

**Banister Primary School**  
**Computing Progression**  
**EYFS, Key Stage 1 & 2**

**EYFS**

(Units may not be taught in this order – refer to whole school curriculum overview.)

Computing Focus	Computational Thinking					
Barefoot Strand	Pattern/Algorithms Abstraction/ Decomposition/ Debug	Pattern/Logic/ Algorithm/ Decomposition	Pattern/Logic/ Abstraction/Tinkering Decomposition/ Algorithms	Abstraction/ Tinkering/ Algorithms	Algorithms/ Decomposition/ Abstraction	Pattern/Tinkering/ Algorithm/ Debugging/ Algorithm
Unit Title	<b>Busy Bodies</b>	<b>Awesome Autumn/Winter Warmers</b>	<b>Boats Ahoy</b>	<b>Springtime</b>	<b>Super Space</b>	<b>Summer Fun</b>
Vocabulary	Order, instructions, rules, first, next, before, create, small steps, most important, algorithm, mistakes, make changes	Pattern, same, different, repeat, predict, plan, sequence, algorithm, direction, small part/chunk, explain, describe	New information, build up, predict, explain, important information, tinker, try out, explain choices, order, sequence, algorithm, first, next, before, after, last	Same, different, explain, important, not important, choices, tinker, try out, predict, change, improve, challenge, find problem, fix problem	Small steps, first, next, before, after, last, same, different, grouping, make choices, explain, plan, make decisions, important, not important, order, instructions, algorithm, find problem, fix problem	Collect, same, organise, groups, pattern, different, pictogram, links, explain, algorithm, set, sequence, first, next, last, before, after, try, test, explore, explain
Concept Progression	<p>To be able to:</p> <ul style="list-style-type: none"> <li>• spot patterns</li> <li>• follow instructions</li> <li>• make choices on what to include/not include (abstraction)</li> <li>• make logical choices with information they are given</li> </ul>	<p>To be able to:</p> <ul style="list-style-type: none"> <li>• create patterns that repeat</li> <li>• identify similarities and differences in pattern</li> <li>• use language linked to direction</li> <li>• break a process down into smaller steps</li> </ul>	<p>To be able to:</p> <ul style="list-style-type: none"> <li>• develop understanding with more information</li> <li>• look for similarities and differences</li> <li>• tinker – try things out to explore what happens</li> <li>• observe what happens and try to</li> </ul>	<p>To be able to:</p> <ul style="list-style-type: none"> <li>• select the components that are important</li> <li>• focus on the purpose and make selections based on that</li> <li>• self-select based on breaking a task into smaller steps</li> </ul>	<p>To be able to:</p> <ul style="list-style-type: none"> <li>• follow the sequence of a set of instructions or rules</li> <li>• create their own algorithm</li> <li>• understand the sequence needed for an algorithm</li> </ul>	<p>To be able to:</p> <ul style="list-style-type: none"> <li>• collect objects for a pictogram</li> <li>• recognise to turn, move, place and overlap when tinkering (2D shapes)</li> <li>• use debugging to find and fix errors</li> <li>• use language linked to</li> </ul>

		<ul style="list-style-type: none"> <li>recognise an order using familiar images (making - soup)</li> </ul>	<p>explain possible reasons</p> <ul style="list-style-type: none"> <li>use imagination to create items</li> <li>follow a simple set of instructions</li> </ul>	<ul style="list-style-type: none"> <li>create their own simple algorithm – can be image based</li> <li>suggest small steps in an algorithm through decomposition</li> </ul>	<ul style="list-style-type: none"> <li>decompose aloud to help with the creation process</li> <li>review what has been created</li> <li>predict what might happen when creating something</li> <li>test out ideas they have</li> </ul>	<p>movement and position</p> <ul style="list-style-type: none"> <li>sequence sets of objects to build an algorithm</li> <li>consider ways to change things within a sequence</li> </ul>
<p><b>Skill Progression leading to End Point</b></p>	<p>Children will be able to:</p> <ul style="list-style-type: none"> <li>sort according to pattern</li> <li>create/follow a sequence</li> <li>break a task into smaller chunks and make decisions within each section (decomposition)</li> <li>understand and explain reasons for the choices that they make</li> </ul>	<p>Children will be able to:</p> <ul style="list-style-type: none"> <li>create patterns based on what they identify</li> <li>explain choices for directions opted for</li> <li>express reasons for choices</li> </ul>	<p>Children will be able to:</p> <ul style="list-style-type: none"> <li>make predictions and explain reasons for their predictions based on what they know</li> <li>identify pattern based on what they know</li> <li>use what happens to develop/change predictions</li> <li>test out predictions to prove / disprove</li> <li>review what they have created using what they know</li> <li>create an identified object by following small-step instructions</li> </ul>	<p>Children will be able to:</p> <ul style="list-style-type: none"> <li>select resources/ images that suit a given/ identified purpose</li> <li>debug a design as a process is in action – make changes based on what they notice or what happens</li> <li>plan a simple process to achieve an end result</li> <li>understand the small steps in a process before they get to the end</li> </ul>	<p>Children will be able to:</p> <ul style="list-style-type: none"> <li>plan a route for an object</li> <li>use a sequence to plan a route</li> <li>talk through the different stages in their creation</li> <li>talk about something they have created and explain what went well or what might need changing</li> <li>understand how to check whether made predictions work</li> <li>describe any changes that they could then make</li> </ul>	<p>Children will be able to:</p> <ul style="list-style-type: none"> <li>sort objects with similarities to make a pictogram</li> <li>check their pictogram for the information they are using</li> <li>use their pictogram to answer simple questions</li> <li>recognised shapes when re-orientated</li> <li>test things out to see where it might go wrong</li> <li>explain their choices for words linked to movement and position</li> <li>explain placement of objects in a sequence</li> <li>explain changes they may need to make</li> </ul>

**Banister Primary School**  
**Computing Progression**  
**EYFS, Key Stage 1 & 2**

**Year 1**

(Units may not be taught in this order – refer to whole school curriculum overview.)

