

Harlington and Sundon Academy Trust

School: Harlington Lower School Curriculum Progression for: Computing



Intent	We want our pupils to become digitally literate using various forms of technology across the curriculum. We want our pupils to be able to apply their computing skills across all areas of the curriculum. We want them to understand new digital systems and advance their computational thinking skills. We aim for our children to be equipped for the future work place in a world of technology.								
EYFS	<p>Children should come to Year 1 with the following skills and knowledge.</p> <p>Personal. Social and Emotional Development</p> <ul style="list-style-type: none"> • Show resilience and perseverance in the face of a challenge. • Know and talk about the different factors that support their overall health and wellbeing: -sensible amounts of ‘screen time’. • Be confident to try new activities and show independence, resilience and perseverance in the face of challenge. (ELG) • Explain the reasons for rules, know right from wrong and try to behave accordingly. (ELG) <p>Physical Development</p> <ul style="list-style-type: none"> • Develop their small motor skills so that they can use a range of tools competently, safely and confidently <p>Expressive Arts and Design</p> <ul style="list-style-type: none"> • Explore, use and refine a variety of artistic effects to express their ideas and feelings. • Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. (ELG) 								
	Autumn			Spring			Summer		
Year 1									
Unit	1.1 Online Safety	1.2 Grouping and sorting	1.3 Pictograms	1.4 Lego Builders	1.5 Maze Explorers	1.6 Animated Story Books	1.7 Coding	1.8 Spreadsheets	1.9 Technology outside school
Vocabulary	Avatar Button File Name Icon Log in Log out Menu My Work Area Private Password	Sort Criteria group	Collect Data Compare Data Pictogram Record Results Title	Algorithm Code Computer Debugging Instructions Program	Algorithm Challenge Command Direction Instruction Left and Right Route Undo Unit	Animation Background Clip-art Gallery E-book Edit Font Sound Sound Effect Text	Action Algorithm Background Code Coding Command Debug/ Debugging Event Execute Instruction Object Output Plan Programmer Properties Run	Button Calculations Cell Clip-art Column Count tool Data Delete Image Lock cell Move cell Row Speak tool Spreadsheet Value	Computer Technology

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<p>Skills</p>	<p>To log in safely. To learn how to open, save and print. To learn how to find saved work. To understand the importance of logging out.</p>	<p>To sort items using a range of criteria. To sort items on the computer using the 'Grouping' activities in Purple Mash.</p>	<p>To collect data and present data in picture format. To contribute to a class pictogram. To use a pictogram to record the results of an experiment.</p>	<p>To compare the effects of adhering strictly to instructions to completing tasks without complete instructions. To follow and create simple instructions on the computer. To consider how the order of instructions affects the result.</p>	<p>To understand the functionality of the direction keys. To understand how to create and debug a set of instructions (algorithm). To use the additional direction keys as part of an algorithm. To understand how to change and extend the algorithm list. To create a longer algorithm for an activity. To set challenges for peers. To access peer challenges set by the teacher as 2Dos.</p>	<p>To introduce e-books and the 2Create a Story tool. To add animation to a story. To add sound to a story, including voice recording and music the children have composed. To work on a more complex story, including adding backgrounds and copying and pasting pages. To share e-books on a class display board.</p>	<p>To understand what instructions are and predict what might happen when they are followed. To use code to make a computer program. To understand what object and actions are. To understand what an event is. To use an event to control an object. To begin to understand how code executes when a program is run. To understand what backgrounds and objects are. To plan and make a computer program.</p>	<p>To know what a spreadsheet program looks like. To locate 2Calculate in Purple Mash. To enter data into spreadsheet cells. To use 2Calculate image tools to add clipart to cells. To use 2Calculate control tools: lock, move cell, speak and count.</p>	<p>To walk around the local community and find examples of where technology is used. To record examples of technology outside school.</p>
<p>Knowledge</p>	<p>To understand the importance of keeping information safe.</p>	<p>To know how to organise data.</p>	<p>To understand that data can be collected and presented in the form of a pictogram.</p>	<p>To know that an algorithms is a set of instructions. To know computer programs turn</p>	<p>To know that an algorithms is a set of instructions. To know computer programs turn</p>	<p>To know that an animated story is a story where the images can move in a variety of ways. To know that e-</p>	<p>To know that an algorithms is a set of instructions. To know computer programs turn</p>	<p>To understand what a spreadsheet is. To know spreadsheet vocabulary. To begin using the</p>	<p>To know that technology is all around us.</p>

