

Computing Knowledge Progression Map

	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
What is a Computer?	<ul style="list-style-type: none"> • Know how to use a telephone to call the emergency service • Know how to take a picture on an iPad • Know how to use different digital devices • Know that the picture can be found in Photos • Know how to open an app on an iPad/ Interactive White board • Know that some toys are programmable 	<ul style="list-style-type: none"> • Know what <ul style="list-style-type: none"> ○ Screen ○ Mouse ○ Keyboard ○ Computer are • Know how to select an image • Know how to use a mouse to locate a place on the screen • Know how to enter text into a document using a keyboard • Know that computers are used <ul style="list-style-type: none"> ○ to work the signals on railways ○ control traffic lights on road s ○ in the control tower at the airport • Know that vehicles use computers to enable them to work 	<ul style="list-style-type: none"> • Know which devices in the home use computing technology in the home • Know how computers are used in shops • Know how information technology benefits us by making tasks more efficient • Know how to use information technology safely <ul style="list-style-type: none"> ○ Switch on ○ Login ○ Load an app ○ Sign out ○ Shutdown • Know how to edit text using <ul style="list-style-type: none"> ○ back space ○ delete key ○ space bar ○ cursor keys • Know how London Tower Bridge lets tall ships through using computers 	<ul style="list-style-type: none"> • Know that <ul style="list-style-type: none"> ○ Keyboard ○ Mouse ○ Scanner ○ Camera (including within iPad) are input devices • Know that <ul style="list-style-type: none"> ○ Monitor ○ Printer output devices • Know that a computer network can be used to share information • Know how digital devices can be connected <ul style="list-style-type: none"> ○ Wi-Fi ○ Ethernet Network cable <ul style="list-style-type: none"> • Know how the components of a network work together ○ Know that the network switch connects the server to <ul style="list-style-type: none"> ▪ the printer ▪ the Wi-Fi discs ▪ the internet line ○ Know that wireless devices connect to other devices via the Wi-Fi Discs that are wired together in the ceiling • Know that shops and online retail use • Scanners (input device) • Bar codes • To control stock • To calculate how much is spent 	<ul style="list-style-type: none"> • Know how networks physically connect other networks • Know how networked devices make up the internet • Know that websites can be shared via the World Wide Web • Know that uploaded content can be accessed on the World Wide Web • Know the consequences of unreliable content • Know how scanners and monitors are used in hospitals in the detection and treatment of illness • Know how tracking devices are used to inform training in sport 	<ul style="list-style-type: none"> • Know how social influencers use the internet to encourage behaviours • Know the significant role of computer systems in our lives • Know how information is transferred over the internet • Know how sharing information online lets people in different places work together • Know how to evaluate how successful different ways of working together online are 	<ul style="list-style-type: none"> • Know that a search engine is a huge database • Know how search engines select results • Know how search results are ranked • Know that understanding how the results are ranked will affect how they should be used • Know that companies pay to have their goods at the top of the list • Know how we communicate using technology <ul style="list-style-type: none"> ○ Know what <ul style="list-style-type: none"> ▪ A website is ▪ A blog is ▪ Email is ▪ Messenger apps are ▪ Know what a group chats is • Know how to evaluate the different methods of online communication above • Know that different search engines may rank data differently • Know how banks secure data using <ul style="list-style-type: none"> ○ 2 factor authentication ○ Finger print recognition ○ Face recognition ○ Pin numbers
	Software Knowledge		<ul style="list-style-type: none"> • Know how to login to MSTeams 	<ul style="list-style-type: none"> • Know how to save and print work independently 	<ul style="list-style-type: none"> • Know how to upload content to MSTeams and Sharepoint 	<ul style="list-style-type: none"> • Know how to collect and submit information using MSForms 	
	Summer 1	Autumn 1	Autumn 1	Autumn 1	Autumn 1	Autumn 1	Autumn 1