Computing Strand	Information Technology	Information Technology and Digital Literacy	Computer Science	Information Technology	Information Technology	Computer Science
Teach Computing Strand	Computing Systems and Networks	Creating Media	Programming A	Data and Information	Creating Media	Programming B
Unit Title	<b>Technology Around Us</b>	<b>Digital Painting</b>	<b>Moving a Robot</b>	<b>Grouping Data</b>	<b>Digital Writing</b>	<b>Programming Animations</b>
Vocabulary	Technology, desktop, laptop, computer, mouse, trackpad, screen, login, username, password, keyboard, edit, spacebar	Paint tools, fill, brush, shape, line, undo, save, retrieve, image, file	Robot, direction, device, command, sequence, predict, program, input, run	Object, label, group, data, properties, classify, attributes, similarities	Word process, software, keys, type, space, backspace, cursor, shift, output, edit/review, caps lock, bold, italic, underline, double click, font, undo	Sprite, programming, coding, start block, algorithm, value, programming area, programming block, animation
Concept Progression	<p>To be able to:</p> <ul style="list-style-type: none"> <li>Recognise how technology can help us</li> <li>show examples of technology and how it helps us</li> <li>understand that a computer is a piece of technology</li> <li>make choices when using technology</li> <li>explain why we need rules when using technology</li> </ul>	<p>To be able to:</p> <ul style="list-style-type: none"> <li>recognise different software tools do</li> <li>explain that we can use computers to create art</li> <li>show that a tool can be adjusted to suit an individual need</li> <li>know when to decide the use for each tool appropriately</li> <li>explain how to compare a painting on a computer –</li> </ul>	<p>To be able to:</p> <ul style="list-style-type: none"> <li>recall words that can be enacted</li> <li>know what a command does</li> <li>recognise how to match a command to an outcome</li> <li>explain how they understand that a program is a set of commands that a computer runs</li> <li>recall that a set of instructions can be input before they are told to run</li> </ul>	<p>To be able to:</p> <ul style="list-style-type: none"> <li>demonstrate that objects can be counted</li> <li>explain how they recognise ways that information can be presented</li> <li>show that information can be presented in different ways</li> </ul>	<p>To be able to:</p> <ul style="list-style-type: none"> <li>explain that they recognise that a keyboard is used to enter text into a computer (typing)</li> <li>know that the shift key changes the output of a key</li> <li>that text can be changed</li> <li>that text can be edited (reviewed)</li> <li>that the appearance of text can be changed</li> <li>how they have considered the</li> </ul>	<p>To be able to:</p> <ul style="list-style-type: none"> <li>enact a given word</li> <li>recall words that can be enacted</li> <li>predict the outcome of a device command</li> <li>list commands that can be used on a specific device</li> <li>explain what a command does</li> <li>match a command and outcome</li> <li>recognise how to make a command run</li> </ul>

		painting using brushes			impact of any changes made	<ul style="list-style-type: none"> <li>• choose a command for a specific purpose</li> <li>• understand that a program is a set of commands that run on a computer</li> <li>• recall a series of commands before enacting them</li> <li>• build a sequence of commands (steps)</li> <li>• combine commands for a program</li> </ul>
<b>Skill Progression leading to End Point</b>	<p>Children will be able to:</p> <ul style="list-style-type: none"> <li>• choose technology for a task</li> <li>• recognise that technology can be used in different ways</li> <li>• identify the main parts of a computer</li> <li>• use a mouse in different ways</li> <li>• use a keyboard to type and edit text</li> <li>• show to use technology safely</li> </ul>	<p>Children will be able to:</p> <ul style="list-style-type: none"> <li>• create a picture using tools</li> <li>• use shape/line tools for precision</li> <li>• use a range of paint colours</li> <li>• use the fill tool for a designed enclosed area of an image</li> <li>• use undo to correct a mistake</li> <li>• to combine using a range of tools to create a piece of artwork</li> </ul>	<p>Children will be able to:</p> <ul style="list-style-type: none"> <li>• enact a given word</li> <li>• predict an outcome of a command on a used device</li> <li>• list commands that can be used on a given device</li> <li>• run a command on a floor robot</li> <li>• choose a command for a given purpose</li> <li>• choose a series of words to enact within a program</li> <li>• choose a series of commands that can run as a program</li> <li>• build a sequence of commands – in steps</li> <li>• combine commands</li> </ul>	<p>Children will be able to:</p> <ul style="list-style-type: none"> <li>• identify some attributes of an object</li> <li>• collect simple data</li> <li>• show collected data can be counted</li> <li>• describe the properties of an object</li> <li>• chooses an attribute by which to sort a group of objects</li> <li>• group objects to answer questions</li> <li>• explain that similarities (attributes) can be used to group objects</li> <li>• describe a group of objects looking for commonalities (similarities)</li> </ul>	<p>Children will be able to:</p> <ul style="list-style-type: none"> <li>• use letter/number and space keys to input text to a computer</li> <li>• use punctuation and special keys</li> <li>• select text</li> <li>• choose options to achieve an intended outcome</li> <li>• change the appearance of text on a computer</li> <li>• use backspace to remove text</li> <li>• position the cursor in an intended location</li> <li>• use undo when needed</li> </ul>	<p>Children will be able to:</p> <ul style="list-style-type: none"> <li>• choose a series of words to be enacted in a program</li> <li>• choose a series of commands to run as a program</li> <li>• run a program on a device</li> </ul>

			<ul style="list-style-type: none"> <li>run a program on a device</li> </ul>			
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**Banister Primary School  
Computing Progression  
EYFS, Key Stage 1 & 2**

**Year 2**

(Units may not be taught in this order – refer to whole school curriculum overview.)

