



Knowledge Progression Map: Computing

	Nursery	Reception	Year 1	Year 2
Algorithms, Problem Solving and Programming	To know what instructions are. To understand that you will need to press the buttons on the bee bot in order to program the robot. To understand that to get to an end point that robot will have to move in different directions.	To understand what algorithms are and how we use them in our daily lives. To understand that a string of instructions or commands placed together can create a simple program. To understand what symbols are.	To understand what a command is. To understand that a sequence is a series of different commands creating a program. To know the different directions such as left, right, forwards and backwards. To know how to open a program on the computer using a mouse.	To know that a sequence of commands make a program. To know that a change in the sequence will change the outcome of the program. To know what predicting is and how to create a prediction.
Data and Information			To understand what a label is. To understand what groups are and how to make a group with items that have a similar theme in common. To understand how to label groups that have a similar theme in common.	To know what is meant by data and how to collect it. How to access a computer to enter data. To know how to open software such as Excel to represent data in different formats. To know what different formats are such as pictograms.
Computing Systems and Networks			To know what the different parts of computer are called. To know what the different keys on the keyboard are and their function it performs. To know what files, consist of and the different types of files that you can have.	To know the different features of information technology in and outside the school. To know the benefits of computing and how it helps our daily lives.
Creating Media		To know how to use different types of technology with support. To know what media is and be able to know how to create pieces of media using digital media. Being able to use a camera to take photographs.	To know the sequence of tools needed when creating a digital painting. To understand the function of the tools available when creating a digital painting To know what that the undo button, removes and undoes the last action the computer just performed.	To know how to edit photographs and how light changes the outcome. To know how to use software in order to edit photos taken. To know how to use different software to play sounds of different instruments and explore musical patterns.
Digital Citizenship	To know what the internet is and how to access it safely. To know to talk to our trusted adult using 5 people to remind us.		To know what the internet is and how to access it safely. To know to talk to our trusted adult using 5 people to remind us. To know what to do if someone is unkind online. To know why it is important to have time away from screens and taking part in online activities.	To know what the internet is and how to access it safely. To know to talk to our trusted adult using 5 people to remind us. To know what to do if someone is unkind online and how everyone is part of an online community. To know why it is important to have time away from screens and taking part in online activities.

	Year 3	Year 4	Year 5	Year 6
Algorithms, Problem Solving and Programming	To know how programs are made from an input. To know that by combining and ordering commands in a program that an outcome is produced. To know that a change in the commands will determine a change in outcome.	To know what a loop command is. To know how to link a loop command in a program to repeat instructions. To understand the difference between indefinite loops and count-controlled loops. To know how to plan a program that includes appropriate loops to produce a given outcome. To know how to create two or more sequences that run at the same time.	To know that a condition can only be true or false. To understand how to use a condition in an ‘if...then’ statement to start an action. To understand how to use selection to switch the program flow in one of two ways. To know what program flow is.	To understand how variables can be used in a program. To know how to experiment with the value of an existing variable. To know what a variable is and how to decide where in the program to set it. To know how to debug more complex programs and create something more complex.
Data and Information	To know that a data set can be structured using yes/no questions. To know what a branching database is. To know how to retrieve information from different levels of branching databases.	To understand that data can be logged over time. To know what sensors are. To know how to use data loggers to collect data automatically. To know how to export information in different formats.	To know that you can view data in different ways. To understand how operands can be used to filter data. To know how ‘AND’ and ‘OR’ can be used to refine data selection. To know how to select an appropriate graph to visually compare data.	To know what an item of data is in a spreadsheet. To understand that formulas can be used to produce calculated data. To know how to choose suitable ways to present spreadsheet data.
Computing Systems and Networks	To know what an input and output are. To know that a network is made up of a number of components. To know how device in a network are connected with one another: To know who information is passed through multiple connection. To know what a connection is.	To know how networks, connect to other networks. To know how information can be shared via the World Wide Web. To understand the reliability of content online and the consequences of unreliable content. To know the benefits and limitations of the World Wide Web. To know the need for security on the internet.	To understand that a system is a set of interconnected parts which work together. To understand that inputs, processes and outputs are used in large IT systems. To know how to explain that search results are selected from search engines.	To know that data is transferred across networks using agreed protocols. To know what a protocol is. To know that data is transferred in packets. To understand opportunities that technology offers for communication and collaboration.
Creating Media	To know what an animation is and how to create one using a storyboard plan. To know how to capture an image and why it important to move the object in order to create the animation. To know how to add media into the animation. To know what frames are and how to add and remove them within an animation. To know how text and images can be used together to convey information. To know how to change a page orientation for different purposes. To know how to create, resize and rotate text boxes. To know how to choose a font and apply different effects to text.	To know how to record sound using a computer. To know that recorded audio can be stored on a computer and understand that audio can be edited. To know how to play and delete sections of audio. To know how to import audio into a project. To know how to change the composition of images by cropping, adding filters, rotating and flipping.	To know the features of a video recording device or app. To know how to use pan, tilt and zoom, as well as different camera angles. To know how to combine filming techniques for a given purpose. To know how to use split, trim and crop to edit a video. To know how to add an object to a vector drawing. To know that each object in a drawing is in its own layer. To understand that vector images can be scaled without impact on quality. To know that objects can be modified in groups.	To understand how hyperlinks, work and insert these between web pages. To know how to create a website with text and media. To understand the importance of copyright online. To understand how 3D models can be created on a computer. To know that digital tools can be used to manipulate 3D objects. To know how to construct a 3D model which reflects a real-world object.
Digital Citizenship	To know how to recognize cyberbullying To know why it is important to stay positive and support others whilst playing games online.	To understand how to respond to cyberbullying. To know how to keep online friendships safe. To understand how online activity affects our digital	To know how to de-escalate issues online. To understand how to chat safely with people you meet online.	To understand how to prevent and act against cyberbullying. To know how social media can affect relationships.

	To know how to post information online and how it can affect identity. To know why people may choose to alter images and videos. To understand why it is important to have device-free moments.	footprints. To know the rights and responsibilities of creators online. To know how digital citizens, take responsibility for themselves, their communities and the wider world.	To understand how gender stereotypes, shape online experiences. To know the important features of online news articles. To understand what makes a healthy media choice. To understand the difference between personal and private information.	To know that there are different ways to present yourself online and consider the pros and cons of this. To know how to find credible information online. To understand the importance of a media balance. To know how to avoid clickbait.
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