



## HAYES MEADOW PRIMARY SCHOOL COMPUTING KNOWLEDGE AND SKILLS



### EARLY YEARS

Rec	Technology around us	Creating media – Digital drawing	Creating media – Digital writing	Data and information – Grouping data	Programming A – Moving a robot	Internet
	<p>To identify technology To operate simple forms of technology, such as a CD player, remote control.</p> <p>To show interest in technological toys with moving parts?</p> <p>To create rules for using technology responsibly</p>	<p>To interact with age-appropriate computer software on different devices.</p> <p>To create pictures or video, such as using a camera or device to take a video or draw a picture.</p>	<p>To interact with age-appropriate computer software on different devices.</p> <p>To develop their digital literacy skills effectively using a range of programmes.</p>	<p>To identify that objects can be counted.</p> <p>To describe objects in different ways</p> <p>To compare groups of objects To answer questions about groups of objects</p>	<p>To be able to complete a simple program on a computer or electronic device.</p> <p>To operate a range of simple toys to achieve different effects.</p> <p>To combine forwards and backwards commands to make a sequence</p>	<p>To understand that retrieving information from the internet is safer with adult supervision.</p> <p>To understand that they need to be safe when using technology.</p>



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### KEY STAGE ONE

Year 1	Computing systems and networks – Technology around us	Creating media – Digital painting	Creating media – Digital writing	Data and information – Grouping data	Programming A – Moving a robot	Programming B – Introduction to animation
	<p>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</p>	<p>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</p>	<p>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</p>	<p>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</p>	<p>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</p>	<p>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>

		To compare painting a picture on a computer and on paper	To compare typing on a computer to writing on paper		To find more than one solution to a problem	To use my algorithm to create a program
<b>Year 2</b>	Computing systems and networks – IT around us	Creating media – Digital photography	Creating media – Making music	Data and information – Pictograms	Programming A – Robot algorithms	Programming B – An introduction to quizzes
	<p>To recognise the uses and features of information technology</p> <p>To identify the uses of information technology in the school</p> <p>To identify information technology beyond school</p> <p>To explain how information technology helps us</p> <p>To explain how to use information technology safely</p> <p>To recognise that choices are made when using information technology</p>	<p>To use a digital device to take a photograph</p> <p>To make choices when taking a photograph</p> <p>To describe what makes a good photograph</p> <p>To decide how photographs can be improved</p> <p>To use tools to change an image</p> <p>To recognise that photos can be changed</p>	<p>To say how music can make us feel</p> <p>To identify that there are patterns in music</p> <p>To show how music is made from a series of notes</p> <p>To show how music is made from a series of notes</p> <p>To create music for a purpose</p> <p>To review and refine our computer work</p>	<p>To recognise that we can count and compare objects using tally charts</p> <p>To recognise that objects can be represented as pictures</p> <p>To create a pictogram</p> <p>To select objects by attribute and make comparisons</p> <p>To recognise that people can be described by attributes</p> <p>To explain that we can present information using a computer</p>	<p>To describe a series of instructions as a sequence</p> <p>To explain what happens when we change the order of instructions</p> <p>To use logical reasoning to predict the outcome of a program (series of commands)</p> <p>To explain that programming projects can have code and artwork</p> <p>To design an algorithm</p> <p>To create and debug a program that I have written</p>	<p>To explain that a sequence of commands has a start</p> <p>To explain that a sequence of commands has an outcome</p> <p>To create a program using a given design</p> <p>To change a given design</p> <p>To create a program using my own design</p> <p>To decide how my project can be improved</p>