<b>Computing Strand</b>	<b>Information Technology</b>	<b>Information Technology and Digital Literacy</b>	<b>Computer Science</b>	<b>Information Technology</b>	<b>Information Technology</b>	<b>Computer Science</b>
<b>Teach Computing Strand</b>	Computing Systems and Networks	Creating Media	Programming A	Data and Information	Creating Media	Programming B
<b>Unit Title</b>	<b>IT Around Us</b>	<b>Digital Photography</b>	<b>Robot Algorithms</b>	<b>Pictograms</b>	<b>Making Music</b>	<b>Programming Quizzes</b>
<b>Vocabulary</b>	Information technology, device, examples of IT- barcode scanner, printer, tablet, chip and pin machine, card reader	Capture, digital photograph, portrait, landscape, format, photography composition, retake, artificial light, natural light, camera focus, effects, edit, adjust	Outcome, algorithm, execute (run)	Pictogram, tally, count, compare, attributes, block diagram	Rhythm , rhythm pattern, pitch, musical pattern, sequence of notes	Green flag (Scratch Jr.), background, modify, debug
<b>Concept Progression</b>	To be able to: <ul style="list-style-type: none"> <li>recognise different types of computers used in schools</li> </ul>	To be able to: <ul style="list-style-type: none"> <li>recognise that some digital devices capture</li> </ul>	To be able to: <ul style="list-style-type: none"> <li>describe a series of instructions is a sequence</li> </ul>	To be able to: <ul style="list-style-type: none"> <li>use a tally chart to collect data</li> </ul>	To be able to: <ul style="list-style-type: none"> <li>identify that computers can play sounds of</li> </ul>	To be able to: <ul style="list-style-type: none"> <li>describe a series of instructions as a sequence</li> </ul>

	<ul style="list-style-type: none"> <li>• know that computers are a part of IT</li> <li>• recognise features of IT</li> <li>• talk about the uses of IT and how it benefits us</li> <li>• discuss how rules for IT can help us</li> <li>• recognise choices are made when using IT</li> </ul>	<p>images with a camera</p> <ul style="list-style-type: none"> <li>• talk about how to take a photograph</li> <li>• know that photographs can be saved and viewed later</li> <li>• make choices when creating a photograph</li> <li>• recognise good photograph features and identify how it could be improved</li> <li>• explain how light affects a photograph</li> <li>• recognise that photographs can be changed after they have been captured</li> <li>• know that some images are not accurate</li> </ul>	<ul style="list-style-type: none"> <li>• recall that a series of instructions can be created before they are enacted</li> <li>• explain what happens when changing the order of instructions</li> <li>• recognise that a program outcome can be predicted</li> </ul>	<ul style="list-style-type: none"> <li>• compare objects grouped by attributes (e.g. shape)</li> <li>• suggest appropriate headings for tally charts and pictograms</li> <li>• complete a given comparison question</li> <li>• use a program to show information in different ways</li> <li>• explain that information can be presented on a computer</li> <li>• give simple examples of why some information should not be shared</li> </ul>	<p>different instruments</p> <ul style="list-style-type: none"> <li>• identify that a pattern can be shown in different ways</li> <li>• compare playing music on computers and on an instrument</li> </ul>	<ul style="list-style-type: none"> <li>• recall that a series of instructions can be input before being enacted</li> <li>• reason logically to predict the outcome of a program</li> </ul>
<p><b>Skill Progression leading to End Point</b></p>	<p>Children will be able to:</p> <ul style="list-style-type: none"> <li>• describe some uses of computers</li> <li>• identify types of IT in school</li> <li>• identify types of IT beyond school</li> <li>• show how IT is used safely</li> </ul>	<p>Children will be able to:</p> <ul style="list-style-type: none"> <li>• capture a digital image</li> <li>• take both landscape and portrait photographs</li> <li>• view images on a device</li> <li>• decide which photographs to keep</li> </ul>	<p>Children will be able to:</p> <p>choose a series of words that can be enacted as a sequence</p> <p>choose a series of instructions that can be run as a program</p> <p>create a program</p> <p>trace a sequence to predict an outcome</p> <p>run a program on a device</p>	<p>Children will be able to:</p> <ul style="list-style-type: none"> <li>• show that they can enter data onto a computer</li> <li>• recognised that attributes are ways to describe people, animals and objects</li> <li>• view data in different formats on a computer</li> <li>• use pictograms to answer single</li> </ul>	<p>Children will be able to:</p> <ul style="list-style-type: none"> <li>• experiment with musical patterns on a computer and with different sounds</li> <li>• create musical patterns on a computer</li> <li>• use a computer to compose a rhythm and melody on a given theme</li> </ul>	<p>Children will be able to:</p> <ul style="list-style-type: none"> <li>• choose a series of words to enact as part of a sequence</li> <li>• explain what happens when the order of instructions are changed</li> <li>• choose a series of commands to run as a program</li> </ul>

