

Halling Primary school Computing Milestone Progression

Children need to be secure in the black Milestones before progressing to the purple.

Threshold Concepts		Milestones						
		Milestone 1 Year 1 and 2		Milestone 2 Year 3 and 4			Milestone 3 Year 5 and 6	
Connect (Computing systems and networks) This concept involves developing an understanding the use of digital devices	Technology Around Us	 Identify technology Identify a computer and its main parts Use a mouse in different ways Use a keyboard to type on a computer Use the keyboard to edit text Create rules for using technology responsibly To recognise the uses and features of information technology 	Connecting Computers		 Explain how digital devices function Identify input and output devices Recognise how digital devices can change the way we work Explain how a computer network can be used to share information Explore how digital devices can be connected Recognise the physical components of a network 	Systems & Searching	 Explain that computers can be connected together to form systems Recognise the role of computer systems in our lives Experiment with search engines Describe how search engines select results Explain how search results are ranked Recognise why the order of results is important, and to whom 	
and how to safely connect with others.	IT Around US	 Identify the uses of information technology in the school Identify information technology beyond school Explain how information technology helps us Explain how to use information technology safely Recognise that choices are made when using information technology 	The Internet		 Describe how networks physically connect to other networks Recognise how networked devices make up the internet Outline how websites can be shared via the World Wide Web (WWW) Describe how content can be added and accessed on the World Wide Web (WWW) Recognise how the content of the WWW is created by people Evaluate the consequences of unreliable content 	Communication & Collaboration	 Explain the importance of internet addresses Recognise how data is transferred across the internet Explain how sharing information online can help people to work together Evaluate different ways of working together online Recognise how we communicate using technology Evaluate different methods of online communication 	

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Concepts	Milestone 1	Milestone 2	Milestone 3					
	Year 1 and 2	Year 3 and 4	Year 5 and 6					
Code (Programming) This concept nvolves developing an understanding of nstructions, logic	 Explain what a given command will do 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 	 Explore a new programming environment Identify that commands have an outcome Explain that a program has a start Recognise that a sequence of commands can have an order Change the appearance of a project Create a project from a task description 	 Control a simple circuit connected to a computer Write a program that includes count-controlled loops Explain that a loop can stop when a condition is met Explain that a loop can be used to repeatedly check whether a condition has been met Design a physical project that includes selection Create a program that controls a physical computing project 					
and sequences.	 Describe a series of instructions as a sequence 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 Design an algorithm Create and debug a program that I have written 	 Identify that accuracy in programming is important Create a program in a text-based language Explain what 'repeat' means Modify a count-controlled loop to produce a given outcome Decompose a task into small steps Create a program that uses count-controlled loops to produce a given outcome 	 Define a 'variable' as something that is changeable Explain why a variable is used in a program Choose how to improve a game by using variables Design a project that builds on a given example Use a design to create a project Evaluate a project 					
	 Choose a command for a given purpose 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 Design the parts of a project Use an algorithm to create a program 	 Explain how a sprite moves in an existing project Create a program to move a sprite in four directions Adapt a program to a new context Develop a program by adding features Identify and fix bugs in a program Design and create a maze-based challenge 	 Explain how selection is used in computer programs Relate that a conditional statement connects a condition to an outcome Explain how selection directs the flow of a program Design a program which uses selection Create a program which uses selection Evaluate a program 					
	 Explain that a sequence of commands has a start Explain that a sequence of commands has an outcome Create a program using a given design Change a given design Create a program using my own design Decide how a project can be improved 	 Develop the use of count-controlled loops in a different programming environment Explain that in programming there are infinite loops and count controlled loops Develop a design that includes two or more loops which run at the same time Modify an infinite loop in a given program Design a project that includes repetition Create a project that includes repetition 	 Create a program to run on a controllable device Explain that selection can control the flow of a program Update a variable with a user input Use a conditional statement to compare a variable to a value Design a project that uses inputs and outputs on a controllable device Develop a program to use inputs and outputs on a controllable device 					

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Communicate Creating Media) This concept nvolves using apps o communicate one's ideas.	Digital Painting	 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 Use a computer on my own to paint a picture Compare painting a picture on a computer and on paper 	Stop-Frame Animation	 Explain that animation is a sequence of drawings or photographs Relate animated movement with a sequence of images Plan an animation Identify the need to work consistently and carefully Review and improve an animation Evaluate the impact of adding other media to an animation 	video Production	 Explain what makes a video effective Identify digital devices that can record video Capture video using a range of techniques Create a storyboard Identify that video can be improved through reshooting and editing Consider the impact of the choices made when making and sharing a video 		
	Digital Photography	 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 	Photo Editing	 Explain that the composition of digital images can be changed Explain that colours can be changed in digital images Explain how cloning can be used in photo editing Explain that images can be combined Combine images for a purpose Evaluate how changes can improve an image 	Web Page Creation	 Review an existing website and consider its structure Plan the features of a web page Consider the ownership and use of images (copyright) Recognise the need to preview pages Outline the need for a navigation path Recognise the implications of linking to content owned by other people 		
	Digital Writing	 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 	Desktop Publishing	 Recognise how text and images convey information Recognise that text and layout can be edited Choose appropriate page settings Add content to a desktop publishing publication Consider how different layouts can suit different purposes Consider the benefits of desktop publishing 	Introduction to Vector Graphics	 Identify that drawing tools can be used to produce different outcomes Create a vector drawing by combining shapes Use tools to achieve a desired effect Recognise that vector drawings consist of layers Group objects to make them easier to work with Apply what I have learned about vector drawings 		
	Digital Music	 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 	Audio Production	 Identify that sound can be recorded Explain that audio recordings can be edited Recognise the different parts of creating a podcast project Apply audio editing skills independently Combine audio to enhance my podcast project Evaluate the effective use of audio 	3D Modelling	 Recognise that you can work in three dimensions on a computer Identify that digital 3D objects can be modified Recognise that objects can be combined in a 3D model Create a 3D model for a given purpose Plan my own 3D model Create my own digital 3D model 		

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Collect (Data & Information) This concept involves developing an understanding of databases and their	Grouping Data	 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 	Branching Databases		 Create questions with yes/no answers Identify the attributes needed to collect data about an object Create a branching database Explain why it is helpful for a database to be well structured Plan the structure of a branching database Independently create an identification tool 	Flat-File Databases	 Use a form to record information Compare paper and computer-based databases Outline how you can answer questions by grouping and then sorting data Explain that tools can be used to select specific data Explain that computer programs can be used to compare data visually Use a real-world database to answer questions 		
uses.	Pictograms	 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 	Data Logging		 Explain that data gathered over time can be used to answer questions Use a digital device to collect data automatically Explain that a data logger collects 'data points' from sensors over time Recognise how a computer can help us analyse data Identify the data needed to answer questions Use data from sensors to answer questions 	Spreadsheets	 Create a data set in a spreadsheet Build a data set in a spreadsheet Explain that formulas can be used to produce calculated data Apply formulas to data Create a spreadsheet to plan an event Choose suitable ways to present data 		