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**LOWER KEY STAGE TWO**



<b>Year 3</b>	Computing systems and networks – Connecting computers	Creating media – Animation	Programming A – Sequence in music	Data and information – Branching databases	Creating media – Desktop publishing	Programming B – Events and actions
	<p>To explain how digital devices function</p> <p>To identify input and output devices</p> <p>To recognise how digital devices can change the way we work</p> <p>To explain how a computer network can be used to share information</p> <p>To explore how digital devices can be connected</p>	<p>To explain that animation is a sequence of drawings or photographs</p> <p>To relate animated movement with a sequence of images</p> <p>To plan an animation</p> <p>To identify the need to work consistently and carefully</p> <p>To review and improve an animation</p>	<p>To explore a new programming environment</p> <p>To identify that commands have an outcome</p> <p>To explain that a program has a start</p> <p>To recognise that a sequence of commands can have an order</p> <p>To change the appearance of my project</p> <p>To create a project from a task description</p>	<p>To create questions with yes/no answers</p> <p>To identify the object attributes needed to collect relevant data</p> <p>To create a branching database</p> <p>To explain why it is helpful for a database to be well structured</p> <p>To identify objects using a branching database</p> <p>To compare the information shown in a pictogram with a branching database</p>	<p>To recognise how text and images convey information</p> <p>To recognise that text and layout can be edited</p> <p>To choose appropriate page settings</p> <p>To add content to a desktop publishing publication</p> <p>To consider how different layouts can suit different purposes</p> <p>To consider the benefits of desktop publishing</p>	<p>To explain how a sprite moves in an existing project</p> <p>To create a program to move a sprite in four directions</p> <p>To adapt a program to a new context</p> <p>To develop my program by adding features</p> <p>To identify and fix bugs in a program</p>

	To recognise the physical components of a network	To evaluate the impact of adding other media to an animation				To design and create a maze-based challenge
<b>Year 4</b>	Computing systems and networks – The Internet	Creating media – Audio editing	Programming A – Repetition in shapes	Data and information – Data logging	Creating media – Photo editing	Programming B – Repetition in games
	<p>To describe how networks physically connect to other networks</p> <p>To recognise how networked devices make up the internet</p> <p>To outline how websites can be shared via the World Wide Web (WWW)</p> <p>To describe how content can be added and accessed on the World Wide Web (WWW)</p> <p>To recognise how the content of the WWW is created by people</p> <p>To evaluate the consequences of unreliable content</p>	<p>To identify that sound can be digitally recorded</p> <p>To use a digital device to record sound</p> <p>To explain that a digital recording is stored as a file</p> <p>To explain that audio can be changed through editing</p> <p>To show that different types of audio can be combined and played together</p> <p>To evaluate editing choices made</p>	<p>To identify that accuracy in programming is important</p> <p>To create a program in a text-based language</p> <p>To explain what 'repeat' means</p> <p>To modify a count-controlled loop to produce a given outcome</p> <p>To decompose a task into small steps</p> <p>To create a program that uses count-controlled loops to produce a given outcome</p>	<p>To explain that data gathered over time can be used to answer questions</p> <p>To use a digital device to collect data automatically</p> <p>To explain that a data logger collects 'data points' from sensors over time</p> <p>To use data collected over a long duration to find information</p> <p>To identify the data needed to answer questions</p> <p>To use collected data to answer questions</p>	<p>To explain that digital images can be changed</p> <p>To change the composition of an image</p> <p>To describe how images can be changed for different uses</p> <p>To make good choices when selecting different tools</p> <p>To recognise that not all images are real</p> <p>To evaluate how changes can improve an image</p>	<p>To develop the use of count-controlled loops in a different programming environment</p> <p>To explain that in programming there are infinite loops and count controlled loops</p> <p>To develop a design that includes two or more loops which run at the same time</p> <p>To modify an infinite loop in a given program</p> <p>To design a project that includes repetition</p> <p>To create a project that includes repetition</p>