		<ul style="list-style-type: none"> <li>hold the device still to ensure a clear image</li> <li>zoom in/out to change the composition of a photograph</li> <li>consider lighting before taking an image</li> <li>try using filters to edit the appearance of an image</li> <li>retake an image to improve it</li> </ul>	debug a program they have written	<ul style="list-style-type: none"> <li>attribute questions (ways they are similar)</li> <li>use a computer to be able to answer comparison questions</li> </ul>	<ul style="list-style-type: none"> <li>use a computer to play the same music but in different ways (tempo/pitch)</li> <li>evaluate a composition created on a computer</li> <li>improve a musical composition created on a computer</li> </ul>	<ul style="list-style-type: none"> <li>trace a sequence to then make a prediction</li> <li>test a prediction by running the sequence</li> <li>create and debug a self-written program</li> <li>run a program on a device</li> </ul>
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**Banister Primary School  
Computing Progression  
EYFS, Key Stage 1 & 2**

**Year 3**

(Units may not be taught in this order – refer to whole school curriculum overview.)

<b>Computing Strand</b>	<b>Information Technology</b>	<b>Information Technology and Digital Literacy</b>	<b>Computer Science</b>	<b>Information Technology</b>	<b>Information Technology</b>	<b>Computer Science</b>
<b>Teach Computing Strand</b>	Computing Systems and Networks	Creating Media	Programming A	Data and Information	Creating Media	Programming B
<b>Unit Title</b>	<b>Connecting Computers</b>	<b>Stop-frame animation</b>	<b>Sequencing Sounds</b>	<b>Branching Databases</b>	<b>Desktop Publishing</b>	<b>Events/Actions in Programs</b>
<b>Vocabulary</b>	Input, process, output, network, network components, server, Wireless Access Point, network switch	Animation, frame, stop-frame animation, story board, sequence of frames, onion skinning	Scratch, backdrop, code, motion block, event block, motion, stage	Tree structure, branching database	Adobe spark, text, image, desktop publishing, return, shift, template, page orientation, place holder, layout	Event, action, code, programming extension, pen extension, pen down block, bugs,

						debugging, outcome, pen trail, set up block
<b>Concept Progression</b>	<p>To be able to:</p> <ul style="list-style-type: none"> <li>describe what an input is</li> <li>explain that a process acts linked to the input</li> <li>explain that an output is produced by the process</li> <li>explain how computer can change how we work</li> <li>explain how a change of process affects the output</li> <li>recognise that a digital device is made up of several parts and that they can be joined to each other</li> <li>identify how devices in a network connected with each other</li> <li>recognise that a network is made up of a number of components</li> <li>explain how information is passed through multiple connections</li> <li>identify the benefits computer networks</li> </ul>	<p>To be able to:</p> <ul style="list-style-type: none"> <li>explain that an animation is a sequence of images</li> <li>identify that a capturing device needs to be in a fixed position</li> <li>recognise that smaller movements create a smoother animation</li> <li>explain the need for consistency in working</li> <li>explain the impact of adding other media to an animation</li> <li>explain that a project be exported so it can be shared</li> </ul>	<p>To be able to:</p> <ul style="list-style-type: none"> <li>explain that programs start because of an input</li> <li>explain what a sequence is</li> <li>identify that a program includes sequences of commands</li> <li>identify that the sequence of a program is a process</li> <li>explain that the order of commands can affect a program's output</li> <li>identify that different sequences can achieve the same output</li> <li>identify that different sequences can achieve different outputs</li> </ul>	<p>To be able to:</p> <ul style="list-style-type: none"> <li>investigate questions with yes/no answers</li> <li>identify attributes that you can ask yes/no questions about</li> <li>select an attribute to separate objects into two similar sized groups</li> <li>explain that a branching database is an identification tool</li> <li>recognise that data can be structured by use of yes/no questions</li> <li>explain that a well-structured branching database will allow objects to be identified using fewer questions</li> <li>link two levels of a branching database, using AND</li> </ul>	<p>To be able to:</p> <ul style="list-style-type: none"> <li>recognise how text/images can be used together convey information</li> <li>know landscape/ portrait as different page orientations</li> <li>consider how different layouts suit different purposes</li> <li>recognise that DTP pages can be structured with the use of placeholders</li> <li>recognise how different font styles and effects are used for certain purposes</li> <li>consider the benefits of using a DTP application</li> </ul>	<p>To be able to:</p> <ul style="list-style-type: none"> <li>explain that programs start with input</li> <li>explore what a sequence is</li> <li>identify that a program includes a sequence of commands</li> <li>explain that an order of commands effects a program's output</li> <li>identify that different sequences can achieve the same/different outputs</li> </ul>



