PROGRESSION DOCUMENT   COMPUTING

	RECEPTION			
	AUTUMN	**SPRING**	**SUMMER**	
Topic	Mini Mash	Mini Mash Early computing skills – mouse and trackpad	Mini Mash Early computing skills - typing	Mini Mash Early computing skills – logging on with individual log in
Substantive Concepts	Navigate an Ipad to play MiniMash	-Know how to use a mouse -Know how to use a trackpad*	-Know how to use the different inputs of a computer keyboard to type	-Log in independently using individual log in
Disciplinary Knowledge	-Hold the Ipad sensibly -Identify rules around the Ipads -Press the button to open the Ipad -Identify the Purple Mash app -Use a finger to move and swipe around the Ipad -Play games	-Hold a mouse correctly with my fingers on the right buttons -Click the left hand button to perform an action -Click and drag to move objects purposefully -Use the scroll roller on the mouse	-Find individual letters on a keyboard -Find and use the space bar -Delete using the backspace or delete key -Type in both uppercase and lowercase using the capslock key -Type numbers -Use the enter key -Use the arrow keys	-Navigate the Purple Mash page -Use a picture password to log in -Use a number password to log in -Find the 'MyWork' area -Log in on both an ipad and computer
Vocabulary	Ipad Purple Mash	Mouse Trackpad Left Click Drag scroll	Keyboard Space bar Delete Backspace Uppercase Lowercase Capslock Numbers Enter arrow	Picture Number Password Log in MyWork

CYCLE A - YEAR 1

	AUTUMN			SPRING			SUMMER		
Strand	Digital Literacy	Information Technology	Information Technology	Computer Science	Computer Science	Information Technology	Computer Science	Information Technology	Digital Literacy
Theme	Exploring Purple Mash	Pictograms	Presenting Ideas	Grouping and Sorting	Maze Explorers	Questioning	Lego Builders	Animated Story Books	Technology Outside School
Substantive Concepts	- Logging on. Identify and use their own avatar. - Saving work. - Use icons on the tool bar. - Logging out.	- Understand what data is. - Create a pictogram as a visual way to display data. - Ask questions to interrogate the data.	- Know that digital content can be presented in different forms. - Quizzes can be made using programs. - Content should be presented in a suitable way.	- Items can be stored using a range of criteria. - Logical process is used when sorting. - An algorithm is a precise step by step instruction. - Humans can follow algorithms to sort items. - Computers can be used to store on screen objects.	- Move a character using direction keys. - Know that when using direction keys it is called a command. Identify 8 possible direction keys. - Combine number keys with direction keys to give accurate instructions and avoid less command clicks. - Create and debug algorithms.	- Pictograms are of limited use beyond answering questions. - Information can be separated by using yes/no questions. - A binary tree is a simple way to sort information into 2 categories. - Databases are a computerised system that make it easy to search, select and store information. - Databases can be searched by using simple and complex search questions.	- Follow accurate instructions to create a special effect. - Computer programs need precise instructions to follow, called algorithms. - Know that if instructions are vague, outcomes will vary. - The order of instructions effects the result. - Correcting errors in an algorithm is called debugging.	- Differences between e-books and traditional books. - Images can be created within e-book software. - Animations can be included within e-books. - E-book software allows pages to be added and overworked. - Audo can be included within e-books. - Backgrounds can engage the audience. - Text fonts and sizes can be changed to suit the audience.	- Know that technology is used in and out of school. - Know that technology is science and engineering knowledge put into practical use to solve problems or invent useful tools.
Disciplinary Knowledge	- Password safety. - Sort and save work using folders. - Understand why avatars are safer than a real photo. - Locate and open previously saved work using double clicking. - The importance of logging out for safety.	- Collect data and recognise efficient ways to do this. - Interpret and compare a pictogram. - Think of questions we want answers to. - Identify total amounts in different categories. - Create titles and add appropriate images. - Save work.	- Compare and discuss e-books and physical books, concept maps and quizzes. - Compare and discuss digital mind maps and digital fact files. - Recognise the use of digital mind maps. - Open programs. - Recognise some differences in question types. - Identify appropriate formats when presenting.	- Describe physical items to identify sorting. - Identify set criteria used to sort and check against the criteria. - Explain how items have been sorted. - Look at an algorithm a human has followed to sort shapes and compare it to the algorithm a computer program has used to identify correct sorting. - Follow human algorithm. - Follow computer algorithm.	- Open programs. Identify locations. - Formulate and drag instructions. - Run and test instructions to check if they are correct. - Make use of the undo button.	- Creating pictograms. Identify questions we can and cannot ask. - Create questions for physical data. - Recognise that not all yes/no questions work and can limit information. - Design and create a binary tree. - Open programs. Identify and click records that make up a database. - Locate and use the find tool. - Use a drop down list in the search tool.	- Recognise follow and test when instructions have been followed correctly by comparing outcomes. - Recognise and give clear and precise instructions for someone to follow. - Open programs. - Identify when instructions may be incorrect. - Explore possible outcomes for incorrect instructions. - Find simple errors in instructions and correct them. - Recognise when an	- Open programs. Use tool buttons to create an image. - Save work and open previously saved work. Apply animation effects to an image. - Scroll using forward and backward arrow keys. - Record, insert and test sounds. Use the clip art tool. - Locate and use the camera function and insert photos. - Use copy and paste.	- Recognise technologies. - Identify common technology and describe the function. - Explain how technology is helpful.

