Prestbury St Mary's Federation – Computing Progression Ladder 2025

	Reception	End Goals	Year 1	Year 2	End Goals	Year 3	Year 4	End Goals	Year 5	Year 6	End Goals
Algorithms and programming ***NC Aims*** Understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation Analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems	To give basic instructions to move a character, object or another child. To describe repeating patterns and create their own	To give a short series of instructions to control movement from a start point to an end point.	To identify what a command will do To give forward and backward commands to create a sequence To use 4 directional commands to create a sequence To plan a simple program To join a series of commands together To identify the effect of changing a value To use a combination of algorithms to create a program	To describe a series of instructions as a sequence To explain what will happen when we change the order of instructions To use logical reasoning to predict what will happen in a program To design an algorithm To create and debug a program that children have made To explain a sequence of commands has an outcome To explain a sequence of commands has an outcome To create a program using a child's own design	To create a sequence of commands to achieve an outcome To identify the order in which instructions need to happen in an algorithm To give commands to move an object.	To explore a new coding platform To identify commands that have an outcome To explain that program has a start To recognise a sequence of commands has an order To create a project from a task description To explain how a sprite moves in a project To create a program to move a sprite in 4 directions To adapt programs to a new context To develop programs by adding features To identify and fix bugs To design and create a maze-based challenge	To recognise that accuracy in programming is important To create a program in a text-based language To understand what repeat means in coding To modify count controlled loops to produce a given outcome To decompose a task into small steps To create a program using count-controlled loops to produce a given outcome To use count-controlled loops in different programming environments To understand loops can be infinite To modify infinite loops in a given program To design two or more infinite loops that run concurrently. To design and create a program that includes infinite loops	To understand the importance of the order of commands in a sequence. To use repetition loops within code. To be able to explain what a series of code will achieve To use infinite repetition loops. To create algorithms to move a sprite	To understand that micro:bits can be programmed to achieve an end goal To understand that micro:bits can be used as both an input and an output device To change the what information the micro:bits can display To gather data using micro:bits To use and or or in creating algorithms To use random numbers in algorithms To explain how selection is used in computing To relate that a conditional outcome connects a condition to an outcome To explain that selection directs the flow of the program To design and create a program that uses selection	To define a variable as something changeable To explain why variables are used in computing To identify ways in which a game can be improved by using variables To plan and design a project that includes a variable To update variables with user inputs To use conditional statements to compare a variable to a value To design and create a program that uses variable input and outputs	To use selection in programs to create different possible outcomes. To create variables that are modified as a program is run To use comparators to compare values within programs To use a different coding platforms (Scratch, micro:bits)
Vocabulary											
Depth of Learning											
Computing Systems and Networks ***ELGs:*** ***NC Aim:*** Evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems	To understand that we can use digital devices	To have used a digital devic	To use a mouse to navigate menus To use a keyboard to write and edit text To identify the main parts of a computer	To identify uses of information technology in school To identify use of information technology outside of school	To be able to type using a keyboard To be able to use a mouse To understand different uses of technology	To explain how a digital device functions To identify input and output devices To explain how a computer network can be used to share information To understand that digital devices can connect as part of a network	To describe how networks physically connect to other networks To recognise how networked devices make up the internet To understand how websites can be shared via the World Wide Web To recognise how the content of the WWW is created by people	To understand different types of input and output devices To understand that networks allow for the sharing of information To understand the internet is a collection of networks. The WWW is the websites created by people, accessible by the Internet.	To recognise that computers can be connected together to make systems To recognise the role of computer systems in our lives To describe how search engines select results To understand that search engine results are ranked To understand that the order of search results is important to users	To understand the important of internet addresses To recognise how data is transferred across the internet To understand that sharing information online can help people work together To recognise how we communicate using technology	To recognise computer control many things in our daily lives. To understand search engines identify suitable results based upon users' searches To understand that data is transferred across the internet. To recognise that the internet allows use to communicate and work together easily

