Computing Pupil Progression

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Computing systems and networks	**Technology around us** • To identify technology • To identify a computer and its main parts • To use a mouse in different ways • To use a keyboard to type • To use the keyboard to edit text • To create rules for using technology responsibly	**Information technology around us** • 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	**Connecting computers** • 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	**The internet** • 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	**Sharing information** • 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	**Communication** • To identify how to use a search engine • To describe how search engines select results • To describe how search engines select results • To explain how search results are ranked • To recognise why the order of results is important, and to whom • To recognise how we communicate using technology • To evaluate different methods of online communication

Creating Media	**Digital painting** ● 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 **Digital writing** ● 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	**Digital photography** ● 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 **Making music** ● To say how music can make us feel ● 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	**Stop-frame animation** ● 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 **Desktop publishing** ● 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	**Audio editing** ● 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 **Photo editing** ● 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	**Video editing** ● 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 **Vector drawing** ● 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	**Web page creation** ● 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 **3D modelling** ● 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 identify that physical objects can be broken down into a collection of 3D shapes ● To design a digital model by combining 3D objects ● To develop and improve a digital 3D model
Data and information	**Grouping data** ● 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	**Pictograms** ● 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	**Branching databases** ● 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 explain why it is helpful for a database to be well structured ● To compare the information shown in a pictogram with a branching database	**Data logging** ● 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	**Flat-file databases** ● To use a form to record information ● To compare paper and computer-based databases ● 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 explain that computer programs can be used to compare data visually ● To apply my knowledge of a database to ask and answer real-world questions	**Spreadsheets** ● To identify questions which can be answered using data ● To explain that objects can be described using data ● To explain that formula can be used to produce calculated data ● To apply formulas to data, including duplicating ● To create a spreadsheet to plan an event ● To choose suitable ways to present data
Programming	**Moving a robot** ● To explain what a given command will do ● To act out a given word ● To combine forwards and	**Robot algorithms** ● To describe a series of instructions as a sequence ● To explain what happens when we change the order of	**Sequence in music** ● To explore a new programming environment ● I can identify that each sprite is controlled by the commands	**Repetition in shapes** ● To identify that accuracy in programming is important ● To create a program in a text-based language	**Selection in physical computing** ● To control a simple circuit connected to a computer ● To write a program that includes count-controlled	**Variables in games** ● To define a ‘variable’ as something that is changeable ● To explain why a variable is used in a program

	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 • Introduction to animation • 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	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 • Introduction to quizzes • 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	I choose • 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 • Events and actions • 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	• 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 • Repetition in games • 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	loops • To explain that a loop can stop when a condition is met, eg 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 that includes selection • To create a controllable system that includes selection • Selection in games • 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 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 • Sensing • 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