Vocabulary								
						algorithm has been debugged.		
Alert Avatar Button Device File name Icon Log in Log out Menu Notification MyWork area Private Password	Collect data Compare Data Pictogram Record Results Title	E-book Fact File Fiction Mind Map Node Non-Fiction Presentation Quiz	Criteria Groups Sort Algorithm	Algorithm Challenge Command Direction Instruction Left Right Route Undo Unit	Binary tree Data Database Field Pictogram Question Record Search Sort	Algorithm Code Computer Debugging Instructions Program	Animation Background Clip-art gallery E-book Edit Font Sound Sound effect Text	Computer Technology

CYCLE B - YEAR 2

	AUTUMN		SPRING		SUMMER	
Strand	Digital Literacy	Information Technology	Computer Science	Digital Literacy	Computer Science	Information Technology
Theme	Exploring Purple Mash	Spreadsheets	Coding	Effective Searching	Coding	Creating Pictures
Substantive Concepts	- Logging on. - Identify and use their own avatar. - Saving work. - Use icons on the tool bar. - Logging out.	- Identify features and purposes of a spreadsheet. - Navigate a spreadsheet. - Enter data. - Insert content into a cell. - Use the totalling tool. - Use data to create a block graph.	- Computer programs follow instructions called algorithms. - Single instructions are called commands. - Event, object and action codes can be used together. - Understand debugging is fixing. - Backgrounds and objects can be changed.	- The internet is a global network of computers. - WWW is referring to documents and pages seen when using a browser. - Websites are found using a browser that contains a search engine. - Search engines use millions of digital footprints. - Know how to effective search.	- An algorithm must be followed in order. Programs follow commands in order. - Code can be created that detects when two objects have collided. - Use timers in programs. - A program can use different types of objects. - Events in programs cause a block of code to run. - Bugs are part of codes that stop a program from running. - Debugging is a process of fixing and testing.	- Computer programs contain palettes. - Palettes are a range of colours and shapes. - Painting effects can be combined to make pictures. - Manipulating the size of an onscreen brush tool. - Manipulate the intensity of colours. - Identify the benefits of the fill tool. - Use the pattern tool to create and manipulate patterns.
Disciplinary Knowledge	- Password safety. - Sort and save work using folders. - Understand why avatars are safer than a real photo. - Locate and open previously saved work using double clicking. - The importance of logging out for safety.	- Enter numbers and words. - Navigate cells by clicking or using arrow keys. - Locate the clip art library. - Use the + and = to create simple formulas. - Give titles to a chart. - Label a table.	- Give clear instructions. - Draw and recognise that symbols can represent instructions. - Recognise blocks in 2Code. - Identify and use different buttons. - Execute codes by using the run and stop buttons.	- Recognise a web browser and a search engine. - Review results from a search. - Use search tools on a search engine. - Discuss what a digital footprint is. - Search and compare using words and questions.	- Predict outcomes of planned algorithms. - Recognise and use the collision detection block. - Recognise and use the time and timer after commands. - Recognise and use event time blocks.	- Open a program. - Explore a program and the functions. - Observe how effects can give different results. - Locate and select different tool buttons. - Use a slider tool button.

