

Computing Progression of Skills (Teach Computing)

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Information Technology	Computing systems and networks	<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>IT around us</u> - To recognise the uses and features of information technology - To identify information technology in the home - To identify information technology beyond school - To explain how information technology benefits us - To show how to use information technology safely - To recognise that choices are made when using information technology	<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	<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 - To describe how content can be added and accessed on the World Wide Web - To recognise how the content of the WWW is created by people - To evaluate the consequences of unreliable content	<u>Systems and searching</u> - To explain that computers can be connected together to form systems - To recognise the role of computer systems in our lives - To recognise how information is transferred over the internet - To explain how sharing information online lets people in different places work together - To contribute to a shared project online - To evaluate different ways of working together online	<u>Communication and collaboration</u> - To explain the importance of internet addresses - To explain how data is transferred across the internet - To explain how sharing information online can help people work together - To evaluate different ways of working together online - To recognise how we communicate using technology - To evaluate different methods of online communication

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Information Technology	Data and information	<u>Grouping Data</u>	<u>Pictograms</u>	<u>Branching databases</u>	<u>Data logging</u>	<u>Flat-file databases</u>	<u>Spreadsheets</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	- 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	- To create questions with yes/no answers - To create a branching database - To explain why it is helpful for a database to be well structured - To identify objects using a branching database - To identify the object attributes needed to collect relevant data - To compare the information shown in a pictogram with a branching database	- 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 use data collected over a long duration to find information - To identify the data needed to answer questions - To use collected data to answer questions	- To use a form to record information - To compare paper and computer-based databases - To apply my knowledge of a database to ask and answer real-world questions - To explain that tools can be used to select data to answer questions - To apply my knowledge of a database to ask and answer real-world questions - To apply my knowledge of a database to ask and answer real-world questions	- To create a data set in a spreadsheet - To build a data set in a spreadsheet - To explain that formulae should be used to produce calculated data - To apply formulae to data - To create a spreadsheet to plan an event - To choose suitable ways to present data

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	Programming	<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	<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 (series of commands) - To explain that programming projects can have code and artwork - To design an algorithm - To create and debug a program that I have written	<u>Sequencing sounds</u> - To explore a new programming environment - To identify that each sprite is controlled by the commands chosen - 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>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 program into parts - To create a program that uses count-controlled loops to produce a given outcome	<u>Selection in physical computing</u> - To control a simple circuit connected to a computer - To write a program that includes count-controlled loops - To explain that a loop can stop when a condition is met, e.g. number of times - To conclude that a loop can be used to repeatedly check whether a condition has been met - To design a physical project which includes selection - To create a controllable system which includes selection	<u>Variables in games</u> - To define a 'variable' as something that is changeable - To explain why a variable is used in a program - To choose how to improve a game by using variables - To design a project that builds on a given example - To use my design to create a project - To evaluate my project
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Computer Science	Programming	<u>Animation</u>	<u>Programming quizzes</u>	<u>Events and actions in programs</u>	<u>Repetition in games</u>	<u>Selection in quizzes</u>	<u>Sensing movement</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 - To use my algorithm to create a program	- 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 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 (given) challenge	- 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 which 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	- To explain how selection is used in computer programs - To relate that a conditional statement connects a condition to an outcome - To explain how selection directs the flow of a program - To design a program which uses selection - To create a program which uses selection - To evaluate my program	- To create a program to run on a controllable device - To explain that selection can control the flow of a program - To update the variable with a user input - To use a conditional statement to compare a variable to a value - To design a project that uses inputs and outputs on a controllable device - To develop a program to use inputs and outputs on a controllable device

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Digital Literacy	Creating Media	<u>Digital painting</u>	<u>Digital photography</u>	<u>Stop-frame animation</u>	<u>Photo editing</u>	<u>Video production</u>	<u>Webpage creation</u>
		- To describe what different freehand tools do - To use the shape tool and line tool - To make careful choices when painting a digital picture - To explain why I used the tools I did - To use a computer on my own to paint a picture	- To know what devices can be used to take photographs - To use a digital device to take 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 images can be changed	- 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	- To explain that digital images can be changed - To change the composition of an image - To describe how images can be changed for different uses - To make good choices when selecting different tools - To recognise that not all images are real - To evaluate how changes can improve an image	- To recognise video as moving pictures, which can include audio - To identify digital devices that can record video - To capture video using a digital device - To recognise the features of an effective video - To identify that video can be improved through reshooting and editing - To consider the impact of the choices made when making and sharing a video	- To review an existing website and consider its structure - To plan the features of a web page - To consider the ownership and use of images (copyright) - To recognise the need to preview pages - To outline the need for a navigation path - To recognise the implications of linking to content owned by other people

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Digital Literacy	Creating Media	<u>Digital writing</u>	<u>Digital music</u>	<u>Desktop publishing</u>	<u>Audio production</u>	<u>Introduction to vector graphics</u>	<u>3D modelling</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 writing on a computer with writing on paper	• To identify that there are patterns in music • To describe how music can be used in different ways • To show how music is made from a series of notes • To create music for a purpose • To review and refine our computer work	• 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	• To identify that sound can be digitally recorded • To use a digital device to record sound • To explain that a digital recording is stored as a file • To explain that audio can be changed through editing • To show that different types of audio can be combined and played together • To evaluate editing choices made	• To identify that drawing tools can be used to produce different outcomes • To create a vector drawing by combining shapes • To use tools to achieve a desired effect • To recognise that vector drawings consist of layers • To group objects to make them easier to work with • To evaluate my vector drawing	• To recognise that you can work in 3D on a computer • To identify that digital 3d objects can be modified • To recognise that objects can be combined in a 3d model • To create a 3d model for a given purpose • To plan my own 3d model