<b>Skill Progression leading to End Point</b>	Children will be able to: <ul style="list-style-type: none"> <li>• identify input/output devices</li> <li>• explain that a computer system accepts an input and processes it to produce an output</li> <li>• explain how a computer network is used to share information</li> <li>• explain the role of a switch server and wireless access point in a network</li> <li>• identify network devices around them</li> <li>• explain how networks can be connected to other networks</li> </ul>	Children will be able to: <ul style="list-style-type: none"> <li>• plan an animation using a storyboard</li> <li>• set up a work area with an awareness of what they are capturing</li> <li>• capture an image</li> <li>• use the onion skinning tool to review subject position</li> <li>• move a subject between captures</li> <li>• review a captured sequence of frames as an animation</li> <li>• remove frames to improve the animation</li> <li>• add media to enhance an animation</li> <li>• review a completed project</li> </ul>	Children will be able to: <ul style="list-style-type: none"> <li>• build a sequence of commands</li> <li>• combine commands in a program</li> <li>• order commands in a program</li> <li>• create a sequence of commands to produce a given outcome</li> </ul>	Children will be able to: <ul style="list-style-type: none"> <li>• create questions with yes/no answers</li> <li>• choose questions that will divide objects into evenly sized sub groups</li> <li>• repeatedly create subgroups of objects</li> <li>• identify an object via a branching database</li> <li>• retrieve information from different levels of a branching database</li> </ul>	Children will be able to: <ul style="list-style-type: none"> <li>• show that page orientation can be changed</li> <li>• add text as a placeholder</li> <li>• organise text/image placeholders in a page layout</li> <li>• add/remove images to and from placeholders</li> <li>• edit text in a placeholder</li> <li>• move/resize/rotate images</li> <li>• review a document</li> </ul>	Children will be able to: <ul style="list-style-type: none"> <li>• build a sequence of commands</li> <li>• combine commands in a program</li> <li>• order commands in a program</li> <li>• create a sequence of commands to produce a given outcome</li> </ul>
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**Banister Primary School  
Computing Progression  
EYFS, Key Stage 1 & 2**

**Year 4**

(Units may not be taught in this order – refer to whole school curriculum overview.)

<b>Computing Strand</b>	<b>Information Technology</b>	<b>Information Technology and Digital Literacy</b>	<b>Computer Science</b>	<b>Information Technology</b>	<b>Information Technology</b>	<b>Computer Science</b>
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Teach Computing Strand	Computing Systems and Networks	Creating Media	Programming A	Data and Information	Creating Media	Programming B
Unit Title	The Internet	Audio Production	Repetition in Shapes	Data Logging	Photo Editing	Repetition in Games
<b>Vocabulary</b>	Router, World Wide Web, online content	Input device , output device, microphone , copyright, recording, podcast, soundwave view, 'Trim' recording, import, align, layers (in recording), sound effect, background music, audio file	Logo (website used), logo command, code snippet, repeat, loop, count controlled loop, decompose/ decomposition, procedures	Data logger, data set, data collection, sensors, data points, data file, logged data	Rotate, crop, filter, colour effect , cloning, photo retouch, duplicate, combined image	Count-controlled loop, loop, snippet of code, infinite loop, event block, code blocks
<b>Concept Progression</b>	<p>To be able to:</p> <ul style="list-style-type: none"> <li>describe how networks connect to other networks</li> <li>recognise the need for security on the internet</li> <li>explain that the global interconnection of networks is the internet</li> <li>recognise that the World Wide Web is part of the internet</li> <li>outline how information can be shared via the World Wide Web</li> <li>describe how to access the World Wide Web</li> <li>describe the types of content/media that can be added,</li> </ul>	<p>To be able to:</p> <ul style="list-style-type: none"> <li>identify that sound can be recorded</li> <li>identify that an input device is needed to record sound and output devices are needed to play audio</li> <li>recognise that recorded audio can be stored on a computer</li> <li>recognise that audio can be edited</li> <li>recognise that sound can be represented visually as a waveform</li> <li>recognise that audio can be layered so that multiple sounds</li> </ul>	<p>To be able to:</p> <ul style="list-style-type: none"> <li>relate what 'repeat' means</li> <li>identify everyday tasks that include repetition as part of a sequence, e.g. brushing teeth, dance moves</li> <li>explain that we can use a loop command in a program to repeat instructions</li> <li>identify a loop within a program</li> <li>identify patterns in a sequence</li> <li>explain that in programming there are indefinite loops and count-controlled loops</li> <li>explain that an indefinite loop will run until the</li> </ul>	<p>To be able to:</p> <ul style="list-style-type: none"> <li>suggest questions that can be answered using a table of data</li> <li>identify data that can be logged over time</li> <li>identify that sensors are input devices</li> <li>recognise that a sensor can be used as an input device for data collection</li> <li>explain that a data logger captures 'data points' from sensors over time</li> </ul>	<p>To be able to:</p> <ul style="list-style-type: none"> <li>use an application to change the whole of a digital image</li> <li>change the composition of a digital image by rotating and flipping</li> <li>change the composition of a digital image by cropping</li> <li>adjust colours of a digital image</li> <li>use an application to change part of a digital image</li> <li>apply effects to a digital image</li> <li>select part of a digital image</li> <li>use clone, copy, and paste to</li> </ul>	<p>To be able to:</p> <ul style="list-style-type: none"> <li>understand what 'repeat' means</li> <li>identify everyday tasks that include repetition as part of a sequence, e.g. brushing teeth, dance moves</li> <li>explain that we can use a loop command in a program to repeat instructions</li> <li>identify a loop within a program</li> <li>identify patterns in a sequence</li> <li>explain that an indefinite loop will run until the program is stopped</li> <li>explain that you can program a loop to stop after a</li> </ul>