			- Analyse and arrange blocks. - Create programs using plans.	- Create a leaflet.	- Run and check and test programs. - Stop program and make changes to codes.	- Experiment and manipulate colours. - Combine drawing by using the clip art gallery.
Vocabulary	Alert Button File name Log in Menu MyWork area Password	Avatar Device Icon Log out Notification Private	Calculations Cell Column Data Data table Drag Equals Spreadsheet Graph Row Equals tool Total	Action Scale Algorithm Run Background Code Command Debug Event Execute Input Instructions Object Output Properties Scene Sound When Clicked	Digital footprint Domain Internet Network Search engine Web address Web page Website World Wide Web	Action Algorithm Background Bug Button Click events Collision detection Command Event Debug Execute Implement Instructions Interaction Interval Object Output Properties Run	Art Fill Impressionism Palette Pointillism Style Surrealism

CYCLE A - YEAR 3

	AUTUMN			SPRING		SUMMER	
Strand	Information Technology	Computer Science	Information Technology	Computer Science	Information Technology	Computer Science	Digital Literacy
Theme	Touch Typing	Logo	Animation	Coding	Branching Databases	Micro:bits	Email
Substantive Concepts	-Correct posture when typing. -Know that home, top and bottom rows are where specific keys are located. -Correct hand position on a keyboard.-Left and right hands work independently of each other.	-Representations of shapes, letters and flowers can be created using the repeat command. -Test and debug coding	-Know that some animations are created by hand and others use technology -Onion skinning is a term used in animation -Understand the term stop frame animation and its meaning	-Flow charts are a type of diagram -Times are used in coding -Repeat is a control block and can be repeated a specified number of times -Testing, debugging and fixing are an important part of the process when making computer programs.	-A database is a collection of data organised in a way that it can be searched and information found easily -objects can be sorted using yes/no questions -Branching databases can be created using programs -Test and debug when creating databases	-Know that a microbit is a tiny computer that needs instructions in code. -A microbit can produce outputs. -A microbit can receive inputs. -Code from the coding environment can be transferred to a miocrobit. -The order of instructions is important when coding.	-Know that different methods of communicating have strengths and weaknesses. -Identify that emails are electronic versions of letters. -Use an email system safely. -Attach pictures and documents to an email. -Send an email to multiple people using an address.
Disciplinary Knowledge	-Know to position equipment so eyes are level with monitor. -Place feet on the floor and correct position of wrists when typing.	-Follow simple instructions -Type instructions and use the repeat command -Isolate errors in the output -Identify why errors have occurred	-Make a simple flipbook animation -Create a simple moving object animation -Use the onion skinning tool and talk about speeding the process	-Follow the flow of a chart and interpret what it is presenting -Insert a timer after command in code view -Use a timer every command to make an event happen	-Provide examples of common uses of databases -Sort physical objects using yes/no questions -Insert question text and choice cards -Add images for cards -Plan a branching database	-Identify and use code blocks that create outputs. -Code a microbit to create different outputs.	-Open a program. -Identify key areas of emailing; inbox, alerts, reply, formatting tools. -Open and reply to an email

	-Locate keys on a keyboard. -Use left hand and right hand to type. -Position hands correctly.		-Add sounds and backgrounds to an animation -Create a simple stop frame animation -Present a simple stop frame animation	-Identify and insert the repeat command -Use the knowledge of nesting to help debug a program	-Identify and fix errors	-Identify and use code blocks associated with receiving inputs. -Use event commands. -Use the transfer feature to move code to microbit. -Understand the importance of order when coding. -Use the sleep command to temporarily pause a program. -Use the repeat command within a sequence.	-Compose an email including an address, a subject and a message. -Recognise and report a concerning email. -Identify a trusted contact. -Open a program. -Identify key areas of emailing; inbox, alerts, reply, formatting tools. -Open and reply to an email -Compose an email including an address, a subject and a message. -Recognise and report a concerning email. -Identify a trusted contact.
Vocabulary	Posture Keys Space Bar Typing	Debugging Grid Logo Pen Down Procedure Prediction Pen up Logo Commands	Animation Frames Per Second Frame Onion Skinning Pause Stop Motion	Action Alert Algorithm Background Bug Button Click event Code Collision detected event Command Debug	Binary choice Binary tree Branching database Data Database Debug Record	Accelerometer Animation Data Gestures Hardware Image Infinite loop Input LED Output Program Repeat	Address book Attachment BCC CC Communication Compose Email Inbox Password Personal Information Save to draft Trusted contact

