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Computing Curriculum Progression

Purpose: A high-quality computing education equips pupils to use computational thinking and creativity to understand and change the world. Computing has deep links with mathematics, science, and design and technology, and provides insights into both natural and artificial systems. The core of computing is computer science, in which pupils are taught the principles of information and computation, how digital systems work, and how to put this knowledge to use through programming. Building on this knowledge and understanding, pupils are equipped to use information technology to create programs, systems and a range of content. Computing also ensures that pupils become digitally literate – able to use, and express themselves and develop their ideas through information and communication technology – at a level suitable for the future workplace and as active participants in a digital world.

Opportunities	KS1		KS2			
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Breadth of Study	<ul style="list-style-type: none"> understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following precise and unambiguous instructions create and debug simple programs use logical reasoning to predict the behaviour of simple programs use technology purposefully to create, organise, store, manipulate and retrieve digital content recognise common uses of information technology beyond school use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies 		<ul style="list-style-type: none"> design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts use sequence, selection, and repetition in programs; work with variables and various forms of input and output use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs understand computer networks, including the internet; how they can provide multiple services, such as the World Wide Web, and the opportunities they offer for communication and collaboration use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact 			



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Knowledge and Understanding	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	<p>Computing systems and networks – Technology around us To identify technology To identify a computer and its main parts To use a mouse in different ways To use a keyboard to type</p> <p>Creating media – digital painting To use the keyboard to edit text To create rules for using technology responsibly To describe what different freehand tools do To use the shape tool and the line tools To make careful choices when painting a digital picture To explain why I chose the tools I used To use a computer on my own to paint a picture To compare painting a picture on a computer and on paper</p> <p>Creating Media – Digital writing To use a computer to write To add and remove text on a computer To identify that the look of text can be changed on a computer To make careful choices when changing text</p>	<p>Computing systems and networks - Information Technology around us To recognise the uses and features of information technology To identify information technology in the home To identify information technology beyond school To explain how information technology benefits us To show how to use information technology safely To recognise that choices are made when using information technology</p> <p>Creating media – Digital photography To know what devices can be used to take photographs To use a digital device to take a photograph To describe what makes a good photograph To decide how photographs can be improved To use tools to change an image To recognise that images can be changed</p> <p>Creating media – Making music</p>	<p>Computing systems and networks – Connecting computers To explain how digital devices function To identify input and output devices To recognise how digital devices can change the way we work To explain how a computer network can be used to share information To explore how digital devices can be connected To recognise the physical components of a network</p> <p>Creating media – Animation: To explain that animation is a sequence of drawings or photographs To relate animated movement with a sequence of images To plan an animation To identify the need to work consistently and carefully To review and improve an animation To evaluate the impact of adding other media to an animation</p> <p>Creating media – Desktop publishing</p>	<p>Computing systems and networks – The Internet To describe how networks physically connect to other networks To recognise how networked devices make up the internet To outline how websites can be shared via the World Wide Web To describe how content can be added and accessed on the World Wide Web To recognise how the content of the WWW is created by people To evaluate the consequences of unreliable content</p> <p>Creating media – Audio editing To identify that sound can be digitally recorded: To use a digital device to record sound: To explain that a digital recording is stored as a file: To explain that audio can be changed through editing: To show that different types of audio can be combined and played together: To evaluate editing choices made:</p> <p>Creating media – Photo editing</p>	<p>Computing systems and networks – Sharing information To explain that computers can be connected together to form systems To recognise the role of computer systems in our lives To recognise how information is transferred over the internet To explain how sharing information online lets people in different places work together To contribute to a shared project online To evaluate different ways of working together online</p> <p>Creating media – Vector drawing To identify that drawing tools can be used to produce different outcomes To create a vector drawing by combining shapes To use tools to achieve a desired effect To recognise that vector drawings consist of layers To group objects to make them easier to work with To evaluate my vector drawing</p> <p>Creating media – Video editing</p>	<p>Computing systems and networks – Communication To identify how to use a search engine To describe how search engines select results To explain how search results are ranked To recognise why the order of results is important, and to whom To recognise how we communicate using technology To evaluate different methods of online communication</p> <p>Creating media – 3D Modelling To use a computer to create and manipulate three-dimensional (3D) digital objects To compare working digitally with 2D and 3D graphics To construct a digital 3D model of a physical object To identify that physical objects can be broken down into a collection of 3D shapes To design a digital model by combining 3D objects To develop and improve a digital 3D model</p> <p>Creating media – Web page creation</p>



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<p>To explain why I used the tools that I chose To compare writing on a computer with writing on paper</p> <p>Grouping data To label objects To identify that objects can be counted To describe objects in different ways To count objects with the same properties To compare groups of objects To answer questions about groups of objects</p> <p>Programming a robot (Task, design, code, running the code) To explain what a given command will do To act out a given word To combine forwards and backwards commands to make a sequence To combine four direction commands to make sequences To plan a simple program To find more than one solution to a problem</p>	<p>To say how music can make us feel To identify that there are patterns in music To describe how music can be used in different ways To show how music is made from a series of notes To create music for a purpose To review and refine our computer work</p> <p>Data and information – Pictograms To recognise that we can count and compare objects using tally charts To recognise that objects can be represented as pictures To create a pictogram To select objects by attribute and make comparisons To recognise that people can be described by attributes To explain that we can present information using a computer</p> <p>Programming – Robot algorithms To describe a series of instructions as a sequence To explain what happens when we change the order of instructions To use logical reasoning to predict the outcome of a program (series of commands) To explain that programming projects can have code and artwork To design an algorithm</p>	<p>To recognise how text and images convey information To recognise that text and layout can be edited To choose appropriate page settings To add content to a desktop publishing publication To consider how different layouts can suit different purposes To consider the benefits of desktop publishing</p> <p>Data and information – Branching databases To create questions with yes/no answers To identify the object attributes needed to collect relevant data To create a branching database To explain why it is helpful for a database to be well structured To identify objects using a branching database To compare the information shown in a pictogram with a branching database</p> <p>Programming – Sequence in music To explore a new programming environment To identify that commands have an outcome</p>	<p>To explain that digital images can be changed To change the composition of an image To describe how images can be changed for different uses To make good choices when selecting different tools To recognise that not all images are real To evaluate how changes can improve an image</p> <p>Data and information – Data logging To explain that data gathered over time can be used to answer questions To use a digital device to collect data automatically To explain that a data logger collects 'data points' from sensors over time To use data collected over a long duration to find information To identify the data needed to answer questions To use collected data to answer questions</p> <p>Programming A – Repetition in shapes To identify that accuracy in programming is important To create a program in a text-based language To explain what 'repeat' means To modify a count-controlled loop to produce a given outcome</p>	<p>To identify digital devices that can record video To capture video using a digital device To recognise the features of an effective video To identify that video can be improved through reshooting and editing To consider the impact of the choices made when making and sharing a video</p> <p>Data and information – Flat-file databases To use a form to record information To compare