



Computing Long Term Disciplinary Knowledge Map



	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Computing Systems and networks - Technology around us	I Spy IT To know that a range of technology is used in places such as homes and schools. To know how to select and use technology for particular purposes.	Technology Around Us To be able to choose a piece of technology to do a job. To know that some technology can be used in different ways. To know the main parts of a computer. To use a mouse in different ways. To use a keyboard to type. To use the keyboard to edit text. To show how to use technology safely.	IT Around Us To describe some uses of computers. To identify information technology in school To identify information technology beyond school. To show how to use information technology safely.	Connecting Computers To know the difference between inputs and outputs devices. To understand that a computer system accepts an input and processes it to produce an output. To know how a computer network can be used to share information. To know the role of a switch, server, and wireless access point in a network. To know where network devices are around them.	The Internet To know networks connect to other networks. To know how information can be shared via the World Wide Web. To know that the World Wide Web is part of the internet. To know that the global interconnections of networks is the internet. To know how to access the World Wide Web. To know there are different types of content/media that can be added, created and shared on the World Wide Web. To know that the internet enables us to view the World	Systems and Searching To describe the input and output of a search engine. To know that different search terms produce different results. To evaluate the results of search terms.	Communication and Collaboration To know methods of communicating and collaborating using the internet. To know which methods of internet communication and collaborating to use for a given purpose. To evaluate different methods of online communication and collaboration. To know what you should and should not share online.

					Wide Web.		
Creating Media		Digital Painting To know how to create a picture using freehand tool. To know to use shape and line tools when precision is needed. To be able to use a range of colours. To know how to use the fill tool to colour an enclosed area. To use the undo button to correct mistakes. To know how to combine a range of tools to create a piece of artwork.	Digital Photography To know how to capture a digital image. To know how to take photographs in both landscape and portrait format. To know how to view a photograph on a digital device and decide which photographs to keep. To know to hold the camera still to take a clear photograph. To consider lighting before taking a photograph. To know how to zoom to change the composition of a photograph. To know how to use filters to edit the appearance of a photograph.	Stop-Frame Animation. To know how to plan an animation using a storyboard. To know how to capture images. To know how to use onion skinning tool to review subject position. To know how to move a subject between captures. To know to review a captured sequence of frames as an animation. To know how to remove frames to improve the animation. To know how to add media to enhance an animation. To be able to review a completed animation.	Audio Production To know how to record sound using a computer. To know how to play recorded audio. To know how to import into a project. To know how to delete a selection of audio. To know how to change the volume of tracks in a project. To evaluate the effective use of audio	Video Editing To know different camera angles. To know how to use pan, tilt and zoom. To know the features of a video recording device or application. To know how to combine filming techniques for a given purpose. To know what changes to make when editing including reshooting, splitting, trimming and editing.	Web Page Creation To review an existing website (navigation bars, header). To know how to create a new blank web page. To know how to add text to a web page. To know how to set the style of text on a web page. To know how to change the appearance of text. To embed media in a web page. To know how to add pages to a website. To know how to insert hyperlinks between pages. To know how to insert hyperlinks to another page. To know how to preview a web page (different screen sizes)
Programming A	One Step at A Time To follow simple oral algorithms To spot simple patterns To sequence simple	Moving A Robot To predict the outcome of a command on a device. To choose commands	Robot Algorithms To know a series of words that can be enacted as a sequence. To know a series of	Sequencing Sound To know how to build a sequence of commands. To know how to combine commands	Repetition in Shapes To know how to list an everyday task as a set of instructions including repetition. To know how to use	Selection in Physical Computing To know how to create a conditioned controlled loop. To know how to use	Variable Games To know how to identify a variable in an existing program. To experiment with

	familiar tasks	for a given purpose. To know a series of commands that can be run as a programme. To know how to build a sequence of commands in steps. To know how to combine commands in a program. To know how to run a program on a device.	words that can run a program. To know how to create a program. To trace a sequence to make a prediction. To run a program on a device. To debug a program that they have written themselves.	in a program. To know how to order the commands in a program. To create a sequence of commands to produce a given outcome.	an indefinite loop to produce a given outcome. To know how to use a count-controlled loop to produce a given outcome. To plan a program that includes appropriate loops to produce a given outcome. To know which tools enable more than one process to be run at the same time (concurrency). To know how to create two or more sequences that run at the same time.	a condition in an 'if...then...' statement to start an action. To use selection to switch the program flow in one of two ways. To know how to use a condition in an 'if...then...else...' statement to produce given outcomes.	the value of an existing variable. To know to choose a name that identifies the role of a variable to make it easier for humans to understand it. To know where in a program to set a variable. To know how to update a variable with a user input. To know how to use an event in a program to update a variable. To use a variable in a conditional statement to control the flow of a program. To know how to use the same variable in more than one location in a program.
Data and Information	Sorting IT To identify a chart. To sort physical objects, take a picture and discuss what I have done. To present simple data on a digital device.	Grouping Data To identify some attributes of an object. To collect simple data. To know that collected data can be counted.	Pictograms To know that people, animals and objects can be described by attributes. To know how to enter data onto a computer. To know data can	Branching databases To know how to create questions with yes/no answers. To know how to choose questions that will divide objects into evenly sized subgroups.	Data Logging To know how to use a digital device to collect data automatically. To choose how often to automatically collect data samples. To know how to use	Flat-File Database To know different ways to view data. To know how to ask questions that need more than one attribute to answer. To choose which attribute and value	Introduction to Spreadsheets To know how to calculate data using a formula for each operation. To know how to use functions to create new data.