CYCLE B - YEAR 4

	AUTUMN			SPRING			SUMMER	
Strand	Information Technology	Information Technology	Information Technology	Computer Science	Computer Science	Information Technology	Computer Science	Information Technology
Theme	Graphing	Writing for Different Audiences	Making music	Coding	Hardware	Effective Searching	Micro:bits	Presenting
Substantive Concepts	-Computer programs can be used to present data in different ways -Importance of graph types depending on the data -Graphing can be used to help solve problems	-Formatting can affect the impact of a text -Editing the format of text makes a document fit for purpose -Producing documents to meet a brief involves using appropriate formatting	-There are main elements to music including pulse, rhythm, temp, pitch and texture -A piece of music can be altered by changing the rhythm and tempo -A melodic phrase can be created using music software -An electronic piece of music contains the key musical features	-Backgrounds can be changed and manipulated -Selection is a term used in computing programming -If statements are used to create selection -Coordinates can be used to determine the position of a point, shape or object -Repeat until is a control block -If/Else statements are a conditional command that tests a statement -Variables are a virtual container that contain a value that can change	-Different parts make up a computer	-Information can be located on a search engine page -There are different skills needed to search effectively -Websites need to be evaluated to see if the information contained is true and reliable	-Sensor inputs from an accelerometer can be used to detect movement in conjunction with the use of variables -Inputs, outputs and computer code work together to make control systems -Logic is used to make different outputs happen depending on changes in data from a sensor	-Presentation software is a way of creating and displaying information to an audience that is clear -Presentations can be made quickly by using textboxes, word are and images -Presentations can include video, audio, and additional slides -Designs of slides can be changed -Transitions can be applied in between slides -Timings can be applied to transitions
Disciplinary Knowledge	-Compare how data is presented in a table and a graph -Identify most suitable graphs to display data -Collect data in a suitable table -Record data using a suitable graph adding accurate labels and titles -Answer questions using a graph	-Look at a range of fonts in different texts and how it has been used for affect -change the style, colour and alignment of fonts -Type up an event for a newspaper using appropriate formatting choices -Produce a persuasive document using appropriate formatting choices	-Identify and recall a simple rhythm -Create own music focusing on rhythm and tempo -Experiment with pitch using a variety of notes -Create own music focusing on melody and pitch -Create a piece of music combining their knowledge on pitch, rhythm and melody	-Drag and position objects around the design mode screen -Include a background -Interpret flowcharts -Create selection using if statement blocks in a program -identify where x and y coordinates can be changed -Create and execute code with if/else statements and check it runs as expected	-Name the different parts of a computer -Define what is meant by hardware, components and peripherals and describe these different parts -	-Enter a search query -Research the different types of information you can get from a search engine -Enter more advanced search enquires without the need of full sentences -Analyse the contents of a web page for clues about the reliability of information -Understand that a search engine will give results tailored to the interests of the searcher	-Explain that accelerometer is a sensor a microbit has -Combine event, output an d variable code blocks to produce code that makes a microbit change its output -Identify and input the control blocks of code -Use the if/else block of code within a program to create a control system -Use the repeat forever command in conjunction with the if/else block to continually check sensors environmental conditions that will change outputs according to environmental changes	-identify basic layout features of powerpoint -Insert images, word art, text boxes to a slide and delete existing text boxes -Insert new slides -Use the audio and video features to insert audio and videos to a slide -Select and insert images to a slide -Apply an animation to an image -Select and apply suitable transitions to a slide -Apply a duration to an animation and a slide