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Vocabulary											
Depth of Learning											
Creating Media, Design and Development ***ELGs:*** ***NC Aim:*** Be responsible, competent, confident and creative users of information and communication technology	N/A	N/A	To use freehand tools in digital painting To use shape and line tools in digital painting To alter the appearance of text on a computer	To use a digital device to take a photograph To describe what makes a good photograph and they could be improved To use tools to change photographs To identify there are patterns in music To use a computer to create a musical pattern	To use digital painting software to create images To take photos and edit them using digital software To use software to create audio files	To explain that animation is a sequence of images To relate animated movement with a sequence of images To plan an animation To review and improve an animation To evaluate the impact of adding other media to an animation To recognise how text and images convey meaning To recognise the layouts of text and images can be changed To add content to desktop publishing To consider how different layouts can suit different purposes	To understand that sound can be record To explain that audio recordings can be edited To apply audio editing skills To combine audio to enhance a project To explain that the composition of digital images can be changed To explain that the colours of digital images can be changed To understand how cloning can be used in digital editing To explain that images can be combined To evaluate how changes improve an image	To use images to create animation To use text and images to create content To record and edit audio files To create images and copy, edit and alter them.	To identify what makes an effective video To identify digital devices that can record video To capture video using a digital device To create a storyboard to plan a video To understand that reshooting and editing can improve a video To use different drawing tools to produce different outcomes To create a vector by combining shapes To recognise that vectors and made up of different layers To group objects to make them easier to work with To apply learning to create different vectors	To review the structure of existing websites To plan the features of an effective website To understand the need to preview pages To recognise that computers can be used to work in 3D To recognise that 3D objects can be modified To recognise that objects can be combined to make a 3D model To plan and create a digital 3D model	To record and edit digital videos To combine different shapes to create new images To understand the components that make a successful website To create and edit 3D models
Vocabulary											
Depth of Learning											
Data and Information ***ELGs:*** ***NC Aim:*** Understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation	N/A	N/A	To label and count different objects To group similar objects and count these To compare different groups of objects. To answer questions about different groups of objects	To recognise we can count using tally charts To recognise objects can be represented as pictures To create a pictogram To select objects by attributes and make comparisons To recognise people can be described by attributes To explain that we can present information using a computer	To label and organise objects To understand different representations that can be used To understand that computers can be used to present information	To create questions with yes/no answers To identify the attributes needed to collect data about an object To plan the structure of a branching database To create a branching database To understand why structure is important in a database To create an identification tool	To explain that data gathered over time can be used to answer questions To use a digital device to gather data automatically To explain that a data logger collects data from sensors over time To recognise that a computer can help to analyse data To identify required data to answer specific questions Use gathered data to answer questions	To understand that databases hold information about people or objects To answer questions from the data collected To understand that computers can help analyse data	To use forms to record information To compare computer and paper-based databases To use grouping and sorting data to answer questions To understand tools can be used to select specific data To explain that computer-based programs can be used to compare data visually To use real world databases to answer questions	To create a data set in a spreadsheet To explain that formulas can be used to produce calculated data To apply formulas to data To create a spreadsheet that uses formulas to calculate data To choose suitable ways to present data	To use computer-based programs to compare data To group and sort data to answer questions To create spreadsheets containing data. To use formulas within spreadsheets.

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Vocabulary											
Depth of Learning											
Safety, Security and the Impact of Technology ***ELGs:*** ***NC Aim:*** Be responsible, competent, confident and creative users of information and communication technology	N/A	N/A	To create rules for using technology safely To compare writing and typing To compare digital drawing and free hand drawing	To explain how information technology helps us To explain how to use information technology safely To recognise that photographs can be changed	To understand how to use digital devices safely. To compare digital tools and free hand	To consider the benefits of desktop publishing	To evaluate the consequences of sharing of unreliable content over the internet	To identify benefits and consequences of using digital devices	To consider the impact of choices made when making and sharing videos	To consider the ownership and use of images (copyright) To recognise the implications of linking content owned by other people	To recognise care must be considered when sharing and using things online.
Vocabulary											
Depth of Learning											