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				<p>algorithms into codes. To know that programs follow precise and unambiguous instructions.</p>	<p>algorithms into codes. To know that programs follow precise and unambiguous instructions. To know if something does not work it is because the code is incorrect.</p>	<p>books include animation pages, sounds, narration and music.</p>	<p>algorithms into codes. To know that programs follow precise and unambiguous instructions. To know if something does not work it is because the code is incorrect.</p>	<p>tools in a spreadsheet.</p>	
Visit/Special Occasions				<p>Safer Internet Day</p>					

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Year 2									
Unit	2.1 Coding	2.2 Online Safety	2.3 Spreadsheets	2.4 Questioning	2.5 Effective Searching	2.6 Creating Pictures	2.6 Creating Pictures	2.7 Making Music	2.8 Presenting Ideas
Vocabulary	Action Algorithm Background Bug Button Click events Collision detection Command Debug / Debugging Event Execute Implement Instructions Interaction Interval Object Output Properties Run	Attachment Digital footprint Email Filter Internet Personal information Private information Search Secure Sharing	Block Graph Cell Column Copy Count tool Data Drag Equals Equals tool Label Row Speak tool Table Total	Binary Tree Data Database Field Pictogram Question Record Search Sort	Digital Footprint Domain Internet Network Search Engine Web Address Web Page World Wide Web Web Site	Art Fill Impressionism Palette Pointillism Style Surrealism	Art Fill Impressionism Palette Pointillism Style Surrealism	Beat Compose Note Tune Sound Effect Soundtrack Speed Tempo Volume	E-book Fact file Fiction Mind map Node Non-fiction Presentation Quiz
Skills	To understand what an algorithm is. To create a computer program using an algorithm. To create a program using a given design. To understand the collision detection event. To understand that algorithms follow a	To know how to refine searches using the Search tool. To use digital technology to share work on Purple Mash to communicate and connect with others locally. To have some knowledge and understanding about sharing more globally	To use 2Calculate image, lock, move cell, speak and count tools to make a counting machine. To learn how to copy and paste in 2Calculate. To use the totalling tools. To use a spreadsheet for money	To learn about data handling tools that can give more information than pictograms. To use yes/no questions to separate information. To construct a binary tree to identify items. To use 2Question (a binary tree	To understand the terminology associated with searching. To gain a better understanding of searching on the Internet. To create a leaflet to help someone search for information on the Internet.	To learn the functions of the 2Paint a Picture tool. To learn about and recreate the Impressionist style of art (Monet, Degas, Renoir). To recreate Pointillist art and look at the work of pointillist artists such as Seurat. To learn about	To learn the functions of the 2Paint a Picture tool. To learn about and recreate the Impressionist style of art (Monet, Degas, Renoir). To recreate Pointillist art and look at the work of pointillist artists such as Seurat. To learn about	To make music digitally using 2Sequence. To explore, edit and combine sounds using 2Sequence. To edit and refine composed music. To think about how music can be used to express feelings and create tunes	To explore how a story can be presented in different ways. To make a quiz about a story or class topic. To make a fact file on a non-fiction topic. To make a presentation to the class.

	<p>sequence. To design an algorithm that follows a timed sequence. To understand that different objects have different properties. To understand what different events do in code. To understand the function of buttons in a program. To understand and debug simple programs</p>	<p>on the Internet. To introduce Email as a communication tool using 2Respond simulations. To understand how we should talk to others in an online situation. To open and send simple online communications in the form of emails. To understand that information put online leaves a digital footprint or trail. To identify the steps that can be taken to keep personal data and hardware secure.</p>	<p>calculations. To use the 2Calculate equals tool to check calculations. To use 2Calculate to collect data and produce a graph.</p>	<p>database) to answer questions. To use a database to answer more complex search questions. To use the Search tool to find information.</p>		<p>the work of Piet Mondrian and recreate the style using the lines template. To learn about the work of William Morris and recreate the style using the patterns template. To explore surrealism and eCollage.</p>	<p>the work of Piet Mondrian and recreate the style using the lines template. To learn about the work of William Morris and recreate the style using the patterns template. To explore surrealism and eCollage.</p>	<p>which depict feelings. To upload a sound from a bank of sounds into the Sounds section. To record and upload environmental sounds into Purple Mash. To use these sounds to create tunes in 2Sequence.</p>	
Knowledge	<p>To explain what an algorithm is. To explain what will happen in a program. To understand that algorithms follow a sequence. To understand how to debug a program.</p>	<p>To know what a search engine is. To share effective searching knowledge. To know the consequences of not searching online in a safe way. To know how to</p>	<p>To know how to organise data. To develop familiarity of using the tools in a spreadsheet.</p>	<p>To understand different ways of collecting and presenting data. To know that a database can answer complex questions.</p>	<p>To know what a search engine is. To know the consequences of not searching online in a safe way. To share effective searching knowledge.</p>	<p>To learn about different artists. To re-create the work of artists using a computer.</p>	<p>To learn about different artists. To re-create the work of artists using a computer.</p>	<p>To know a computer can be used to create/edit sounds/music.</p>	<p>To use a computer to present stories/ideas in different ways.</p>