paper and computer-based databases To outline how grouping and then sorting data allows us to answer questions To explain that tools can be used to select specific data To explain that computer programs can be used to compare data visually To apply my knowledge of a database to ask and answer real-world questions</p> <p>Programming – Selection in physical computing To control a simple circuit connected to a computer To write a program that includes count-controlled loops</p>	<p>To review an existing website and consider its structure To plan the features of a web page To consider the ownership and use of images (copyright) To recognise the need to preview pages To outline the need for a navigation path To recognise the implications of linking to content owned by other people</p> <p>Data and information – Spreadsheets To identify questions which can be answered using data To explain that objects can be described using data To explain that formula can be used to produce calculated data To apply formulas to data, including duplicating To create a spreadsheet to plan an event To choose suitable ways to present data</p> <p>Programming – Variables in games To define a 'variable' as something that is changeable To explain why a variable is used in a program To choose how to improve a game by using variables</p>
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		<p>To create and debug a program that I have written</p> <p>Programming – An introduction to quizzes To explain that a sequence of commands has a start To explain that a sequence of commands has an outcome To create a program using a given design To change a given design To create a program using my own design To decide how my project can be improved</p>	<p>To explain that a program has a start To recognise that a sequence of commands can have an order To change the appearance of my project To create a project from a task description</p> <p>Programming – Events and actions To explain how a sprite moves in an existing project To create a program to move a sprite in four directions To adapt a program to a new context To develop my program by adding features To identify and fix bugs in a program To design and create a maze-based challenge</p>	<p>To decompose a program into parts To create a program that uses count-controlled loops to produce a given outcome</p> <p>Programming B – Repetition in games To develop the use of count-controlled loops in a different programming environment To explain that in programming there are infinite loops and count controlled loops To develop a design which includes two or more loops which run at the same time To modify an infinite loop in a given program To design a project that includes repetition To create a project that includes repetition</p>	<p>To explain that a loop can stop when a condition is met, eg number of times To conclude that a loop can be used to repeatedly check whether a condition has been met To design a physical project that includes selection To create a controllable system that includes selection</p> <p>Programming B – Selection in quizzes To explain how selection is used in computer programs To relate that a conditional statement connects a condition to an outcome To explain how selection directs the flow of a program To design a program which uses selection To create a program which uses selection To evaluate my program</p>	<p>To design a project that builds on a given example To use my design to create a project To evaluate my project</p> <p>Programming B – Sensing To create a program to run on a controllable device To explain that selection can control the flow of a program To update a variable with a user input To use an conditional statement to compare a variable to a value To design a project that uses inputs and outputs on a controllable device To develop a program to use inputs and outputs on a controllable device</p>
<p>Threshold Concepts</p>	<p>Computing systems and networks – Technology around us</p> <p>Creating media – digital painting</p> <p>Creating Media – Digital writing</p> <p>Grouping data</p>	<p>Computing systems and networks - Information Technology around us</p> <p>Creating media – Digital photography</p> <p>Creating media – Making music</p> <p>Data and information – Pictograms</p>	<p>Computing systems and networks – Connecting computers</p> <p>Creating media – Animation:</p> <p>Creating media – Desktop publishing</p> <p>Data and information – Branching databases</p>	<p>Computing systems and networks – The Internet</p> <p>Creating media – Audio editing</p> <p>Creating media – Photo editing</p> <p>Data and information – Data logging</p>	<p>Computing systems and networks – Sharing information</p> <p>Creating media – Vector drawing</p> <p>Creating media – Video editing</p> <p>Data and information – Flat-file databases</p>	<p>Computing systems and networks – Communication</p> <p>Creating media – 3D Modelling</p> <p>Creating media – Web page creation</p> <p>Data and information – Spreadsheets</p>



