

Year 1 Declarative knowledge (what I know/ acquisition of skill) Procedural knowledge (application of knowledge and skills)		
Autumn 1	Spring 1	Summer 1
<p>Networks – Technology around us</p> <p>I can explain with examples how technology helps us.</p> <p>I can recognise that a computer is an example of technology.</p> <p>I understand that choices are made with technology, and this is why rules are important.</p> <p>I can choose a piece of technology to do a job, recognising that technology can be used in different ways.</p> <p>I can identify and use parts (including a mouse and keyboard) of a computer</p> <p>I can show how to use technology safely</p>	<p>Programming – Moving a Robot</p> <p>I can recognise, explain and match a command to an outcome.</p> <p>I understand that a program is a set of commands that a computer can run.</p> <p>I understand that a series of instructions can be issued before they can be enacted.</p> <p>I can predict and then run my command on a floor robot.</p> <p>I can choose a series of commands that can be run as a program.</p> <p>I can build a sequence of commands that can be run a program on a device.</p>	<p>Programming B – Programming animations</p> <p>I can explain what a command does.</p> <p>I understand that a program is a set of commands a computer can run.</p> <p>I can recall that a series of instructions can be issued before they are enacted.</p> <p>I can predict the outcome of a command on a device.</p> <p>I can build a sequence of commands in a program.</p>
<p>Vocabulary</p> <p>Computer, mouse, trackpad, keyboard, screen, technology, double-click, typing</p>	<p>Key vocabulary</p> <p>Forwards, backwards, turn, clear, go, commands, instructions, directions, left, right, plan, algorithm, program, route.</p>	<p>Key vocabulary</p> <p>Commands, move, forwards, backwards, left, right, sprite, algorithms,</p>
Autumn 2	Spring 2	Summer 2
<p>Creating Media – Digital Painting</p> <p>I can explain what different freehand tools do, including how computers can be used to create art.</p> <p>I understand how to adjust a tool to suit my needs, deciding on the appropriate tool for use and considering the impact of my choices.</p> <p>I can compare painting used with a computer with painting with brushes.</p> <p>I can create a picture using freehand tools, shape and line.</p> <p>I can use a range of paint colours and use the fill tool when needed.</p> <p>I can use the undo button to correct a mistake.</p>	<p>Creating Media – Digital Writing</p> <p>I understand that a keyboard enters text and changes the output of a key.</p> <p>I know that text can be edited and changed.</p> <p>I can consider the impact of choices made.</p> <p>I can use a keyboard to enter or remove text, including letters, numbers or special characters.</p> <p>I can select and change the position of text in a document.</p> <p>I can choose options to achieve a desired effect including changing the appearance of text.</p>	<p>Data Handling – Grouping Data</p> <p>I can recognise that objects can be counted.</p> <p>I understand ways that information can be presented in different ways.</p> <p>I can collect simple data and show that collected data can be counted.</p> <p>I can group objects to answer questions, understanding that objects can be grouped by similarities (attribute).</p> <p>I can describe a group of objects (based on commonality).</p>
<p>Key vocabulary</p> <p>paint program, tool, paintbrush, erase, fill, undo, Piet Mondrian, primary colours, shape tools, line tool, fill tool, undo tool, Henri Matisse, Wassily Kandinsky, feelings, colour, brush style, Georges Seurat, pointillism, brush size</p>	<p>Key vocabulary</p> <p>Capital letters, toolbar, bold, italic, underline, keyboard, shift, undo, mouse, select, font, text cursor, word processor, letter, type, redo, format, drag.</p>	<p>Key vocabulary</p> <p>Object, label, group, search, image, property, colour, size, shape, value, data set, more, less, most, fewest, the same.</p>

Year 2 <i>Declarative knowledge (what I know/ acquisition of skill)</i> <i>Procedural knowledge (application of knowledge and skills)</i>		
Autumn 1	Spring 1	Summer 1
