Computing Milestones

Year 1/2	
Computing systems and networks	To identify technology, computer and its main parts To use a mouse and a keyboard in different ways To recognise the uses and features of information technology To identify the uses of information technology in and beyond school To explain how information technology helps us To explain how to use information technology safely
Creating media	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 use a computer on my own to paint a picture To add and remove text on a computer To identify that the look of text can be changed on a computer To use a digital device to take a photograph To decide how photographs can be improved To use tools to change an image To show how music is made from a series of notes To create music for a purpose
Data and Information	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 objects can be represented as pictures To create a pictogram To select objects by attribute and make comparisons
Programming	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 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 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 design an algorithm To create and debug a program that I have written To explain that a sequence of commands has a start and an outcome To create or change program using a given design or my own design

Year 3/4	
Computing systems and networks	To explain how digital devices function To identify input and output devices 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 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
Creating media	To explain that animation is a sequence of drawings or photographs To plan an animation To recognise how text and images convey information To choose appropriate page settings To add content to a desktop publishing publication To consider how different layouts can suit different purposes To identify that sound can be digitally recorded To use a digital device to record sound To explain that audio can be changed through editing To explain that digital images can be changed To change the composition of an image To recognise that not all images are real To evaluate how changes can improve an image To show that different types of audio can be combined and played together
Data and Information	To create questions with yes/no answers To identify the object attributes needed to collect relevant data To create a branching database To identify objects using a branching database To compare the information shown in a pictogram with a branching database 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 use collected data to answer questions
Programming	To explore a new programming environment To identify that commands have an outcome To recognise that a sequence of commands can have an order To create a project from a task description 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 identify and fix bugs in a program To design and create a maze-based challenge 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 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 design and create a project that includes repetition

Year 5/6	
Computing systems and networks	To explain that computers can be connected together to form systems To recognise the role of computer systems in our lives To contribute to a shared project online To identify how to use a search engine To describe how search engines select results
Creating media	To identify digital devices that can record video To capture video using a range of techniques To identify that video can be improved through reshooting and editing 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 group objects to make them easier to work with 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 outline the need for a navigation path To use a computer to create and manipulate three-dimensional (3D) digital objects To compare working digitally with 2D and 3D graphics To construct a digital 3D model of a physical object To design a digital model by combining 3D objects
Data and Information	To use a form to record information To outline how grouping and then sorting data allows us to answer questions To explain that tools can be used to select specific data To apply my knowledge of a database to ask and answer real-world questions To identify questions which can be answered using data To apply formulas to data, including duplicating To create a spreadsheet to plan an event To choose suitable ways to present data
Programming	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 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 To create a program to run on a controllable device To explain that selection can control the flow of a program To update a variable with a user input To use an 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