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	<p>Programming a robot (Task, design, code, running the code)</p> <p><u>Copyright and ownership</u></p>	<p>Programming – Robot algorithms Programming – An introduction to quizzes</p> <p><u>Health, well-being and lifestyle</u></p> <p><u>Copyright and ownership</u></p>	<p>Programming – Sequence in music Programming – Events and actions</p> <p><u>Managing online information</u></p> <p><u>Copyright and ownership</u></p>	<p>Programming A – Repetition in shapes Programming B – Repetition in games</p> <p><u>Self-image and identity</u></p> <p><u>Copyright and ownership</u></p>	<p>Programming – Selection in physical computing Programming B – Selection in quizzes</p> <p><u>Self-image and identity</u></p> <p><u>Copyright and ownership</u></p> <p><u>Online relationships</u></p> <p><u>Online reputation</u></p> <p><u>Managing online information</u></p>	<p>Programming – Variables in games</p> <p>Programming B – Sensing</p> <p><u>Self-image and identity</u></p> <p><u>Copyright and ownership</u></p> <p><u>Online relationships</u></p> <p><u>Online reputation</u></p> <p><u>Managing online information</u></p>
<h2 style="text-align: center;">Conceptual Vocabulary</h2>	<p>Computing systems and networks – Technology around us: mouse, click, drag, log on, keyboard, enter, text, cursors, delete, technology, e-safety</p> <p>Creating media – digital painting: shape tool, line tool Creating Media – Digital writing: undo, select, double-click, font, bold, italic, underline, shift, backspace Grouping data: label object, group, property, similar, compare, record</p> <p>Programming a robot: programme, command, device, outcome, instruction, direction, sequence, predict, debug, solution Programming animation: sprite, block, value, algorithm</p>	<p>Computing systems and networks - Information Technology around us: features, purpose, re-size, file, image, information technology, connected, e-safety, barcode, barcode scanner, till, bank card, chip and PIN card reader</p> <p>Creating media – Digital photography: device, capture digital photos, process, landscape and portrait format, retaking, light source, effect, focus</p> <p>Creating media – Making music: rhythm pattern, connect, pitch, duration, refine, reopen Programming A – Robot algorithms: sequence, algorithm, outcome, command, debug</p>	<p>Computing systems and networks – Connecting computers: digital, device, function, input, output, network, network switch, server, wireless access point, components Creating media – Animation: animation, flip book, stop frame, storyboard, evaluate, media</p> <p>Creating media – Desktop publishing: layout, page settings, 'page orientation', placeholders, template, content, desktop publishing, publication</p> <p>Data and information – Branching databases: yes/no answer, attribute, relevant data, database, branching database, tree structure, pictogram</p>	<p>Computing systems and networks – The Internet: network, World Wide Web, upload, content, unreliable, reshare</p> <p>Creating media – Audio editing: input, output, podcast, edit audio,</p> <p>Creating media – Photo editing: digital image, composition, retouch, element, publication</p> <p>Data and information – Data logging: data, data set, sensor, data logger, duration, import,</p> <p>Programming – Repetition in shapes: code snippet, text-based language, template, algorithm, repeat, count-controlled loop, decompose, procedure, debug</p>	<p>Computing systems and networks – Sharing information: human element, data transfer, unique address, packet, shared project, online/offline</p> <p>Creating media – Vector drawing: vector drawing, resize, rotate, object, duplicate, zoom, alignment, resize handle, consistency, modify, layer, group, ungroup</p> <p>Creating media – Video editing: visual/ audio media, storyboard, record/ capture video, lighting, angle, reshooting, editing</p> <p>Data and information – Flat-file databases: form, field, flat-file database, grouping/ sorting data, value, 'AND' / 'OR', chart, filter, refine a search</p>	<p>Computing systems and networks – Communication: search engine, web search, refine a search, search results, web crawler, search engine index, search rank</p> <p>Creating media – 3D Modelling: manipulate, three-dimensional (3D) digital object, construct, resize, rotate, position, duplicate, placeholder, modify</p> <p>Creating media – Web page creation: structure, HTML, ownership, preview, navigation path, hyperlinks, content</p> <p>Data and information – Spreadsheets: data heading, data set, item of data, spreadsheet, formula, data type, operation, cell, graph, table</p>



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		<p>Programming – An introduction to quizzes: sequence, algorithm, outcome, command, debug, programme, background</p>	<p>Programming – Sequence in music: programming environment, sprites, backdrops, attributes, block, outcome, sequence, algorithm, , command, debug, programme</p> <p>Programming – Sequence in music: programming environment, sprites, backdrops, attributes, commands, blocks, outcome, implement, algorithm</p> <p>Programming – Events and actions: sprite, programming extension, sequence, cod block, bug</p>	<p>Programming – Repetition in games: count-controlled loops, programming environment, snippet, infinite loop,</p>	<p>Programming – Selection in physical computing: circuit, LED, microcontroller, infinite loop, count-controlled loop, condition, ‘do until’ loop, action, ‘if... then...’ statement, controllable system, intended outcome</p> <p>Programming – Selection in quizzes: selection, condition, conditional statement, outcome, infinite loop, ‘if... then... else...’ statement, program flow, branch, implement</p>	<p>Programming – Variables in games: variable, changeable, define, placeholder in memory, value,</p> <p>Programming – Sensing: controllable device, emulator, transfer, variable, if... then... else... statement, user input, conditional statement, operand, algorithm</p>