<p>Networks – IT around us</p> <p>I can recognise different types of computers used in school.</p> <p>I can recognise and discuss the features of information technology.</p> <p>I can explain how information technology benefits us.</p> <p>I can describe uses of computers.</p> <p>I can identify information technology in and beyond school.</p> <p>I can show how to use information technology safely.</p>	<p>Creating Media – Digital Photography</p> <p>I can recognise that some digital devices can capture images using a camera.</p> <p>I can discuss photographs including their composition, how to take them and ways to use them, digitally.</p> <p>I can explain how to improve photographs, including the use of light.</p> <p>I know that some photos are not accurate.</p> <p>I can capture a digital image, in either landscape or portrait mode.</p> <p>I can use the zoom on the camera to change the composition of the photos and consider the use of light before taking my photo.</p> <p>I can use filters to edit the appearance of the photo.</p>	<p>Data Handling – Pictograms</p> <p>I can use a tally chart to collect data, suggesting appropriate headings.</p> <p>I can use a computer program to present information, in different ways, explaining my reasoning in each case.</p> <p>I can give examples of why some information should not be shared.</p> <p>I can enter and view data on a computer.</p> <p>I recognise that people, animals and objects can be described by attributes.</p> <p>I can use a computer to answer single-attribute and comparison questions.</p>
<p>Key vocabulary</p> <p>Information technology, computer, barcode, scanner, scan,</p>	<p>Key vocabulary</p> <p>Device, camera, photograph, capture, image, digital, landscape, portrait, framing, subject, compose, light sources, flash, focus, background, editing, filter, format</p>	<p>Key vocabulary</p> <p>More than, less than, most, least, organise, data, object, tally chart, votes, total, Pictogram, enter, data, tally chart, compare, count, pictogram, tally, more common, less common, attribute, same, most popular, least popular, conclusion, sharing, data</p>
Autumn 2	Spring 2	Summer 2
<p>Programming – Robots</p> <p>I can recall words that can be enacted.</p> <p>I can explain commands, matching them to their appropriate outcome.</p> <p>I understand that a program is a set of commands that can run.</p> <p>I can predict and run a command on a given device.</p> <p>I can list commands, giving commands for a given purpose.</p> <p>I can choose a series of commands that can be run as a program, building a sequence of commands in steps.</p> <p>I can run a program on a device.</p>	<p>Programming B – Quizzes</p> <p>I can describe a series of instructions as a 'sequence' I understand that a series of instructions can be issued before they are enacted.</p> <p>I understand how to use logical reasoning to predict the outcome of a program.</p> <p>I can choose a series of words and commands that can be enacted as a sequence or a program.</p> <p>I can make and test a prediction.</p> <p>I can create, debug and run a program that I have written.</p>	<p>Creating Media – Making Music</p> <p>I can identify computers can be used to play sounds of different instruments that may be represented as patterns.</p> <p>I can compare music played on a computer with music played on an instrument.</p> <p>I can experiment with musical sounds and patterns on a computer.</p> <p>I can use a computer to create a pattern, rhythm, and a melody on a theme.</p> <p>I can evaluate and improve music composed on a computer.</p>
<p>Key vocabulary</p> <p>Forwards, backwards, turn, clear, go, commands, instructions, directions, left, right, turn, plan, algorithm, program, route, plan.</p>	<p>Key vocabulary</p> <p>Sequence, command, debug, run, outcome, predict, blocks, sprite, algorithm, design, sequence, modify, change, build, compare, evaluate, features</p>	<p>Key vocabulary</p> <p>Music, planets, Mars, Venus, war, peace, quiet, loud, feelings, emotions, pattern, rhythm, Neptune, pitch, tempo, notes, create, pitch, pulse/beat, tempo, instrument, rhythm, notes, open, edit</p>

Year 3 <i>Declarative knowledge (what I know/ acquisition of skill)</i> <i>Procedural knowledge (application of knowledge and skills)</i>		
Autumn 1	Spring 1	Summer 1
<p>Networks – Connecting Computers</p> <p><i>I understand that computers need input and output devices.</i></p> <p><i>I can identify how devices in a network are connected to one another.</i></p> <p><i>I know the benefits of computer networks.</i></p> <p><i>I can identify input and output devices and explain the processes they do.</i></p> <p><i>I can identify network devices around me and how they connect to one another.</i></p> <p><i>I can explain how switches, servers and wireless access points can be used in a network to share information.</i></p>	<p>Creating Media – Animations</p> <p><i>I understand how text and images can be structured, using placeholders, to convey information.</i></p> <p><i>I can consider how different document layouts can suit different purposes.