	<p>created, and shared on the World Wide Web</p> <ul style="list-style-type: none"> <li>• explain how the content of the World Wide Web is created, owned, and shared by people</li> <li>• explain that the internet enables us to view the World Wide Web</li> <li>• explain that the World Wide Web comprises of websites and web pages</li> <li>• describe the current limitations of World Wide Web media</li> <li>• explain the benefits of the World Wide Web</li> </ul>	<p>can be played at the same time</p> <ul style="list-style-type: none"> <li>• consider the results of editing choices made</li> </ul>	<p>program is stopped</p> <ul style="list-style-type: none"> <li>• explain that you can program a loop to stop after a specific number of time</li> <li>• identify patterns in a sequence, e.g. 'step 3 times' means the same as 'step, step, step'</li> <li>• justify when to use a loop and when not to</li> <li>• explain the importance of instruction order in a loop</li> <li>• recognise that not all tools enable more than one process to be run at once</li> </ul>		<p>change the composition of a digital image</p> <ul style="list-style-type: none"> <li>• use cloning to retouch a digital image</li> <li>• use an application to add to the composition of a digital image</li> <li>• add text to a digital image</li> </ul>	<p>specific number of times</p> <ul style="list-style-type: none"> <li>• identify patterns in a sequence, e.g. 'step 3 times' means the same as 'step, step, step'</li> <li>• justify when to use a loop and when not to</li> <li>• explain the importance of instruction order in a loop</li> <li>• recognise that not all tools enable more than one process to be run at once</li> </ul>
<p><b>Skill Progression leading to End Point</b></p>	<p>Children will be able to:</p> <ul style="list-style-type: none"> <li>• use the World Wide Web safely</li> <li>• use the different attributes associated with the web, securely and with care</li> <li>• evaluate the reliability of content and the consequences of unreliable content</li> </ul>	<p>Children will be able to:</p> <ul style="list-style-type: none"> <li>• record sound using a computer</li> <li>• play recorded audio</li> <li>• import audio into a project</li> <li>• delete a section of audio</li> <li>• change the volume of tracks in a project</li> </ul>	<p>Children will be able to:</p> <ul style="list-style-type: none"> <li>• list an everyday task as a set of instructions including repetition</li> <li>• use an indefinite loop to produce a given outcome</li> <li>• use a count-controlled loop to produce a given outcome</li> <li>• plan a program that includes appropriate loops</li> </ul>	<p>Children will be able to:</p> <ul style="list-style-type: none"> <li>• use a digital device to collect data automatically</li> <li>• choose how often to automatically collect data samples</li> <li>• use a set of logged data to find information</li> <li>• use a computer program to sort data by one attribute</li> </ul>	<p>Children will be able to:</p> <ul style="list-style-type: none"> <li>• recognise that digital images can be manipulated</li> <li>• recognise that digital images can be changed for different purposes</li> <li>• choose the most appropriate tool for a particular purpose</li> <li>• consider the impact of changes made on the</li> </ul>	<p>Children will be able to:</p> <ul style="list-style-type: none"> <li>• list an everyday task as a set of instructions including repetition</li> <li>• use an indefinite loop to produce a given outcome</li> <li>• use a count-controlled loop to produce a given outcome</li> <li>• plan a program that includes appropriate loops to</li> </ul>

			<p>to produce a given outcome</p> <ul style="list-style-type: none"> <li>recognise tools that enable more than one process to be run at the same time (concurrency)</li> <li>create two or more sequences that run at the same time</li> </ul>	<ul style="list-style-type: none"> <li>export information in different formats</li> </ul>	quality of the image	<p>produce a given outcome</p> <ul style="list-style-type: none"> <li>recognise tools that enable more than one process to be run at the same time (concurrency)</li> <li>create two or more sequences that run at the same time</li> </ul>
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**Banister Primary School  
Computing Progression  
EYFS, Key Stage 1 & 2**

**Year 5**

(Units may not be taught in this order – refer to whole school curriculum overview.)

<b>Computing Strand</b>	<b>Information Technology</b>	<b>Information Technology and Digital Literacy</b>	<b>Computer Science</b>	<b>Information Technology</b>	<b>Information Technology</b>	<b>Computer Science</b>
<b>Teach Computing Strand</b>	Computing Systems and Networks	Creating Media	Programming A	Data and Information	Creating Media	Programming B
<b>Unit Title</b>	<b>Systems and Searching</b>	<b>Video Production</b>	<b>Selection in Physical Computing</b>	<b>Flat-file Databases</b>	<b>Introduction to Vector Graphics</b>	<b>Selection in Quizzes</b>
<b>Vocabulary</b>	Digital system, physical connection, electronic connection, computer systems, search engine, rank, web search, web crawler, search engine index, content creator	Visual media, store, retrieve, export, reshoot	Crumble controller, programming environment, circuit, microcontroller, Crumble, Sparkle, component, infinite loop, count-controlled loop, condition,	Record, field, database, sorting, grouping	Vector, vector drawing, alignment grid, resize handle, zoom tool, layers, duplicate (images), group and ungroup (images)	Conditions 'if...then...else', structure, program flow, branching structure, setup code