<h3 style="text-align: center;">Key Skills</h3> <h3 style="text-align: center;">Milestones</h3>	<p>To Code</p> <ul style="list-style-type: none"> ● Motion – Control motion by specifying the number of steps to travel, direction and turn. ● Looks – Add text strings, show and hide objects, and change the features of an object. ● Sound – Select sounds and control when they are heard, their duration and volume. ● Draw – Control when drawings appear and set the pen colour, size and shape. ● Events – Specify use inputs (such as clicks) to control events. ● Control – Specify the nature of events (such as a single event or a loop). ● Sensing – Create conditions for actions by waiting for a user input (such as responses to questions like: What is your name?) <p>To Communicate</p>	<p>To Code</p> <ul style="list-style-type: none"> ● Motion – Use specified screen coordinates to control movement. ● Looks – Set the appearance of objects and create sequences of changes. ● Sound – Create and edit sounds. Control when they are heard, their volume, duration and rests. ● Draw – Control the shade of pens. ● Events – Specify conditions to trigger events. ● Control – Use IF – THEN conditions to control events or objects. ● Sensing – Create conditions for actions by sensing proximity or by waiting for a user input (such as proximity to a specified colour or a line or responses to questions). ● Variables and lists – Use variables to store a value. ● Variables and lists – Use the functions define, set, change, show and hide to control the variables. ● Operators – Use the Reported operators () + () () – () () / () to perform calculations. <p>To Communicate</p>	<p>To Code</p> <ul style="list-style-type: none"> ● Motion – Set IF conditions for movements. Specify types of rotation giving the number of degrees. ● Looks – Change the position of objects between screen layers (send to back, bring to front) ● Sound – Upload sounds from a file and edit them. Add effects such as fade in and out and control their implementation. ● Draw – Combine the use of pens with movement to create interesting effects. ● Events – Set events to control other events by ‘broadcasting’ information as a trigger. ● Control – Use IF – THEN – ELSE conditions to control events. ● Sensing – Use a range of sensing tools (including proximity, user inputs, loudness and mouse position) to control events or actions. ● Variables and lists – Use lists to create a set of variables. ● Operators – Use the Boolean operators () < () () = () () > () () and () () or () Not () to define conditions. ● Operators – Use the Reporter operators () + () () – () () * () () / () to perform calculations. Pick random () to () Join () () Letter () of () Length of () () Mod () (this reports the remainder after a division calculation). Round () () of () . <p>To Communicate</p> <ul style="list-style-type: none"> ● Choose the most suitable applications and devices for the purposes of communication. 			



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	<ul style="list-style-type: none"> ● Understand online risks and the age rules for sites. ● Use a range of applications and devices in order to communicate ideas, work and messages. <p>To Collect</p> <ul style="list-style-type: none"> ● Use simple databases to record information in areas across the curriculum. <p>To Connect</p> <ul style="list-style-type: none"> ● Understand online risks and the age rules for sites. 	<ul style="list-style-type: none"> ● Use some of the advanced features of applications and devices in order to communicate ideas, work or messages professionally. <p>To Collect</p> <ul style="list-style-type: none"> ● Device and construct databases using applications designed for this purpose in areas across the curriculum. <p>To Connect</p> <ul style="list-style-type: none"> ● Give examples of the risks posed by online communications. ● Understand the term 'copyright'. ● Understand that comments made online that are hurtful or offensive are the same as bullying. ● Understand how online services work. 	<ul style="list-style-type: none"> ● Use many of the advanced features in order to create high-quality, professional or efficient communications. <p>To Collect</p> <ul style="list-style-type: none"> ● Select appropriate applications to devise, construct and manipulate data and present it in an effective and professional manner. <p>To Connect</p> <ul style="list-style-type: none"> ● Give examples of the risks of online communities and demonstrate knowledge of how to minimise risk and report problems. ● Understand and demonstrate knowledge that it is illegal to download copyrighted material, including music or games, without express written permission from the copyright holder. ● Understand the effect of the online comments and show responsibility and sensitivity when online. ● Understand how simple networks are set up and used.
