# Computing Progression of Skills and Curriculum Overview

|  | Computing Systems and Networks | Creating Media | Data and Information | Programming |
|---|---|---|---|---|
| EYFS | To identify everyday technology<br>To begin to develop mouse control and keyboard skills<br>To use technology for a range of purposes<br>To begin to use technology independently & with confidence<br>To begin to develop Computational Thinking | | | |
| Year 1 | **Technology Around Us**<br>To identify technology<br>To identify a computer and its main parts<br>To use a mouse in different ways<br>To use a keyboard to type<br>To use the keyboard to edit text<br>To create rules for using technology responsibly | **Digital Painting**<br>To describe what different freehand tools do<br>To use the shape tool and the line tools<br>To make careful choices when painting a digital picture<br>To explain why I chose the tools I used<br>To use a computer on my own to paint a picture<br>To compare painting a picture on a computer and on paper | **Grouping Data**<br>To label objects<br>To identify that objects can be counted<br>To describe objects in different ways<br>To count objects with the same properties<br>To compare groups of objects<br>To answer question about groups of objects | **Moving a Robot**<br>To explain what a given command will do<br>To act out a given word<br>To combine forwards and backwards commands to make a sequence<br>To combine four direction commands to make sequences<br>To plan a simple program<br>To find more than one solution to a problem<br><br>**Introduction to animation**<br>To choose a command for a given purpose<br>To show that a series of commands can be joined together<br>To identify the effect of changing a value<br>To explain that each sprite has its own instructions |

| | | | | To design the parts of a project<br>To use my algorithm to create a program |
|---|---|---|---|---|
| Year 2 | **Information technology around us**<br>To recognise the uses and features of information technology<br>To identify information technology in the home<br>To identify information technology beyond school<br>To explain how information technology benefits us<br>To show how to use information technology safely<br>To recognise that choices are made when using information technology | **Digital Photography**<br>To know what devicces can be used to take photographs<br>To use a digital device to take a photograph<br>To describe what makes a good photograph<br>To decide how photographs can be improved<br>To use tools to change an image<br>To recognise that images can be changed<br><br>**Making Music**<br>To say how music makes us feel<br>To identify that there are patterns in music<br>To describe how music can be used in different ways<br>To show how music is made from a series of notes<br>To create music for a purpose<br>To review and refine our computer work | **Pictograms**<br>To recognise that we can count and compare using tally charts<br>To recognise that objects can be represented as pictures<br>To create a pictogram<br>To select objects by attribute and make comparisons<br>To recognise that people can be described by attributes<br>To explain that we can present information using a computer | **Robot algorithms**<br>To describe a series of instructions as a sequence<br>To explain what happens when we change the order of instructions<br>To use logical reasoning to predict the outcome of a program (series of commands)<br>To explain that programming projects can have code and artwork<br>To design an algorithm<br>To create and debug a program that I have written<br><br>**Introduction to quizzes**<br>To explain that a sequence of commands has a start and an outcome<br>To create a program using a given design<br>To change a given design<br>To create a program using my own design<br>To decide how my project can be improved |

| Year 3 | **Connecting Computers** | **Stop-frame animation** | **Branching databases** | **Sequence in music** |
|---|---|---|---|---|
| | To explain how digital devices function | To explain that animation is a sequence of drawings or photographs | To create questions with yes/no answers | To explore a new programming environment |
| | To identify input and output devices | To relate animated movement with a sequence of images | To identify the object attributes needed to collect relevant data | I can identify that each sprite is controlled by commands I choose |
| | To recognise how digital devices can change the way we work | To plan an animation | To create a branching database | To explain that a program has a start |
| | To explain how a computer network can be used to share information | To identify the need to work consistently and carefully | To explain why it is helpful for a database to be structured | To recognise that a sequence of commands can have an order |
| | To explore how digital devices can be connected | To review and improve an animation | To compare the information shown in a pictogram with a branching database | To change the appearance of my project |
| | To recognise the physical components of a network | To evaluate the impact of adding other media to an animation | | To create a project from a task description |
| | | **Desktop publishing** | | **Events and actions** |
| | | To recognise how text and images convert information | | To explain how a sprite moves in an existing project |
| | | To recognise that text and layout can be edited | | To create a program to move a sprite in four directions |
| | | To choose appropriate page settings | | To adapt a program to a new context |
| | | To add content to a desktop publishing publication | | To develop my program by adding features |
| | | To consider how different layouts can suit different purposes | | To identify and fix bugs in a program |
| | | To consider the benefits of desktop publishing | | To design and create a maze-based challenge |

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

| | | | | |
|---|---|---|---|---|
| Year 5 | **Sharing information**<br>To explain that computers can be connected together to form systems<br>To recognise the role of computer systems in our lives<br>To recognise how information is transferred over the internet<br>To explain how sharing information online lets people in different places work together<br>To contribute to a shared project online<br>To evaluate different ways of working together online | **Video editing**<br>To recognise video as moving pictures, which can include audio<br>To identify digital devices that can record video<br>To capture video using a digital device<br>To recognise the features of an effective video<br>To identify that video can be improved through reshooting and editing<br>To consider the impact of the choices made when making and sharing a video<br><br>**Vector drawing**<br>To identify that drawing tools can be used to produce different outcomes<br>To create a vector drawing by combining shapes<br>To use tools to achieve a desired effect<br>To recognise that vector drawings consist of layers<br>To group objects to make them easier to work with<br>To evaluate my vector drawing | **Flat-file databases**<br>To use a form to record information<br>To compare paper and computer-based databases<br>To outline how grouping and then sorting data allows us to answer questions<br>To explain that tools can be used to select specific data<br>To explain that computer programs can be used to compare data visually<br>To apply my knowledge of a database to ask and answer real-world questions | **Selection in physical computing**<br>To control a simple circuit connected to a computer<br>To write a program that includes count-controlled loops<br>To explain that a loop can stop when a condition is met, e.g. number of times<br>To conclude that a loop can be used to repeatedly check whether a condition has been met<br>To design a physical project that includes selection<br>To create a controllable system that includes a selection<br><br>**Selection in games**<br>To explain how selection is used in computer programs<br>To relate that a conditional statement connects a condition to an outcome<br>To explain how selection directs the flow of a program<br>To design and create a program which uses selection<br>To evaluate my program |

| Year 6 | Communication | Web page creation | Spreadsheets | Variables in games |
|---|---|---|---|---|
| | To identify how to use a search engine | To review an existing website and consider its structure | To identify questions which can be answered using data | To define a 'variable# as something that is changeable |
| | To describe how search engines select results | To plan the features of a wev page | To explain that objects can be descried using data | To explain why a variable is used in a program |
| | To explain how search results are ranked | To consider the ownership and use of images (copyright) | To explain that formula can be used to produce calculated data | To update a variable with a user input |
| | To recognise why the order of results is important, and to whom | To recognise the need to preview pages | To apply formulas to data, including duplicating | To use a conditional statement to compare a variable to a value |
| | To recognise how we communicate using technology | To outline the need for a navigation path | To create a spreadsheet to plan an event | To design a project that uses inputs and outputs on a controllable device |
| | To evaluate different methods of online communication | To recognise the implications of linking to content owned by other people | To choose suitable ways to present data | To develop a project that uses inputs and outputs on a controllable device |
| | | **3D modelling** | | |
| | | To use a computer to create and manipulate 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 | | |