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	RECEPTION	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Presenting Information & Multimedia Unit 1	<ul style="list-style-type: none"> Know how to operate a digital device to fulfil a task with support Know how to create simple digital content, e.g. digital art Know how to choose media to convey information, e.g. image for a poster 	<ul style="list-style-type: none"> Know what different freehand tools do Know how to use the shape tool and the line tools Know why they chose the tools used Know how to create their picture Know what is the same/different when painting a picture on a computer or on paper 	<ul style="list-style-type: none"> Know what devices can be used to take photographs Know how to use a digital device (iPad) to take a photograph Know what makes a good photograph Know how to use tools to improve a photograph 	<ul style="list-style-type: none"> Know how text and images convey information Know that text and layout can be edited Know how to add text and images and place them in the desired place Know how to evaluate which layouts suit different purposes 	<ul style="list-style-type: none"> Know how to use a digital device (iPad) to record sound Know that a digital recording is stored as a file Know that audio can be changed through editing Know how to combine audio Know how to evaluate editing choices made 	<ul style="list-style-type: none"> Know that video is a sequence of moving pictures, which can include audio Know how to use an iPad to record video recognise the features of an effective video Know how to use reshooting and editing to improve Know how to evaluate the impact of the choices made when making and sharing a video Know how to use green screen backgrounds to replace background imagery 	<ul style="list-style-type: none"> Know how an existing website is structured Know how to plan the structure of a web page Know what copyright is and why it is necessary in re Know why pages should be previewed before being published Know how to create navigation for a website Know what the risks are with creating links to other websites Know how to create a hyperlink Know how to insert text and graphics Know how to edit the size and appearance of text and images Know how to support the user by careful decisions about presentation Know how to evaluate how successfully it meets the intended use
	Software Knowledge		<ul style="list-style-type: none"> Know how to use Apple Photo edit tools to crop and adjust light settings Know how to create and edit a MSWord document 	<ul style="list-style-type: none"> Know how to create a PowerPoint in MSTeams 	<ul style="list-style-type: none"> Know how to add and edit sound to an existing video or sequence of photographs Know how to add pre-recorded sounds to a MSPowerPoint slide show 	<ul style="list-style-type: none"> Know how to use iMovie to edit iPad video recordings 	<ul style="list-style-type: none"> Know how to use MSPublisher to create, edit and publish a website
			Autumn 1	Spring 1	Autumn 2	Spring 1	Autumn 2

Computing Knowledge Progression Map

	RECEPTION	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 6
Presenting Information & Multimedia Unit 2	<ul style="list-style-type: none"> • Know how to operate a digital device to fulfil a task with support • Know how to create simple digital content, e.g. digital art • Know how to choose media to convey information, e.g. image for a poster 	<ul style="list-style-type: none"> • Know how use a computer/ iPad to write • Know how to add and remove text • Know how to make headings stand out from the main text by altering size, type colour of font • Know why they chose the font/colour/ size of the text and what effect it had • Know what the differences are between writing on a computer with writing on paper 	<ul style="list-style-type: none"> • Know how to create a sequence of sounds using a musical program • Know how to undo when a mistake has been made • Know how to edit the sounds to achieve a regular rhythm 	<ul style="list-style-type: none"> • Know that animation is a sequence of drawings or photographs • Know how to create movement with a sequence of images • Know how to plan a sequence to form an animation • Know how to review and improve an animation • Know that music/ sound can be added to the animation to form a movie 	<ul style="list-style-type: none"> • Know that digital images can be changed • Know how to use the cropping and rotation tools • Know how to use filters to create different effects • Know how to evaluate what changes have improved an image 	<ul style="list-style-type: none"> • Know that drawing tools can be used to produce different outcomes • Know how to create a vector drawing by combining shapes • Know which tools to use achieve a desired effect • Know that vector drawings consist of layers • Know how to group objects to make them easier to work with • Know how to evaluate my vector drawing 	<ul style="list-style-type: none"> • Know how use a computer to create and manipulate 3D digital objects • Know what the similarities and differences are between 2D and 3D graphics • Know how to construct a digital 3D model of a physical object • Know that physical objects can be broken down into a collection of 3D shapes • Know how to design a digital model by combining 3D objects 	
Software Knowledge		<ul style="list-style-type: none"> • Know that MSWord and PowerPoint are programs that can be used for writing 	<ul style="list-style-type: none"> • Know how to create layered rhythms and sounds using MusicLab 	<ul style="list-style-type: none"> • Know how to use iMovie to create an animation 	<ul style="list-style-type: none"> • Know how to use iPad Photo editor 	<ul style="list-style-type: none"> • Know how to create Vector Drawings in MSPowerPoint 	<ul style="list-style-type: none"> • Know how to use Tinker Cad Software to create, edit and improve a digital 3D model 	
		Summer 2	Summer 1	Summer 1	Summer 2	Spring 2	Summer 1	