<h2 style="text-align: center;">BAD Assessment</h2>	<p>To Code Motion - Control motion by specifying the number of steps to travel, direction and turn. Basic - With support from a teacher, basic movement is controlled. Advancing - Generally, steps and direction of turn are understood. Deep - Precise movement is achieved using basic instructions.</p> <p>Looks - Add text strings, show and hide objects, and change the features of an object. Basic - With the support of a teacher, the basic features of an object are altered. Advancing - There is some experimentation with variables to change the basic features of an object. Deep - There is a good understanding of how to change the basic features of an object.</p> <p>Sound - Select sounds and control when they are heard, their duration and volume. Basic - With the support of structured activities, sounds are controlled.</p>	<p>To Code Motion – Use specified screen coordinates to control movement. Basic – There is some awareness that movement may be controlled around specified screen coordinates. Advancing – There is some experimentation with controlling movement around specified screen coordinates. Deep – There is a good understanding that screen coordinates may be used to control movement.</p> <p>Looks – Set the appearance of objects and create sequences of changes. Basic – There is some awareness of how to alter the appearance of objects and create sequences of changes. Advancing - There is some experimentation with setting the appearance of objects and sequences of changes. Deep - There is a good understanding of how to set the appearance of objects and in creating sequences of changes.</p> <p>Sound – Create and edit sounds. Control when they are heard, their volume, duration and rests. Basic – There is some awareness of how to create and edit sounds. Advancing - There is some experimentation with the creation and editing of sounds. Deep - There is a good understanding of how to create and edit sounds.</p>	<p>To Code Motion – Set IF conditions for movements. Specify types of rotation giving the number of degrees. Basic – There is some experimentation with conditions and degrees of movement. Advancing – There is some good examples of the use of conditions and degrees of movement. Deep – There are many well-executed examples of the use of conditions and degrees of movement.</p> <p>Looks – Change the position of objects between screen layers (send to back, bring to front). Basic – There is some experimentation with screen layers. Advancing - There are some good examples of effective manipulation of objects between screen layers. Deep – Screen layers are used effectively to control the position and visibility of objects.</p> <p>Sound – Upload sounds from a file and edit them. Add effects such as fade in and out and control their implementation. Basic – There is some experimentation with importing and editing sounds. Advancing - There is some good examples of importing and editing sounds. Deep - There is a very good understanding of the process of sound import and the subsequent editing of the sound to create interesting effects.</p> <p>Draw – Combine the use of pens with movement to create interesting effects. Basic – There is some experimentation with combining tools with movement. Advancing – Some interesting effects are gained through combining tools with movement.</p>



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<p>Advancing - There is some experimentation with controlling sound. Deep - There is a good understanding of how to control sound.</p> <p>Draw - Control when drawings appear and set the pen colour, size and shape. Basic - With the support of structured activities, drawings are created. Advancing - There is some experimentation with controlling draw tools. Deep - There is a good understanding of how to control draw tools.</p> <p>Events - Specify user inputs (such as clicks) to control events. Basic - With the support of structured activities, user inputs are specified. Advancing - There is some experimentation with user inputs to control events. Deep - There is a good understanding of how to control events by specifying user inputs.</p> <p>Control - Specify the nature of events (such as a single event or a loop). Basic - With the support of a teacher, the nature of events is specified. Advancing - There is some experimentation with specifying the nature of events. Deep - There is a good understanding of how and when to specify the nature of events.</p> <p>Sensing - Create conditions for actions by waiting for a user input (such as responses to questions like: What is your name?). Basic - With the support of a teacher, user responses are explored. Advancing - There is some experimentation with the nature of user responses and the required user inputs.</p>	<p>Draw - Control the shade of pens. Basic – There is some awareness that the shape of tools may be altered. Advancing - There is some experimentation with altering the shape of tools. Deep - There is a good understanding of how to alter the shape of tools to create different effects.</p> <p>Events - Specify conditions to trigger events. Basic – There is some awareness of triggers for events. Advancing - There is some experimentation with various triggers for events. Deep - There is a good understanding of how to specify triggers for events.</p> <p>Control – Use IF – THEN conditions to control events or objects. Basic – There is some awareness that IF – THEN conditions may be set. Advancing - There is some experimentation with IF – THEN conditions. Deep - There is a good understanding of how to use IF – THEN conditions.</p> <p>Sensing - Create conditions for actions by sensing proximity or by waiting for a user input (such as proximity to a specified colour or a line or responses to questions). Basic – There is some awareness that actions may be controlled by proximity or user input. Advancing - There is some experimentation with sensing proximity or user input to trigger actions. Deep - There is a good understanding that proximity and user inputs may be used to trigger actions.