary such as : decompose, decomposing, logical sequence, flowchart, sprite, block, command, algorithm, answer, correct, errors, program, algorithm, instructions, commands, forward (fd), left (lt), right (rt), move, turn, clear screen (cs), variable.</p>