			conditional loop, selection, action			
<b>Concept Progression</b>	<p>To be able to:</p> <ul style="list-style-type: none"> <li>recognise that a system is a set of interconnected parts which work together</li> <li>explain that computers can be connected together to form IT systems</li> <li>identify that data can be transferred between IT systems</li> <li>recognise inputs, processes, and outputs in large IT systems</li> <li>describe the role of a particular IT system in their lives</li> <li>describe the role of a particular IT system in their lives</li> <li>relate that search engines are examples of large IT systems</li> <li>explain why search engines create indices, and that they are different for each search engine</li> <li>explain the role of web crawlers in creating an index</li> </ul>	<p>To be able to:</p> <ul style="list-style-type: none"> <li>explain the features of video as a visual media format</li> <li>recognise which devices can and can't record video</li> <li>explain the purpose of a storyboard</li> <li>recognise that filming techniques can be used to create different effects</li> <li>recognise the need to regularly review and reflect on a video project</li> <li>explain the limitations of editing video on a recording device</li> <li>identify that videos can be edited on a recording device or on a computer</li> <li>identify videos can be improved through and reshooting or editing</li> </ul> <p>recognise projects need to be exported to be shared</p>	<p>To be able to:</p> <ul style="list-style-type: none"> <li>explain that a condition can only be true or false</li> <li>relate that a count-controlled loop contains a condition</li> <li>compare a count-controlled loop with a condition-controlled loop</li> <li>explain that a condition-controlled loop will stop when a condition is met</li> <li>explain that when a condition is met, a loop will complete a cycle before it stops</li> <li>o explain that selection can be used to branch the flow of a program</li> <li>explain that a loop can be used to repeatedly check whether a condition has been met</li> </ul> <p>explain the importance of instruction order in 'if...then...else...' statements</p>	<p>To be able to:</p> <ul style="list-style-type: none"> <li>explain that a computer program can be used to organise data</li> <li>explain that tools can be used to select data to answer questions</li> <li>outline how operands can be used to filter data</li> <li>outline how ordering data allows us to answer some questions</li> <li>outline how 'AND' and 'OR' can be used to refine data selection</li> <li>explain that computer programs can be used to compare data visually</li> </ul> <p>explain that we present information to communicate a message</p>	<p>To be able to:</p> <ul style="list-style-type: none"> <li>identify that a vector drawing comprises separate objects</li> <li>recognise that each object in a drawing is in its own layer</li> <li>explain how alignment and size guides can help create a more consistent drawing</li> <li>recognise that objects can be modified in groups</li> <li>recognise that vector images can be scaled without impact on quality</li> </ul> <p>consider the impact of choices made</p>	<p>To be able to:</p> <ul style="list-style-type: none"> <li>explain that a condition can only be true or false</li> <li>relate that a count-controlled loop contains a condition</li> <li>compare a count controlled loop with a condition-controlled loop</li> <li>explain that a condition-controlled loop will stop when a condition is met</li> <li>explain that when a condition is met a loop will complete a cycle before it stops</li> <li>explain that selection can be used to branch the flow of a program</li> <li>explain that a loop can be used to repeatedly check whether a condition has been met</li> </ul> <p>explain the importance of instruction order in 'if... then... else...' statements</p>

	<p>and how search results are selected</p> <ul style="list-style-type: none"> <li>• explain that ranking orders search results to make them more useful</li> <li>• explain how ranking is determined by rules, and that different search engines use different rules</li> <li>• explain why the order of results is important and to whom</li> <li>• explain how search engines make money by selling targeted advertising space</li> <li>• identify some of the limitations of search engines</li> </ul>					
<p><b>Skill Progression leading to End Point</b></p>	<p>Children will be able to:</p> <ul style="list-style-type: none"> <li>• describe the input and output of a search engine</li> <li>• demonstrate that different search terms produce different results</li> <li>• evaluate the results of search terms</li> </ul>	<p>Children will be able to:</p> <ul style="list-style-type: none"> <li>• use different camera angles</li> <li>• use pan, tilt and zoom</li> <li>• identify features of a video recording device or application</li> <li>• combine filming techniques for a given purpose</li> </ul>	<p>Children will be able to:</p> <ul style="list-style-type: none"> <li>• create a condition-controlled loop</li> <li>• use a condition in an 'if...then...'</li> <li>• use selection to switch the program flow in one of two ways</li> <li>• use a condition in an</li> </ul>	<p>Children will be able to:</p> <ul style="list-style-type: none"> <li>• choose different ways to view data</li> <li>• choose which attribute and value to search by to answer a given question (operands)</li> <li>• ask questions that need more than one attribute to answer</li> <li>• choose which attribute to sort data by to answer a given question</li> </ul>	<p>Children will be able to:</p> <ul style="list-style-type: none"> <li>• add an object to a vector drawing</li> <li>• select one object or multiple objects</li> <li>• delete objects</li> <li>• move objects between the layers of a drawing</li> <li>• duplicate objects using copy and paste</li> <li>• modify and reposition objects</li> </ul>	<p>Children will be able to:</p> <ul style="list-style-type: none"> <li>• choose a condition to use in a program</li> <li>• create a condition-controlled loop</li> <li>• use a condition in an 'if... then...'</li> <li>• use a condition in an 'if... then...'</li> <li>• use a condition in an 'if... then...'</li> <li>• use a condition in an 'if... then...'</li> </ul>