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**UPPER KEY STAGE TWO**



<b>Year 5</b>	Computing systems and networks – Sharing information	Creating media – Video editing	Programming A – Selection in physical computing	Data and information – Flat-file databases	Creating media – Vector drawing	Programming B – Selection in quizzes
	<p>To explain that computers can be connected together to form systems</p> <p>To recognise the role of computer systems in our lives</p> <p>To recognise how information is transferred over the internet</p> <p>To explain how sharing information online lets</p>	<p>To explain what makes a video effective</p> <p>To identify digital devices that can record video</p> <p>To capture video using a range of techniques</p> <p>To create a storyboard</p> <p>To identify that video can be improved through reshooting and editing</p>	<p>To control a simple circuit connected to a computer</p> <p>To write a program that includes count-controlled loops</p> <p>To explain that a loop can stop when a condition is met</p> <p>To explain that a loop can be used to repeatedly check whether a condition has been met</p>	<p>To use a form to record information</p> <p>To compare paper and computer-based databases</p> <p>To outline how grouping and then sorting data allows us to answer questions</p> <p>To explain that tools can be used to select specific data</p> <p>To explain that computer programs can be used to compare data visually</p>	<p>To identify that drawing tools can be used to produce different outcomes</p> <p>To create a vector drawing by combining shapes</p> <p>To use tools to achieve a desired effect</p> <p>To recognise that vector drawings consist of layers</p> <p>To group objects to make them easier to work with</p>	<p>To explain how selection is used in computer programs</p> <p>To relate that a conditional statement connects a condition to an outcome</p> <p>To explain how selection directs the flow of a program</p> <p>To design a program which uses selection</p>

	<p>people in different places work together</p> <p>To contribute to a shared project online</p> <p>To evaluate different ways of working together online</p>	<p>To consider the impact of the choices made when making and sharing a video</p>	<p>To design a physical project that includes selection</p> <p>To create a program that controls a physical computing project</p>	<p>To apply my knowledge of a database to ask and answer real-world questions</p>	<p>To evaluate my vector drawing</p>	<p>To create a program which uses selection</p> <p>To evaluate my program</p>
<b>Year 6</b>	Computing systems and networks – Communication	Creating media – Web page creation	Programming A – Variables in games	Data and information – Spreadsheets	Creating media – 3D Modelling	Programming B – Sensing
	<p>To identify how to use a search engine</p> <p>To describe how search engines select results</p> <p>To explain how search results are ranked</p> <p>To recognise why the order of results is important, and to whom</p> <p>To recognise how we communicate using technology</p> <p>To evaluate different methods of online communication</p>	<p>To review an existing website and consider its structure</p> <p>To plan the features of a web page</p> <p>To consider the ownership and use of images (copyright)</p> <p>To recognise the need to preview pages</p> <p>To outline the need for a navigation path</p> <p>To recognise the implications of linking to content owned by other people</p>	<p>To define a ‘variable’ as something that is changeable</p> <p>To explain why a variable is used in a program</p> <p>To choose how to improve a game by using variables</p> <p>To design a project that builds on a given example</p> <p>To use my design to create a project</p> <p>To evaluate my project</p>	<p>To identify questions which can be answered using data</p> <p>To explain that objects can be described using data</p> <p>To explain that formulas can be used to produce calculated data</p> <p>To apply formulas to data, including duplicating</p> <p>To create a spreadsheet to plan an event</p> <p>To choose suitable ways to present data</p>	<p>To use a computer to create and manipulate three-dimensional (3D) digital objects</p> <p>To compare working digitally with 2D and 3D graphics</p> <p>To construct a digital 3D model of a physical object</p> <p>To identify that physical objects can be broken down into a collection of 3D shapes</p> <p>To design a digital model by combining 3D objects</p> <p>To develop and improve a digital 3D model</p>	<p>To create a program to run on a controllable device</p> <p>To explain that selection can control the flow of a program</p> <p>To update a variable with a user input</p> <p>To use an conditional statement to compare a variable to a value</p> <p>To design a project that uses inputs and outputs on a controllable device</p> <p>To develop a program to use inputs and outputs on a controllable device</p>