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		send/receive email. To know how to report online. To understand what your digital footprint is.							
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Year 3									
Unit	3.1 Coding	3.2 Online Safety	3.3 Spreadsheets	3.4 Touch Typing	3.5 Emailing	3.6 Branching databases	3.7 Simulations	3.8 Graphing	3.9 Presenting
Vocabulary	Background Bug Button Click Event Code Collision Detection Event Command Debug/Debugging Event Flowchart Implement Input Interval Nesting Object Predict Properties Repeat Run Scene Sequence Test Timer Turtle Object	Appropriate Blog Inappropriate Password Personal Information Internet Spoof Reputable source Permission Reliable Source Verify Vlog Website	Advance mode Bar graph Equals Data Cell Address Rows Columns Less Than More Than < > = Pie Chart Quiz Tool Spin Tool Spreadsheet Table	Posture Keys Space bar Typing	Address book Attachment BCC CC Communication Compose Email Inbox Password Personal Information Save to draft Trusted Contact	Binary Tree Branching database Data Database Debugging	Analysis Decision Evaluation Modelling Simulation	Axis Chart Column Data Graph Investigation Row Sorting Tally Chart	Animation Border Properties Font formatting Layer Media Presentation Slide Slideshow Text box Transition WordArt
Skills	To understand what a flowchart is and how flowcharts are used in computer programming. To understand that there are different types of timers and select the right	To know what makes a safe password. To learn methods for keeping passwords safe. To understand how the Internet can be used in effective communication.	To use the symbols more than, less than and equal to, to compare values. To use 2Calculate to collect data and produce a variety of graphs. To use the advanced	To introduce typing terminology. To understand the correct way to sit at the keyboard. To learn how to use the home, top and bottom row keys. To practise typing	To think about different methods of communication. To open and respond to an email using an address book. To learn how to use email safely. To add an attachment	To sort objects using just 'yes' or 'no' questions. To complete a branching database using 2Question. To create a branching database of the	To consider what simulations are. To explore a simulation. To analyse and evaluate a simulation.	To enter data into a graph and answer questions. To solve an investigation and present the results in graphic form.	To understand the uses of PowerPoint. To create a page in a presentation. To add media to a presentation. To add animations to a presentation. To add timings

	type for purpose. To understand how to use the repeat command. To understand the importance of nesting. To design and create an interactive scene.	To understand how a blog can be used to communicate with a wider audience. To consider the truth of the content of websites. To learn about the meaning of age restrictions symbols on digital media and devices.	mode of 2Calculate to learn about cell references.	with the left and right hand.	to an email. To explore a simulated email scenario.	children's choice.			to a presentation. To use the skills learnt to design and create an engaging presentation.
Knowledge	To know how to turn an algorithm into a code. To know a variable stores information while a program is running. To know 'if' statements, repetition and variables.	To know what a secure, strong password is. To explain the importance of having a secure password. To know not to share passwords with others. To explain the negative consequences of not keeping passwords safe. To understand the importance of keeping safe online. To know how to report online.	To collect data and present it as a graph. To learn about cell references.	To know how to touch type.	To understand the importance of keeping safe online. To know the importance of their conduct when communicating online. To know how to report online.	To know that you can use different software for different tasks.	To understand the difference between a simulation and real life.	To collect, analyse, evaluate and present data. To choose the most appropriate graph for their data.	To understand the different elements in PowerPoint. To use PowerPoint to create a presentation
Visit/Special Occasions				Safer Internet Day					

