

# Holmesdale Infant School- Computing Progression

Early Years	
<ul style="list-style-type: none"> <li>Computing is no longer a discreet focus within Early Years but areas of thread throughout the curriculum especially online safety</li> </ul>	
<b>Online Safety</b>	Recognise the impact of good choices and consequences of wrong ones. Understand that they must ask an adult whether they can use a game or app. Know that information can be retrieved from computers and can tell an adult if what they see makes them feel worried. Recognise who they can ask for help and know when they need help. Understand that they need to share equipment and take turns.
<b>Connecting systems and networks</b>	Role play using technology. Help adults operate equipment around school. Operate simple equipment independently. Begin to identify technology in their environment.
<b>Creating Media</b>	Use age appropriate websites. Use a mouse to arrange objects on a screen. With support, use a keyboard for simple typing. Interact and explore their environment using different equipment
<b>Programming</b>	Explore a variety of controlled and programmable devices. Explore simple simulations, finding out what happened.
<b>Data and information</b>	Begin to sort, classify or group various objects progressing from practical activities to the use of ICT e.g., practically sorting fruit into colours, types or shapes, and then on-screen. Use ICT to sort and sequence objects on a screen or interactive whiteboard.

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## Key Stage One

### KS1 Computing National Curriculum

Pupils should be taught to:

- 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.

	Year 1	Year 2
Online Safety	Self-image and identity Online relationships Online reputation Online bullying Managing online information Health, well-being and lifestyle Privacy and security Copyright and ownership	Self-image and identity Online relationships Online reputation Online bullying Managing online information Health, well-being and lifestyle Privacy and security Copyright and ownership
	<u>Key vocab</u> safe, meet, accept, reliable, tell, online, trusted adult, information, safety, personal, key, question, tell, share, stranger, danger, internet	<u>Key vocab</u> safe, meet, accept, reliable, tell, online, trusted adult, information, safety, personal, key, question, tell, share, stranger, danger, internet

Connecting systems and networks	<b>What technology do we find in school and how do we use it responsibly?</b>	<b>How can IT improve our world in school and beyond?</b>
	<u>Technology around us</u> -To identify technology -To identify a computer and its main parts -To use a mouse in different ways -To use a keyboard to type on a computer -To use the keyboard to edit text -To create rules for using technology responsibly	<u>Information technology around us</u> -To recognise the uses and features of information technology -To identify the uses of information technology in the school -To identify information technology beyond school -To explain how information technology helps us -To explain how to use information technology safely -To recognise that choices are made when using information technology
	<u>Key vocab</u> filter, Google, search engine, image, keyboard, email, internet, subject, address, communicate, sender, safe, secure.	<u>Key vocab</u> filter, Google, search engine, image, keyboard, email, internet, subject, address, communicate, sender, safe, secure.

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<b>Creating Media</b>	<p><b>How can we create art digitally and how does it compare with non-digital art?</b>  <b>How can we use a computer to create text and how is this different from non-digital text?</b></p>	<p><b>How can you change photographs for different purposes?</b>  <b>How can we use a computer to explore rhythms and melodies?</b></p>
	<p><u>Digital Painting</u>            -To describe what different freehand tools do            -To use the shape tool and the line tools            -To make careful choices when painting a digital picture            -To explain why I chose the tools I used            -To use a computer on my own to paint a picture            -To compare painting a picture on a computer and on paper</p> <p><u>Digital writing</u>            -To use a computer to write            -To add and remove text on a computer            -To identify that the look of text can be changed on a computer            -To make careful choices when changing text            -To explain why I used the tools that I chose            -To compare typing on a computer to writing on paper</p>	<p><u>Digital photography</u>            -To use a digital device to take a photograph            -To make choices when taking a photograph            -To describe what makes a good photograph            -To decide how photographs can be improved            -To use tools to change an image            -To recognise that photos can be changed</p> <p><u>Digital music</u>            -To say how music can make us feel            -To identify that there are patterns in music            -To experiment with sound using a computer            -To use a computer to create a musical pattern            -To create music for a purpose            -To review and refine our computer work</p>
	<p><u>Key vocab</u>            paint, colour, brush, tools, settings, undo, redo, text, image, size, poster, launch, application, software, window, minimise, restore, size, move, screen, close, click, drag, log on, log off, keyboards, keys, mouse, click, button, double click, drag, present, commands, add sound</p>	<p><u>Key vocab</u>            paint, colour, brush, tools, settings, undo, redo, text, image, size, poster, launch, application, software, window, minimise, restore, size, move, screen, close, click, drag, log on, log off, keyboards, keys, mouse, click, button, double click, drag, present, commands, add sound.</p>
	<p><b>How can we write an algorithm to make a floor robot move?</b>  <b>How can we program a character to tell a story?</b></p>	<p><b>How can we create and debug programs?</b>  <b>How can we design a program to create an interactive quiz?</b></p>
<b>Programming</b>	<p><u>Moving a robot</u>            -To explain what a given command will do            -To act out a given word            -To combine forwards and backwards commands to make a sequence            -To combine four direction commands to make sequences            -To plan a simple program            -To find more than one solution to a problem</p> <p><u>Programming animations</u>            -To choose a command for a given purpose            -To show that a series of commands can be joined together            -To identify the effect of changing a value            -To explain that each sprite has its own instructions            -To design the parts of a project</p> <p>-To use my algorithm to create a program</p>	<p><u>Robot algorithms</u>            -To describe a series of instructions as a sequence            -To explain what happens when we change the order of instructions            -To use logical reasoning to predict the outcome of a program            -To explain that programming projects can have code and artwork            -To design an algorithm            -To create and debug a program that I have written</p> <p><u>Programming quizzes</u>            -To explain that a sequence of commands has a start            -To explain that a sequence of commands has an outcome            -To create a program using a given design            -To change a given design            -To create a program using my own design            -To decide how my project can be improved</p>