</i></p> <p><i>I understand the benefits and reasons why I might use a DTP application.</i></p> <p><i>I can add, delete, resize, and rotate images to and from placeholders in a document.</i></p> <p><i>I can add, edit, and change text, applying appropriate fonts, sizing and styles to suit the purpose of the document.</i></p> <p><i>I can reorientate a page, organising placeholders to suit the purpose and review my document, making changes where necessary.</i></p>	<p>Data and information – Branching Databases</p> <p><i>I can explain that a branching database is an identification tool and explain how it works.</i></p> <p><i>I can identify attributes that you can ask yes/ no questions about.</i></p> <p><i>I can suggest real-world applications for branching databases.</i></p> <p><i>I can create questions with yes/no answers.</i></p> <p><i>I can choose questions that will divide objects into evenly sized smaller groups.</i></p> <p><i>I can identify an object using a branching database and retrieve information from different levels of the database.</i></p>
<p>Key Vocabulary</p> <p>Network, data, server, wireless access points (WAPs), network switch, router, input, process, output, Wi-Fi, Bluetooth.</p>	<p>Key vocabulary</p> <p>Text, image, font, resize, orientation, portrait, landscape, placeholder, edit, template, layout, desktop publishing (DTP)</p>	<p>Key vocabulary</p> <p>Branching database, attribute/ property, yes/ no questions, data, information.</p>
Autumn 2	Spring 2	Summer 2
<p>Programming A – Sequence</p> <p><i>I can identify a program includes sequence of commands.</i></p> <p><i>I can explain that the order of commands can affect a program's output.</i></p> <p><i>I can identify that different sequences can achieve different outputs, or the same output.</i></p> <p><i>I can build a sequence of commands.</i></p> <p><i>I can combine and order commands in a program.</i></p> <p><i>I can create a sequence of commands to produce a given outcome.</i></p>	<p>Programming B – Events and actions</p> <p><i>I can explain what a sequence is, and understand its process.</i></p> <p><i>I understand that a program includes sequences of commands.</i></p> <p><i>I can explain that the order of commands/ sequences can affect a program's output.</i></p> <p><i>I can build, combine and correctly order commands in a sequence, to produce a desired output.</i></p> <p><i>I can change the sequence of a program to make it more efficient.</i></p>	<p>Creating Media – Desktop Publishing</p> <p><i>I can consider how different layouts can suit different purposes (landscape versus portrait)</i></p> <p><i>I understand what placeholders are and how they can help to structure a document.</i></p> <p><i>I can recognise how different font styles and effects are used for particular purposes.</i></p> <p><i>I can add and organise text and image placeholders in a page layout, using a suitable style (landscape or portrait).</i></p> <p><i>I can add and remove images and text, to and from placeholders.</i></p> <p><i>I can edit font size and apply effects to it and move/ resize images in placeholders.</i></p>
<p>Key vocabulary</p> <p>Debug, sequence, decompose, selection, variables, output, algorithms, programs, code, block-based coding, scratch, sprite, staging area, code block, run, event block, control blocks.</p>	<p>Key vocabulary</p> <p>Sequence, sprite, event, action, program, pen, stage, algorithms, selection, repetition, code, debug, output.</p>	<p>Key vocabulary</p> <p>Layout, landscape, portrait, placeholders, font, style, edit, right click, left click, group/ ungroup</p>

Year 4 Declarative knowledge (what I know/ acquisition of skill) Procedural knowledge (application of knowledge and skills)		
Autumn 1	Spring 1	Summer 1
<p>Networks – Computer systems and networks.</p> <p>I can describe how networks connect and communicate with each other and that together, the global interconnection of networks makes up the Internet. I recognise that the World Wide Web (WWW) is a collection of websites and webpages, and that the Internet enables us to view these. I understand that the WWW content can be created by anyone and shared with everyone.</p> <p>I can describe what the Internet is, and how devices physically connect.</p> <p>I can explain what the World Wide Web is, and the difference between it and the Internet.</p> <p>I can explain the different types of content that can be created for the WWW and evaluate its reliability, the usefulness of content created, and the consequence of unreliable content.</p>	<p>Data Handling – data and information logging</p> <p>I can recognise that sensors can be used to gather data to answer a specific question.