<p><b>Concept Progression</b></p>	<ul style="list-style-type: none"> <li>recognise that data is transferred across networks using agreed protocols (methods)</li> <li>explain that data is transferred in packets</li> <li>recognise that connections between computers allow access to shared stored files</li> <li>recognise computers connected to the internet allow people in different places to work together</li> <li>discuss the opportunities that technology offers for communication and collaboration</li> <li>explain which types of media can be shared through the internet</li> <li>explain that communicating and collaboration using the internet can be public or private</li> </ul>	<ul style="list-style-type: none"> <li>recognise the relationship between HTML and visual display</li> <li>recognise that web pages can contain different media types</li> <li>recognise that web pages are written by people</li> <li>recognise that a website is a set of hyperlinked web pages</li> <li>recognise components of a web page layout</li> <li>consider the ownership and use of images (copyright)</li> <li>recognise the need to preview pages (different screens / devices)</li> <li>recognise the need for a navigation path</li> <li>recognise the implications of linking to content owned by others</li> </ul>	<ul style="list-style-type: none"> <li>define a 'variable' as something that is changeable</li> <li>identify examples of information that is variable, for example, a football score during a match</li> <li>explain that a variable can be used in a program, e.g. 'score'</li> <li>define a program variable as a placeholder in memory for a single value</li> <li>explain that a variable has a name and a value</li> <li>explain that a variable has a name and a value</li> <li>recognise that the value of a variable can be used by a program</li> <li>recognise that the value of a variable can be updated</li> <li>identify that variables can hold numbers (integers) or letters (strings)</li> <li>define the way that a variable is changed</li> <li>recognise that a variable can be set as a constant (fixed value)</li> <li>explain the importance of</li> </ul>	<ul style="list-style-type: none"> <li>identify questions that can be answered using spreadsheet data</li> <li>explain what an item of data is in a spreadsheet</li> <li>explain how the data type determines how a spreadsheet can process the data</li> <li>outline that there are different software tools to work with data</li> <li>recognise cells can be linked</li> <li>explain why data should be organised in a spreadsheet</li> <li>recognise that a cell's value automatically updates when the value in a linked cell is changed</li> </ul> <p>evaluate results in comparison to the question asked</p>	<ul style="list-style-type: none"> <li>explain that 3D models can be created on a computer</li> <li>recognise that a 3D environment can be viewed from different perspectives</li> <li>recognise that digital tools can be used to manipulate 3D objects</li> <li>show how placeholders can create holes in 3D objects</li> </ul> <p>recognise that artefacts can be broken down into a collection of 3D objects</p>	<ul style="list-style-type: none"> <li>define 'variable' as something that is changeable</li> <li>identify examples of information that is variable, e.g. a football score during a match</li> <li>explain that a variable can be used in a program, e.g. 'score'</li> <li>define a program variable as a placeholder in memory for a single value</li> <li>explain that a variable has a name and a value</li> <li>recognise that the value of a variable can be used by a program</li> <li>recognise that the value of a variable can be updated</li> <li>identify that variables can hold numbers (integers) or letters (strings)</li> <li>define the way that a variable is changed</li> <li>recognise that a variable can be set as a constant (fixed value)</li> <li>explain the importance of setting up a variable at the</li> </ul>
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			<p>setting up a variable at the start of a program (initialisation)</p> <ul style="list-style-type: none"> <li>• explain that there is only one value for a variable at any one time</li> <li>• explain that if you change the value of a variable, you cannot access the previous value (cannot undo)</li> <li>• explain that if you read a variable, the value remains</li> <li>• explain that the name of a variable is meaningless to the computer</li> <li>• explain that the name of a variable needs to be unique</li> </ul>			<p>start of a program (initialisation)</p> <ul style="list-style-type: none"> <li>• explain that there is only one value for a variable at any one time</li> <li>• explain that if you change the value of a variable, you cannot access the previous value (cannot undo)</li> <li>• explain that if you read a variable, the value remains</li> <li>• explain that the name of a variable is meaningless to the computer</li> <li>• explain that the name of a variable needs to be unique</li> </ul>
<p><b>Skill Progression leading to End Point</b></p>	<p>Children will be able to:</p> <ul style="list-style-type: none"> <li>• outline methods of communicating and collaborating using the internet</li> <li>• choose methods of internet communication and collaboration for given purposes</li> <li>• evaluate different methods of online communication and collaboration</li> <li>• decide what you should and should not share online</li> </ul>	<p>Children will be able to:</p> <ul style="list-style-type: none"> <li>• review an existing website (navigation bars, header)</li> <li>• create a new blank web page</li> <li>• add text to a web page</li> <li>• set the style of text on a web page</li> <li>• change the appearance of text</li> <li>• embed media in a web page</li> </ul>	<p>Children will be able to:</p> <ul style="list-style-type: none"> <li>• identify a variable in an existing program</li> <li>• experiment with the value of an existing variable</li> <li>• choose a name that identifies the role of a variable to make it easier for humans to understand it</li> <li>• decide where in a program to set a variable</li> <li>• update a variable with a user input</li> </ul>	<p>Children will be able to:</p> <ul style="list-style-type: none"> <li>• calculate data using a formula for each operation</li> <li>• use functions to create new data</li> <li>• use existing cells within a formula</li> </ul> <p>choose suitable ways to present spreadsheet data</p>	<p>Children will be able to:</p> <ul style="list-style-type: none"> <li>• position 3D shapes relative to one another</li> <li>• use digital tools to modify 3D objects</li> <li>• combine objects to create a 3D digital artefact</li> <li>• use digital tools to accurately size 3D objects</li> </ul> <p>construct a 3D model which reflects a real world object</p>	<p>Children will be able to:</p> <ul style="list-style-type: none"> <li>• identify a variable in an existing program</li> <li>• experiment with the value of an existing variable</li> <li>• choose a name that identifies the role of a variable to make it more usable (to humans)</li> <li>• decide where in a program to set a variable</li> </ul>

		<ul style="list-style-type: none"><li>• add web pages to a website</li><li>• preview a web page (different screen sizes)</li><li>• insert hyperlinks between pages</li><li>• insert hyperlinks to another site</li></ul>	<ul style="list-style-type: none"><li>• use an event in a program to update a variable</li><li>• use a variable in a conditional statement to control the flow of a program</li><li>• use the same variable in more than one location in a program</li></ul>			<ul style="list-style-type: none"><li>• update a variable with a user input</li><li>• use an event in a program to update a variable</li><li>• use a variable in a conditional statement to control the flow of a program</li><li>• use the same variable in more than one location in a program</li></ul>
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