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	<u>Key vocab</u> algorithm, instruction, order, debug, program, turn, left, right, clockwise, anticlockwise, sequence, project	<u>Key vocab</u> algorithm, instruction, order, debug, program, turn, left, right, clockwise, anticlockwise, sequence, project
Data and information	<b>How can we sort and group objects?</b> <u>Grouping data</u> -To label objects -To identify that objects can be counted -To describe objects in different ways -To count objects with the same properties -To compare groups of objects -To answer questions about groups of objects	<b>How can we collect and organize data on a computer?</b> <u>Pictograms</u> -To recognise that we can count and compare objects using tally charts -To recognise that objects can be represented as pictures -To create a pictogram -To select objects by attribute and make comparisons -To recognise that people can be described by attributes -To explain that we can present information using a computer
	<u>Key vocab</u> Data, pictogram, information, grid, favourite, tally, chart, how many, total	<u>Key vocab</u> Data, pictogram, information, grid, favourite, tally, chart, how many, total, branching database, graph, axis, sort, flow diagram

Connecting systems and networks	<b>What devices have inputs, processes, and outputs?</b> <u>Connecting Computers</u> -To explain how digital devices function -To identify input and output devices -To recognise how digital devices can change the way we work -To explain how a computer network can be used to share information -To explore how digital devices can be connected -To recognise the physical components of a network	<b>What is the internet and why should we evaluate content?</b> <u>The internet</u> -To describe how networks physically connect to other networks -To recognise how networked devices make up the internet -To outline how websites can be shared via the World Wide Web (WWW) -To describe how content can be added and accessed on the World Wide Web (WWW) -To recognise how the content of the WWW is created by people -To evaluate the consequences of unreliable content
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Creating Media	<b>How can we use images to produce an animation?</b> <b>How can we create documents for a specific purpose?</b> <u>Stop frame animation</u> -To explain that animation is a sequence of drawings or photographs -To relate animated movement with a sequence of images -To plan an animation -To identify the need to work consistently and carefully -To review and improve an animation -To evaluate the impact of adding other media to an animation <u>Desktop Publishing</u> -To recognise how text and images convey information -To recognise that text and layout can be edited -To choose appropriate page settings -To add content to a desktop publishing publication -To consider how different layouts can suit different purposes -To consider the benefits of desktop publishing	<b>How can we capture and edit audio produce a podcast?</b> <b>How can we manipulate images to fulfil a purpose?</b> <u>Audio Production</u> -To identify that sound can be recorded -To explain that audio recordings can be edited -To recognise the different parts of creating a podcast project -To apply audio editing skills independently -To combine audio to enhance my podcast project -To evaluate the effective use of audio <u>Photo editing</u> -To explain that the composition of digital images can be changed -To explain that colours can be changed in digital images -To explain how cloning can be used in photo editing -To explain that images can be combined -To combine images for a purpose -To evaluate how changes can improve an image

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Programming	<p><b>How can we use programming language to make music? How can we write programs for a sequence of actions?</b></p>	<p><b>How can we use programming language for controlled loops when drawing shapes? How can we create infinite loops using block-based programming language?</b></p>
	<p><u>Sequencing Sounds</u> -To explore a new programming environment -To identify that commands have an outcome -To explain that a program has a start -To recognise that a sequence of commands can have an order -To change the appearance of my project -To create a project from a task description <u>Events and actions in programs</u> -To explain how a sprite moves in an existing project -To create a program to move a sprite in four directions -To adapt a program to a new context -To develop my program by adding features -To identify and fix bugs in a program -To design and create a maze-based challenge</p>	<p><u>Repetition in shapes</u> -To identify that accuracy in programming is important -To create a program in a text-based language -To explain what 'repeat' means -To modify a count-controlled loop to produce a given outcome -To decompose a task into small steps -To create a program that uses count-controlled loops to produce a given outcome <u>Repetition in games</u> -To develop the use of count-controlled loops in a different programming environment -To explain that in programming there are infinite loops and count controlled loops -To develop a design that includes two or more loops which run at the same time -To modify an infinite loop in a given program -To design a project that includes repetition -To create a project that includes repetition</p>
	<p><u>Key vocab</u> 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>	<p><u>Key vocab</u> 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>
Data and information	<p><b>How can we use a branching database to group objects?</b></p> <p><u>Branching databases</u> -To create questions with yes/no answers -To identify the attributes needed to collect data about an object -To create a branching database -To explain why it is helpful for a database to be well structured -To plan the structure of a branching database -To independently create an identification tool</p>	<p><b>How can we collect data over time and why is it useful?</b></p> <p><u>Data logging</u> -To explain that data gathered over time can be used to answer questions -To use a digital device to collect data automatically -To explain that a data logger collects 'data points' from sensors over time -To recognise how a computer can help us analyse data -To identify the data needed to answer questions "-To use data from sensors to answer questions</p>
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