</p> <p>I understand what type of data to collect in order to answer a specific question.</p> <p>I can explain that a data logger captures data from specific points in time, using an appropriate environmental sensor.</p> <p>I know where to place a sensor to collect specific data to answer a question.</p> <p>I can identify a time frame and appropriate sensor to use, in order to capture data to answer a specific question.</p> <p>I can collect, analyse, evaluate and present data, in order to answer a specific question.</p>	<p>Creating media – photo editing</p> <p>I can recognise that images can be changed for different purposes.</p> <p>I can recognise that not all images are real, and that they can be manipulated.</p> <p>I can consider the impact of the changes made on the quality of the image.</p> <p>I can change the composition of the images, including arranging images, cropping images and editing out a part of an image.</p> <p>I can apply changes to the whole image or part of it, including adjusting colours, adding filters, adding effects, retouching.</p> <p>I can add to an image, including drawing, add text, add an element (e.g.: borders, etc.)</p>
<p>Key vocabulary</p> <p>Network, data, World Wide Web, Internet, web page, website, content, media, copywrite.</p>	<p>Key vocabulary</p> <p>Sensor, data, information, data-logger, time-frame, input, output</p>	<p>Key vocabulary</p> <p>Image, filters, cropping, editing, composition, select, group, clone.</p>
Autumn 2	Spring 2	Summer 2
<p>Creating media – photo editing</p> <p>I can recognise that images can be changed for different purposes.</p> <p>I can recognise that not all images are real, and that they can be manipulated.</p> <p>I can consider the impact of the changes made on the quality of the image.</p> <p>I can change the composition of images, including arranging images, cropping images, and editing out part of an image.</p> <p>I can apply changes to the whole image or part of an image, including adjusting colours, adding filters, adding effects, retouching.</p> <p>I can add to an image, including drawing, add text, add an element (e.g.: borders, etc)</p>	<p>Programming B – repetition in games</p> <p>I understand that a loop command can be used to repeat instructions in a program.</p> <p>I understand that you can program a loop to stop after a specific number of times.</p> <p>I can explain the importance of instruction order in a loop and justify when to use a loop and when not to.</p> <p>I can use an indefinite (forever) loop in a program, to produce a given outcome.</p> <p>I can use a count-controlled loop (e.g.: repeat x 10) in a program, to produce a given outcome.</p> <p>I can create two or more sequences of code in a program, that run at the same time.</p>	<p>Programming – repetition</p> <p>I can understand and identify 'loops' of repeated code within programs as repeating sets of instructions.</p> <p>I know that looped code within programs can run for an indefinite amount of time, or a specified number of times.</p> <p>I can choose when to use a looped instruction in my program and justify its use.</p> <p>I can use a controlled loop or an indefinite loop to produce a specified output.</p> <p>I can plan a program that includes loops to produce a given outcome.</p> <p>I can create two or more sequences that can run at the same time.</p>
<p>Key vocabulary</p> <p>Image, filters, cropping, editing, composition, select, group, clone.</p>	<p>Key vocabulary</p> <p>Repetition, loop, indefinite, count-controlled, sequence, algorithm, sprite, debug.</p>	<p>Key vocabulary</p> <p>Loops, count-controlled loops, infinite loops, repetition, algorithms, logo, input, output.</p>

Year 5 Declarative knowledge (what I know/ acquisition of skill) Procedural knowledge (application of knowledge and skills)		
Autumn 1	Spring 1	Summer 1
<p>Networks – sharing information.</p> <p>I understand that a computer system is a collection of inputs, processes and outputs, and how they play a role in our lives.</p> <p>I understand that computers have protocols and rules to follow, so that information can be shared over the internet, using ‘packets’ of information.</p> <p>I can understand the benefits of computers in our lives and ow they enable collaborative projects.</p> <p>I can identify inputs, processes, and outputs in a variety of computer systems.</p> <p>I can explain how computers “talk” to one another, across a network system in different countries, using ‘packets’ of information or data.</p> <p>I can use a computer system to collaborate a project.