Vocabulary							
Axis Chart Column Data Graph Investigation Row Sorting Tally chart	Campaign Format Font Genre Opinion Reporter Viewpoint	BPM Dynamics Harmonious Melody Pitch Pulse Rhythm Tempo Texture Synths	Action Alert Algorithm Background Button Code blocks Command Debug Design Execute	Components CPU Graphics card Hard drive Input Motherboard Network card Output Peripherals RAM Software	Balanced view Easter eggs Internet Key words Reliability Results page Search engine	Accelerometer Light sensor Simulation Data Logic Variable Gestures Selection Infinite loop Sensor	Animation Border properties Font formatting Layer Media Presentation Slide Slideshow Text box Transition Word art

CYCLE A - YEAR 5

	AUTUMN			SPRING		SUMMER	
Strand	Information Technology	Information Technology	Computer Science	Computer Science	Computer Science	Computer Science	Information Technology
Theme	Databases	Concept Maps	Networks	Coding	Game Creator	Micro:Bits	Word Processing
Substantive Concepts	-A database can be used to search for information -Users can contribute to collaborative databases -Databases can be created to cover a range of topics and themes	-A computer program can be used to create a concept map -A concept map can be used to retell information and tell stories -Collaborative concept maps allow many users to contribute and share ideas quickly	-Know the difference between the world wide web and the internet -LAN and WAN are different kinds of networks -Know the internet has changed our lives in many ways	-Code can be simplified to complete the same process with less lines of code -A simulation is a model that represents a real or imaginary situation -A timer every command can be used to make code repeat forever -Decomposition is a method of breaking down a task into manageable components -A function is a block of sequence of code that can be accessed when it is needed -Concatenation is the name given to the action of linking things together in a series	-It is important to plan a game before making it -A game design program has specific functions for the designer to use -A finished game must be playable and possible for the player to complete -Evaluation is important so a game can be improved.	-Sensor inputs from the accelerometer can be used to initiate a program -Inputs from the microbit can be used by the program to control the output from the microbit -External equipment such as crocodile clips and electronic circuitry can be attached to the microchip to initiate actions in the program.	-A word processing tool can be used to create a range of documents and know how to navigate around them -Images can be added to a document -Images can be edited in -The look of a text within a document can be changed -Googledocs can easily be shared with other people -Tables can be used to present information in a document -
Disciplinary Knowledge	-Enter data using words and numbers -Sort, group and arrange information in databases -Answer questions involving the interrogation of a database -Ask questions to encourage peers to interrogate a database	-Define a concept as an idea in the form of a question -Create a physical concept map -Add nodes to the map, understanding that they represent concepts or ideas -Connect nodes together using a connection line and that arrows can be used to	-Carry our a survey about the internet and communication -Recall different ways we use the internet at home and at school -Talk about connected devices used in school and home	-Convert an algorithm plan into a program on 2code -Recognise when the timer every command could be used and incorporate it into a program -Use planning to create a program	-Research what would make appropriate textures for aspects of a game -Design and add appropriate graphical elements to the game -Add in game music -Use knowledge to create at least three levels -Write clear instructions	-Create a variable -Combine event, output and variable code blocks to produce code that makes a microbit change its output based on environmental changes -Create a simple piece of code that simulates a control system	-Type sentences, using caps lock and shift -use the undo and redo functions -Switch between portrait and landscape mode -Search for files online -Edit, crop and resize an image

	-Choose a suitable topic and set up a database with appropriate fields -Write questions using their database for peers to answer -Use databases to answer questions from their peers	organise the data on the concept map -Create a piece of text using nodes as a basis for their writing -Make a concept map collaborative -Contribute to a collective concept map	-Talk about wireless networks and key hardware -Write about the history of the internet and Tim Berners Lee -Consider how the internet has changed things in their own lifetime	-When planning a program, used abstraction to remove unnecessary complications -Include the call function command as part of an event -Demonstrate concatenation in other programs created	that set a scene and provide game play instructions for the user -Evaluate games made by their peers -Make appropriate improvements to their game	-Connect crocodile clips to the microbit pins anticipating what action will initiate input to the microbit -Write code that responds to input in the pins	-Use style options to change the appearance of an image -Add in headings and subheadings -Insert boxes and shapes -Add in hyperlinks -Use the share button and add in an email address of who they want to share it with -Insert a table -Merge, unmerge, add and distribute rows and columns on a table -Use the spelling and grammar check
Vocabulary	Condition Data Database Edit Field Filter Group Linked tables Operator Query Record Sort Validation	Concept Concept map Connection Collaborate Node Presentation mode Story mode	Hub/switch Internet Local area network Network World wide web Router	Abstraction Action Algorithm Concatenation Debug Decomposition Efficient Flowchart	Animation Image Texture Computer game Instructions Perspective Customise Interactive Evaluation Screenshot Playability	Accelerometer Input Selection Crocodile clip LED Sensor Data Logic Simulation Gestures Output Variable If/then Pins	Copy Paste Copyright Creative commons Cursor Document Font Hyperlink Merge cells Page orientation Formatting Word processing tool Text wrapping Word art