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Data	<ul style="list-style-type: none"> • Access content in a range of formats, e.g. image, video, audio • Answer basic questions about information displayed in images e.g. more or less 	<ul style="list-style-type: none"> • Know that objects can be labelled and what an appropriate label is • Know that objects can be counted in different ways • Know how to sort objects with the same properties • Know how to compare groups of objects • Know how to answer questions about groups of objects 	<ul style="list-style-type: none"> • Know how to collect data using a tally chart • Know how to interpret a tally chart • Know how to input data from a tally chart into a computer to create a chart • Know how to interpret the pie chart or block graph created <ul style="list-style-type: none"> ○ 	<ul style="list-style-type: none"> • Know how to use questions with yes/no answers to sort data • Know how to identify objects using a branching database • Know how to structure a branch database effectively 	<ul style="list-style-type: none"> • Know what a use a form to record information • compare paper and computer-based databases • Know how to <ul style="list-style-type: none"> ○ Group ○ Filter ○ Sort Data to answer questions • Know that tools can be used to select specific data • know how to use computer programs to compare data visually • Know how to ask and answer real-world questions using a database • Know how to use a commercial database to retrieve data e.g. such as Expedia Holiday Flights 	<ul style="list-style-type: none"> • Know how to create a spreadsheet • Know what questions can be answered using data • Know how to use charts to present and interpret data • Know how to collect data in a spreadsheet • Know how to populate a graph 	<ul style="list-style-type: none"> • Know how to use formulae to calculate <ul style="list-style-type: none"> ○ Sum of a range of cells ○ Difference between two cells ○ Average of a range of cells • Know how to use fill commands • Know how to insert or delete rows and columns and the effect this has on the formula • Know how to use charts to present and interpret data
	<p>Software Knowledge</p>		<ul style="list-style-type: none"> • Know how to present data using J2EChart to <ul style="list-style-type: none"> ○ Input data ○ Produce a pie chart or bar chart 	<ul style="list-style-type: none"> • Know how to create a branch database using J2EBranch 	<ul style="list-style-type: none"> • Know how to use a J2EChart to <ul style="list-style-type: none"> ○ create a database ○ display data in different ways <ul style="list-style-type: none"> ▪ pie chart ▪ bar chart ▪ line graph 	<ul style="list-style-type: none"> • Know how to use MS Excel 	<ul style="list-style-type: none"> • Know how to use MS Excel
		Spring 1	Spring 2	Spring 2	Autumn 2	Summer 1	Spring 1

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Programming & Algorithms	<ul style="list-style-type: none"> • Know how technology is used around the home and the classroom • Know how to enter commands on an iPad game to control outcomes • Know how to recognise the success or failure of an action • Know how to follow simple instructions to control a digital device • Know that we control computers • Know how to input a short sequence of instructions to control a device 	<ul style="list-style-type: none"> • Know what a command will do <ul style="list-style-type: none"> ○ Go ○ Forward ○ Backwards ○ Turn ○ Left ○ Right • Know how to act out these instructions • Know how to combine forwards and backwards commands to make a sequence • Know how to combine four direction commands to make sequences • Know that a series of commands can be joined together 	<ul style="list-style-type: none"> • Know that a sequence of commands has a start • Know that a series of instructions as a sequence • Know what happens when we change the order of instructions • Know how to predict the outcome of a program (series of commands) • Know how to change the background 	<ul style="list-style-type: none"> • Know that a sprite is controlled by chosen commands • Know that the program must include a start command • Know that the sequence of commands affects the outcome • Know how to adjust: <ul style="list-style-type: none"> ○ Background ○ Sprite appearance ○ Sound • Know how to move a sprite in all four directions • Know what went well and how the game could be improved 	<ul style="list-style-type: none"> • Know that accuracy in programming is important • Know what 'repeat' means • Know how to create and modify a count-controlled loop to produce a given outcome • Know how to decompose a program into parts • Know that in programming there are infinite loops, count controlled loops and repetition • Know how to modify an infinite loop in a given program 	<ul style="list-style-type: none"> • Know how to control a simple circuit connected to a computer to turn on and off a light • Know how to write a program to turn on a light, wait for a given period of time and then turn off • Know how to write a program that includes count-controlled loops • Know that a that a loop can stop when a condition is met, e.g. number of times • Know that a loop can be used to repeatedly check whether a condition has been met • Know that a conditional statement connects a condition to an outcome • Know how selection directs the flow of a program • Know how to design a program which uses selection • Know what went well and what could be improved 	<ul style="list-style-type: none"> • Know how to create a program to run on a controllable device • Know that selection can control the flow of a program • Know that a 'variable' is something that is changeable • Know how to update a variable with a user input • Know how use an conditional statement to compare a variable to a value • Know what went well and how the game could be improved
	<ul style="list-style-type: none"> • Know how to make a BeeBot move forwards and backwards 	<ul style="list-style-type: none"> • Know how to program a BeeBot and iPad games which require sequencing of commands 	<ul style="list-style-type: none"> • Know how to use ScratchJr create and debug a program which moves the sprite in four directions 	<ul style="list-style-type: none"> • Know how to use Scratch to design and create a maze-based challenge 	<ul style="list-style-type: none"> • Know how to create a program using Scratch that uses loops to produce a given outcome 	<ul style="list-style-type: none"> • Know how to use Crumble Controller to write program that simulates the traffic light sequence 	<ul style="list-style-type: none"> • Know how to simulate the program using Scratch • Know how to connect Crumble elements and use inputs and outputs accurately
		Autumn 2	Autumn 2	Spring 1	Spring 2	Spring 1	Autumn 2