</p>	<p>Programming B – Selection in quizzes</p> <p>I understand that a condition can only be true or false</p> <p>I can explain the difference between a count-controlled loop (e.g.repeat until x=10, then stop all)</p> <p>I understand that a loop can be used to repeatedly check whether a condition (if...then...else) has been met.</p> <p>I can choose a condition to use in a program.</p> <p>I can create a condition-controlled loop (e.g., repeat until x=10, then stop all)</p> <p>I can use a condition in an ‘if...then..else..’ statement to start an action, in order to switch program flow in one of two ways.</p>	<p>Creating media – vector drawing</p> <p>I understand what a vector drawing is, and that different tools can be used to modify them.</p> <p>I know that objects can be layered and grouped, or sent backwards/ forwards and how to do this.</p> <p>I know that a vector images can be modified in a variety of ways, without impacting on quality, and can demonstrate this.</p> <p>I can describe a vector drawing and create it as a 2D drawing on a screen.</p> <p>I can group and layer objects on a screen and evaluate the impact of my choices.</p> <p>I can use a variety of modifying tools to change a vector drawing, by selecting, rotating, dragging, repositioning, adding, recoloring, resizing and grouping objects</p>
<p>Key vocabulary</p> <p>Internet, computer system, packet, data, network, router, network switch, wifi, world wide web, input, output, process, IP address</p>	<p>Key vocabulary</p> <p>Algorithm, sequence, repetition, selection, loop, condition, count-controlled loop, condition-controlled loop.</p>	<p>Key vocabulary</p> <p>Vector drawing, layer, group, modify, 2D objects.</p>
Autumn 2	Spring 2	Summer 2
<p>Creating media – video editing</p> <p>I can identify the key concepts of video composition.</p> <p>I can explain why I need to plan and create a video storyboard, capture video according to my plan and edit my finished product.</p> <p>I recognise how to identify improvements to my video and can consider the effect of editing choices made.</p> <p>I can use a video recording device to carry out the following functions: recording, panning, focussing, zooming and editing specific recording effects (e.g. Filters.)</p> <p>I can locate, playback and transfer/ export video I have recorded.</p> <p>I can edit video using the following functions, justify my choices: selecting specific sections, applying effects, deleting sections, splitting sections, cropping sections of video.</p>	<p>Programming – selection</p> <p>I understand sequence, selection and repetition in programming.</p> <p>I understand that a conditional statement, using ‘If... then...’ statements can either be true or false.</p> <p>I understand that a loop can be used to check whether a condition has been met or not, and that it can stop when the condition has been met.</p> <p>I can define sequence as being the order of instructions in a program, selection as being the outcome of a conditional statement, and repetition as a count-controlled loop in a program, which stops when a condition is met.</p> <p>I can use a condition in an ‘if... then..’ statement to produce a given outcome, and then show that a condition can switch program flow in one of two ways.</p> <p>I can experiment with a ‘repeat until’ loop, changing counts and events within the loop.</p>	<p>Data handing – flat file databases</p> <p>I can explain that a computer program can be used to organise data.</p> <p>I can outline how operands (questions) can be used to filter data, and outline how ‘AND’ and ‘OR’ can be used to refine selection.</p> <p>I can explain that we present information to communicate a message and that computer programs can be used to compare data visually.</p> <p>I can choose different ways to view data, and choose which attribute and value to search b, to answer a given question (operand).</p> <p>I can choose multiple criteria to search data, in order to answer a given question (AND and OR).</p> <p>I can select an appropriate graph to visually compare data, and choose suitable ways to present data to other people.</p>
<p>Key vocabulary</p> <p>Storyboard, panning, zooming, editing, filters, cropping, exporting.</p>	<p>Key vocabulary</p> <p>Crumble controller, scratch, algorithm, sequence, selection (if.. then...statements), repetition, loop, count-controlled or infinite loop, conditional statement, LED, sparkle, debug</p>	<p>Key vocabulary</p> <p>Operand, data, information, selection., field, parameter, flat-file database.</p>

Year 6 Declarative knowledge (what I know/ acquisition of skill) Procedural knowledge (application of knowledge and skills)		