CYCLE B - YEAR 6

	AUTUMN		SPRING		SUMMER	
Strand	Digital Literacy	Information Technology	Computer Science	Information Technology	Computer Science	Information Technology
Theme	Blogging	Quizzing	Coding	3D Modelling	Micro:bits	Spreadsheets
Substantive Concepts	-A blog is an online vehicle for displaying thoughts and ideas in an informal style -Importance of planning the theme of the blog before writing	-Levels, interests and capabilities of an audience -A range of software tools used for creating quizzes -A quiz can be made to teach students how to interrogate a data base	-Number elements combined with a number variable and an if/else statement can be used to create an onscreen countdown timer -The coordinates of objects can be used in code such as moving the position of them	-3D modelling can be done via a computer program -Moving points changes the appearance of a 3D model -A 3D design program can be used to meet a design brief -Models need refining before they are printed out using a standard printer or 3D printer		-There are key features of a spreadsheet, and they can enter data into cells -Formulae can be entered into a spreadsheet, and this can save time and make working more efficient

	-People can contribute to blogs by adding posts -Blog posts can be written by others and commented on	-A range of questions can be used to produce a quiz linked to a curriculum area	-Tabs can be used to help organise code -Flowcharts can represent procedures within a program -Input is defined by information going into a computer. Inputs could consist of pressing a key, swiping a screen, clicking an object on the screen with a mouse or typing using the keyboard			-Sheets can make complex data clear by manipulating the way it is presented -Formulae can be used for percentages, averages, max and min in spreadsheets -A spreadsheet program can display a variety of graphs and charts -Their spreadsheet skills can be used to solve problems
Disciplinary Knowledge	-Explain the difference between a vlog and a blog -Talk about the features of a blog -Plan a blog post using a concept map -Create and publish a blog post -Add a comment to a blog post written by another pupil	-Design a quiz to meet a specific brief -Use a range of question types in the software to create a quiz -Add in a front screen with clear instructions and sound -Create and evaluate a grammar skills quiz -Complete a ready made quiz using a data base -Design a curriculum based game show style quiz	-Incorporate a restart command at the end of the if/else statement -Set an object's x and y coordinates to equal those of another object -Assign an activity or choose a webpage for the launch command -Recognise how tabs are useful when creating programs and during the debugging process -Interpret flowcharts which show procedures for a simulation -Test a program alongside procedures on a flowchart to see whether the program is running as expected -Plan own text adventures and adapt given code to support in creating own text adventure	-Define what a 3D model is -Design a house using the 3D program -Design a vehicle to meet a design brief -Use a regular polygon and then add points to the model to change its appearance -Refining a model is important prior to the final printing process -Print their model onto paper/card or via a 3D printer		-Enter data into cells of the chosen program -Navigate around a sheet by clicking in a cell or typing cell reference -Use formulae to change calculations automatically when data entered is changed -Use the sum feature when typing a formula -Enter header titles into a sheet -Split cells for ease -Create a range of graphs and charts depending upon the version being used -Print a spreadsheet or a selection of the data
Vocabulary	Approval Archive Blog Blog post Collaborative Commenting Vlog	Audience Audio Case-sensitive Cloze Participants Preview Quiz Survey	Action Algorithm Command Co-ordinates Event Decomposition Execute/run Debug Flowchart Function Object Output Properties Predict Procedure Repeat Sequence Selection Simulation Variable Timer Tab	2D 3D 3D Printing CAD-Computer aided design Design brief NET Points Pattern fill Template		Autofit Cell Cell reference Chart Column Computational model Conditional formatting Data Delimiter Formula Formula bar Graph Horizontal axis Range Row Spreadsheet Vertical axis Text wrapping