		To describe the properties of an object. To choose an attribute to group objects by. To know how to group objects to answer questions. To know that objects can be grouped by similarities (attributes!). To describe a group of objects (based on commonality).	viewed in different formats on a computer. To know how to use pictograms to answer single-attribute questions. To know how to use a computer to answer comparison questions (graph, tables)	To know how to repeatedly create subgroups of objects. To know how to identify an object using a branching database. To retrieve information from different levels of the branching database	a set of logged data to find information. To know how to use a computer program to sort data by one attribute. To know how to export information in different forms.	to search by to answer a given question (operands). To know which attribute to sort data by to answer a given question. To know how to choose multiple criteria to search data to answer a given question (AND and OR) To know real-world databases can be searched to answer questions and the results can be refined and presented.	To know how to use existing cells within a formula. To choose suitable ways to present spreadsheets data.
Creating Media	Digital Pictures To take a photograph. To take a photograph and use it in an app. To use a painting app and explore the paint and brush tools.	Digital Writing To know how to use letter, number and Space key to enter text into a computer. To know how to use punctuation and special characters. To know how to select text. To use the Backspace key to remove text. To know how to position the text cursor in a chosen location. To know how to use	Digital Music To experiment with musical patterns on a computer. To experiment with different sounds on a computer. To know how to use a computer to create a musical pattern. To know how to use a computer to compose a rhythm and a melody on a given theme. To know how to use a computer to play	Desktop Publishing To know how page orientation can be changed. To know how to add text to a placeholder. To know how to edit the text in a placeholder. To know how to choose the fonts and apply effects to text. To know how to organise text and image placeholders in a page layout. To know how to add	Photo Editing To know that digital images can be manipulated. To know that digital images can be changed for different purposes. To choose the most appropriate tool for a particular purpose. To consider the impact of changes on the quality of the images.	Introduction to vector Graphics To know how to add an object to a vector drawing. To know how to select one object or multiple objects. To know how to delete an object. To know how to move objects between layers of a drawing. To know how to duplicate objects using copy and paste.	3D Modelling To know how to position 3D shapes relative to one another. To know how to use digital tools to modify 3D objects. To know how to combine objects to create 3D digital artefacts. To know how to use digital tools to accurately size 3D objects. To construct a 3D

		Undo. To know how to choose options to achieve a desired effect. To know how to change the appearance of text on a computer.	the same music in different ways (e.g. tempo). To evaluate a musical composition created on a computer. To improve a musical composition created on a computer.	and remove images to and from placeholders. To know how to move, resize and rotate images. To know how to review a document.		To know how to modify objects. To know how to reposition objects. To know how to group and ungroup selected objects. To know how to combine options to achieve a desired effect. To create a vector drawing for a given purpose.	model which reflects a real world object.
Programming B	Which Way? To use a mouse, touch screen or appropriate access device to target and select options on screen. To input a simple sequence of commands to control a digital device with support (Bee Bot)	Animations To choose a series of words that can be enacted as a program. To choose a series of commands that can be run as a program. To run a program on a device.	Programming Quizzes To choose a series of words that can be enacted as a sequence. To explain what happens when we change the order of instructions. To choose a series of commands that can be run as a program. To know how to trace a sequence to make a prediction. To know how to test the prediction by running the sequence. To know how to create and debug	Events and Actions in Programs To know how to build a sequence of commands. To know how to combine commands in a program. To know how to order commands in a program. To know how to create a sequence of commands to produce a given outcome.	Repetition in Games To know how to list an everyday task as a set of instructions including repetition. To know how to use an indefinite loop to produce a given outcome. To use a count-controlled loop to produce a given outcome. To plan a program that includes appropriate loops to produce a given outcome. To recognise tools that enable more than one process to be run at the same time (concurrency).	Selection in Quizzes To choose a condition to use in a program. To create a conditioned-controlled loop. To use a condition in an 'if... then... ' statement to start an action. To know how to use selection to switch program flow. To Know how to use 'if... then... else... ' to switch program flow in one of two ways.	Sensing Movement To identify a variable in an existing program. To know how to experiment with the value of an existing variable. To know how to choose a name that identifies the role of a variable to make it more usable (to humans). To decide where in a program to set a variable. To know how to update a variable with a user input. To know how to use an event in a program to update a

your own program.
To know how to run
a program on a
device.

variable.
To know how to use
a variable in a
conditional statement
to control the flow
of a program.
To know how to use
the same variable in
more than one
location in a
program.