Autumn 1	Spring 1	Summer 1
<p>Networks – Communication</p> <p>I understand that there are a number of search engines and I can explain how search results are found, ordered and 'ranked'</p> <p>I understand why the order of results is important, and to whom, and understand some of the limitations of search engines.</p> <p>I can define 'communication' and discuss the opportunities that technology offers for communication.</p> <p>I can compare different search engines and explain why search results might be different, when searching for the same thing.</p> <p>I can evaluate the results of search terms and identify those results from search engines can include adverts, and that the adverts can be targeted at specific audiences.</p> <p>I can identify ways to communicate without technology and evaluate different methods of online communication effectively.</p>	<p>Programming B – sensing</p> <p>I know that a variable is something that can be changed, in a program.</p> <p>I know variables have specific names and can be used by programs to change outcomes.</p> <p>I know how to use sequence, selection and repetition in code I write, to design a program which produces a specific outcome.</p> <p>I can design and write a program which uses inputs on a device or emulator to achieve a specified output.</p> <p>I can use logical reasoning to explain how my program works.</p> <p>I can spot error in my code, debug them and suggest improvements.</p>	<p>Data Handling – spreadsheets</p> <p>I can explain what data is, and that it needs a context.</p> <p>I know a range of the different types of software that deal with and organise data.</p> <p>I can organise and present data appropriately and effectively, evaluating my data presentation and results in comparison to the questions asked.</p> <p>I can give examples of data types and contexts in which they may be used.</p> <p>I can identify and use data handling software and input, present and evaluate data.</p> <p>I can apply formulas to data, explaining how my data presentation represents the answer to a specific question.</p>
<p>Key vocabulary</p> <p>Address bar, search box, World Wide Web, search engine, web crawler, page rank, ranking, communication, search terms.</p>	<p>Key vocabulary</p> <p>MicroBit, emulator, input, sensor, output, step counter, conditional statement, sequence, selection, repetition, variable</p>	<p>Key vocabulary</p> <p>Data, spreadsheet, cell, formula, select, duplicate, input, output, column, row, format</p>
<p>Autumn 2</p> <p>Creating Media – website creation</p> <p>I understand that a website is a set of hyperlinked web pages and understand that the relationship between HTML and what appears on the webpage.</p> <p>I can consider the ownership and use of images (copyright) on a website.</p> <p>I understand the need for a navigation pathway in webpage design.</p> <p>I can review an existing webpage (navigation bars, header)</p> <p>I can create a new blank webpage and add text, images, change styles of font, and embed media.</p> <p>I can insert hyperlinks between pages and links to another site.</p>	<p>Spring 2</p> <p>Programming A – variables</p> <p>I know that a variable is something that can be changed in a program.</p> <p>I can identify variables and recognise that variables can be letters or numbers.</p> <p>I know that variables have specific names and can be used by programs to change outcomes.</p> <p>I can identify variables in existing programs and experiment with changing them.</p> <p>I can decide where in a program to set a variable and use an event to update it.</p> <p>I can use a variable in a condition statement to control the flow of a program.</p>	<p>Summer 2</p> <p>Creating Media – 3D Modelling</p> <p>I can recognise that a 3D environment can be viewed from different perspectives.</p> <p>I can show how placeholders can create holes in 3D objects.</p> <p>I can recognise that artefacts can be broken down into a collection of 3D objects.</p> <p>I can position 3D shapes and use digital tools to modify 3D objects.</p> <p>I can use digital tools to accurately size 3D objects and combine them to create a 3D digital artefact.</p> <p>I can construct a 3D model which reflects a real world object.</p>
<p>Key vocabulary</p> <p>Webpage, HTML, hyperlink, navigation pathway, header, links, copyright, fair use.</p>	<p>Key vocabulary</p> <p>Sequence, selection, repetition, variable, program, algorithm, string, outcome, abstraction.</p>	<p>Key vocabulary</p> <p>Perspective, 3D, digital tool, artefact, object, placeholder.</p>