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Year 4									
Unit	4.1 Coding	4.2 Online Safety	4.3 Spreadsheets	4.4 Writing for different audiences	4.5 Logo	4.6 Animation	4.7 Effective Searching	4.8 Hardware investigators	4.9 Making Music
Vocabulary	Action Alert Algorithm Background Button Code blocks Command Debug/Debugging Design Execute Event Flowchart 'If' Statement 'If/Else' Statement Implement Input Nest Object Predict Prompt Repeat Repeat until Run	AdFly Attachment Citation Collaborate Cookies Copyright Digital footprint Malware Phishing Plagiarism Ransomware SMART rules Spam Virus Watermark	Average Budget Chart Column Data Decimal place Equals tool Format Cell Formula Formula Wizard Line graph Percentage Place value Row Spin Tool Spreadsheet Timer	Campaign Format Font Genre Opinion Reporter Viewpoint	Debugging Grid LOGO LOGO Commands (e.g FD, BK, RT, LT) Multi Line Mode Pen Down Pen Up Prediction Procedure Repeat Run Speed SETPC SETPS	Animation FPS (Frames Per Second) Frame Onion Skinning Pause Stop motion	Balanced View Easter eggs Internet Key words Reliability Results page Search engine	Components CPU Graphics Card Hard Drive Input Motherboard Network Card Output Peripherals RAM Software	BPM Dynamics Harmonious Melody Pitch Pulse Rhythm Tempo Texture Synths
Skills	To begin to understand selection in computer programming. To understand how an IF statement works. To understand how to use co-ordinates in	To understand how children can protect themselves from online identity theft. To understand that information put online leaves a digital footprint or trail and that	To format cells as currency, percentage, decimal to different decimal places or fraction. To use the formula wizard to calculate averages. To combine tools	To explore how font size and style can affect the impact of a text. To use a simulated scenario to produce a news report. To use a simulated scenario to write for a	To learn the structure of the coding language of Logo. To input simple instructions in Logo. Using 2Logo to create letter shapes. To use the Repeat function in Logo to	To discuss what makes a good animated film or cartoon. To learn how animations are created by hand. To find out how animation can be created in a similar way	To locate information on the search results page. To use search effectively to find out information. To assess whether an information source is true and reliable.	To understand the different parts that make up a computer. To recall the different parts that make up a computer.	To identify and discuss the main elements of music. To understand and experiment with rhythm and tempo. To create a melodic phrase. To electronically



	<p>computer programming. To understand the 'repeat until' command. To understand how an IF/ELSE statement works. To understand what a variable is in programming. To use a number variable. To create a playable game.</p>	<p>this can aid identity theft. To identify the risks and benefits of installing software including apps. To understand that copying the work of others and presenting it as their own is called 'plagiarism' and to consider the consequences of plagiarism. To identify appropriate behaviour when participating or contributing to collaborative online projects for learning. To identify the positive and negative influences of technology on health and the environment. To understand the importance of balancing game and screen time with other parts of their lives.</p>	<p>to make spreadsheet activities such as timed times tables tests. To use a spreadsheet to model a real-life situation. To add a formula to a cell to automatically make a calculation in that cell.</p>	<p>community campaign.</p>	<p>create shapes. To use and build procedures in Logo</p>	<p>using the computer. To learn about onion skinning in animation. To add backgrounds and sounds to animations. To be introduced to 'stop motion' animation. To share animation on the class display board and by blogging.</p>			<p>compose a piece of music.</p>
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<p>Knowledge</p>	<p>To know how to change variables in programming. To identify errors in code.</p>	<p>To know what online technologies are. To know what online services are. To know about the right to privacy on and offline. <i>For consolidation: To have a good understanding of online safety rules. To know immediate strategies to keep safe online.</i></p>	<p>To use spreadsheets for real-life situations.</p>	<p>To understand the different ways information can be presented depending on the audience.</p>	<p>To understand the language of Logo. To use Logo programming to create procedures. To identify errors in Logo programming.</p>	<p>To create stop-frame animations.</p>	<p>To understand the purpose of a search engine and the main features of it. To understand the function, features, and layout of a search engine. To know what makes a webpage credible.</p>	<p>To understand that network and communication components are in many devices.</p>	<p>To understand that you can create music electronically.</p>
<p>Visit/Special Occasions</p>				<p>Safer Internet Day</p>					