</p> <p>Variables and Lists – Use variables to store a value. Basic – There is some awareness of the term ‘variable’ and that variables may be set to store a value. Advancing – There is some experimentation with using variables to store a value. Deep – The term variable is understood, and used to store a value.</p>	<p>Deep – Some excellent effects are gained through well-planned combinations of tools and movement.</p> <p>Events – Set events to control other events by ‘broadcasting’ information as a trigger. Basic – There is some awareness of how to broadcast events. Advancing - There is some good examples of broadcast events. Deep - There are many very good examples of choosing, using and explaining broadcast events.</p> <p>Control – Use IF – THEN conditions to control events or objects. Basic – There is some awareness that IF – THEN conditions may be set. Advancing - There is some experimentation with IF – THEN conditions. Deep - There is a good understanding of how to use IF – THEN conditions.</p> <p>Sensing – Use a range of sensing tools (including proximity, user inputs, loudness and mouse position) to control events or actions. Basic – There is some awareness that there are a range of sensing tools that may be used to control events or actions. Advancing - There are some good examples of using a range of sensing tools to control events or actions. Deep – There are many very good well-chosen examples of, with explanations for, the use of sensing tools to control events or actions.</p> <p>Variables and Lists – Use lists to create a set of variables. Basic – There is some awareness of how to create a set of variables. Advancing – There are some good examples of sets of variables in a range of situations. Deep – There is a thorough understanding of how to create and use sets of variables.</p> <p>Operators – Use the Boolean operators () + () - () * () / () to perform calculations. Pick Random () to () Join () Letter () of () Length of () Mod () (this reports the remainder after a division calculation). Round () () of (). Basic – There is some understanding of the use of operators to perform calculations and to refine the reporting of results. Advancing – There are some good examples of the use of operators to perform calculations and to refine the reporting of results. Deep – There is a thorough understanding of the use of operators to perform calculations and to refine the reporting of results.</p> <p>Operators – Choose the most suitable applications and devices for the purposes of communication. Basic – Some choices are made in selecting and using apps and devices for communicating ideas.</p>
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	<p>Deep - There is a good understanding of how to seek a user response in a range of situations.</p> <p><u>To Communicate</u> Understand online risks and the age rules for sites. Basic - Online activity is closely monitored by a teacher. Advancing - There is some awareness of some online risks. Deep - There is a growing awareness of some of the rules in place to minimise online risks.</p> <p>Use a range of applications and devices in order to communicate ideas, work and messages. Basic - With guidance, a range of devices and apps are used to communicate with others. Advancing - There is a growing awareness of a range of devices and apps that are used to communicate with others. Deep - There is a good understanding of a wide range of devices and apps that can be used to communicate with others.</p> <p><u>To Collect</u> Use simple databases to record information in areas across the curriculum. Basic - With the support of a teacher, simple databases are used. Advancing - There is a growing awareness of how databases are used. Deep - Many good examples of using databases across the curriculum are developing.</p> <p><u>To Connect</u> Understand online risks and the age rules for sites.</p>	<p>Variables and Lists – Use the functions define, set, changes, show and hide to control the variables. Basic – There is some awareness of the use of functions to control variables. Advancing – There is some experimentation with controlling variables. Deep – There is a good understanding of how and when to use functions to control variables.</p> <p>Operators – Use the Reporter operators $() + ()$ $() - ()$ $() / ()$ to perform calculations. Basic – Some calculations are performed using basic reporter operations. Advancing – Calculations using basic reporter operations are generally accurate. Deep – Accurate and well applied calculations are performed using basic reporter operations.</p> <p><u>To Communicate</u> Use some of the advanced features of applications and devices in order to communicate ideas, work or messages professionally, Basic – There are some attempts to create appropriate formats for communicating ideas. Advancing - There is some interesting experimentation with formats and styles for communicating ideas. Deep - There is a good understanding that ideas need to be presented in interesting and easy – to – understand formats.</p> <p><u>To Collect</u> Divide and construct databases used applications designed for this purpose in areas across the curriculum. Basic – There are some attempts to devise databases. Advancing - There are some good examples of database creations across the curriculum. Deep – There are many good examples of well-planned databases that have been created across the curriculum.</p> <p><u>To Connect</u> Give examples of the risks posed by online communications. Basic – Some examples of online risks are offered, when questioned.</p>	<p>Advancing – Good choices are made in selecting and using apps and devices for communicating ideas. Deep – Excellent choices are made in selecting and using apps and devices for communicating ideas.</p> <p>Operators – Use many of the advanced features in order to create high-quality, professional or efficient communications. Basic – Some high-quality work is produced. Advancing – There are many examples of high-quality work. Deep – There are widespread and very good examples of high-quality work.</p> <p><u>To Communicate</u> Choose the most suitable applications and devices for the purposes of communication. Basic – Some choices are made in selecting and using apps and devices for communicating ideas. Advancing – Good choices are made in selecting and using apps and devices for communicating ideas. Deep – Excellent choices are made in selecting and using apps and devices for communicating ideas.</p> <p>Use many of the advanced features in order to create high-quality, professional or efficient communications. Basic – Some high-quality work is produced. Advancing - There are many examples of high-quality work. Deep – There are widespread and very good examples of high-quality work.</p> <p><u>To Collect</u> Select appropriate applications to devise, construct and manipulate data and present it in an effective and professional manner. Basic – There is some awareness of how to devise, construct and manipulate data. Advancing – The manipulation of data is efficient and its presentation is becoming professional. Deep – The manipulation of data is very well thought out and reasoned well. There is a high degree of professional presentation of data.</p> <p><u>To Connect</u> Give examples of the risks of online communities and demonstrate knowledge of how to minimise risk and report problems. Basic – Some examples of the risks of online communities and the measures to take to minimise risks are given. Advancing – There is a good understanding of the risks of online communities and the measures to take to minimise risks.</p>
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	<p>Basic - With the support of a teacher, some of the risks posed by online sites are explored.</p> <p>Advancing - There is a growing awareness that sites have age restrictions and some of the reasons for this are understood.</p> <p>Deep - Age rules for sites are understood and good examples of some online risks are given.</p>	<p>Advancing – Whilst online, there is a growing awareness of how to keep safe.</p> <p>Deep – Many good examples of how to keep safe whilst online are provided.</p> <p>Understand the term ‘copyright’.</p> <p>Basic – There is some awareness of the term ‘copyright’ and what it means.</p> <p>Advancing – The term ‘copyright’ is generally understood.</p> <p>Deep – The term ‘copyright’ is understood and the understanding of its meaning applied to a number of contexts.</p> <p>Understand the comments made online that are hurtful or offensive are the same as bullying.</p> <p>Basic – There is some awareness that hurt and offence may be caused online.</p> <p>Advancing – In discussion, some good examples of how to behave respectfully towards others online are provided.</p> <p>Deep – There is a good understanding of how to behave respectfully towards others online.</p> <p>Understand how online services work.</p> <p>Basic – There is some awareness of how online services work.</p> <p>Advancing – There is a growing understanding of how familiar online services work.</p> <p>Deep – Many good examples of how online services work are provided.</p>	<p>Deep – There is a thorough understanding of the risks of online communities and the measures to take to minimise risks.</p> <p>Understand and demonstrate knowledge that it is illegal to download copyrighted material, including music or games, without express written permission from the copyright holder.</p> <p>Basic – There is an awareness that copyright theft is illegal.</p> <p>Advancing – There is a good understanding that copyright theft is illegal.</p> <p>Deep – There is a thorough understanding that copyright theft is illegal.</p> <p>Understand the effect of the online comments and show responsibility and sensitivity when online.</p> <p>Basic – Online comments are responsible and sensitive.</p> <p>Advancing – There is a good awareness of the effect of online comments. Comments made online are responsible and sensitive.</p> <p>Deep – Explanations show an in-depth understanding of the effect of irresponsible online comments. Comments made are responsible and sensitive.</p> <p>Understand how simple networks are set up and used.</p> <p>Basic – There an awareness of how simple networks are set up and used.</p> <p>Advancing – There is a good understanding of how simple networks are set up and used.</p> <p>Deep – There is a thorough understanding of how networks are set up and used.</p>
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POP Tasks	<ul style="list-style-type: none">Create poster for using computers safelyCreate a sunflower pictureEnter, edit text and saveGroup pictures for true and false questionsDesign and programme a route for a robotChange background in Scratch Junior	<ul style="list-style-type: none">Create Digital 5 a Day posterReview their digital photographsShare, review then edit musicCreate block diagramDebug an algorithmCreate quiz	<ul style="list-style-type: none">Make a network mapCreate stop frame animationCreate a poster using DTPCreate a branching database in powerpointCreate a digital instrumentMake a maze game	<ul style="list-style-type: none">Evaluate accuracy/ reliability of online resultsCreate and evaluate a podcastCreate an online advert (banner/image)Summarise benefits of data loggerCreate and evaluate logo program using loopsCreate a simple game	<ul style="list-style-type: none">Remix and share a projectEvaluate a vector drawingCreate an export a videoDisplay data visually using appropriate chartsWrite a program for a microbitCreate a quiz using if condition	<ul style="list-style-type: none">Compare methods of communicationCreate a 3D modelCreate and evaluate a webpageCreate spreadsheet to plan an eventCreate a game using variablesMake a step counter
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