



**Threshold Concepts (KS1 and KS2):** These are designed to be advanced throughout the primary years. This reflects the nature of growing depth and mastery. They should be repeatable. They become both the planning and assessment foci.

Breadth of	Threshold Concepts				
<p><b>Study KS1:</b> <b>What will be covered?</b></p> <p>Understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following a sequence of instructions.</p> <p>Write and test simple programs.</p> <p>Use logical reasoning to predict the behaviour of simple programs.</p> <p>Organise, store, manipulate and retrieve data in a range of digital formats.</p> <ul style="list-style-type: none"> <li>Communicate safely and respectfully online, keeping personal information private and recognise common uses of information technology beyond school.</li> </ul>	<p><b>Code:</b> This concept involves developing an understanding of instructions, logic and sequences.</p>	<p><b>Connect:</b> This concept involves developing an understanding of how to safely connect with others.</p>	<p><b>Communicate:</b> This concept involves using apps to communicate one's ideas.</p>		
<p><b>YR</b></p>					
<p><b>Y1</b></p>					



**Computing long-term overview incorporating Breadth of Study and Threshold Concepts and skills**

**YR-Y6**

	<p><b>Motion:</b> Control motion by specifying the number of steps to travel, direction and turn. (Beebot round a mat)</p> <p><b>Looks:</b> Add text strings, show and hide objects and change the features of an object. (Book creator)</p> <p><b>Sound:</b> Select sounds and control when they are heard, their duration and volume. (Scratch Jr Dance)</p>	<p><b>Participate:</b> Participate in class social media accounts. (School twitter)</p> <p><b>Understand:</b> Understand online risks and the age rules for sites. (Twitter – Think You Know)</p>	<p><b>Communicate:</b> Use a range of applications and devices in order to communicate ideas, work and messages. (Think You Know) (Book creator and publishing on Twitter)</p>		
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<p><b>Draw:</b> Control when drawings appear and set the pen colour, size and shape.-(Book Creator)</p> <p><b>Events:</b> Specify user inputs (such as clicks) to control events.</p> <p><b>Control:</b> Specify the nature of events (such as a single event or a loop).</p> <p><b>Sensing:</b> Create conditions for actions by waiting for a user input (such as responses to questions like: What is your name?).</p>					
<p>Enrichment for Y1</p>	<p>Trip to: Workshop for Great Fire of London/trip TBC</p>				



<p><b>Y2</b></p>	<p><b>Motion:</b> Control motion by specifying the number of steps to travel, direction and turn. (Beebots)</p> <p><b>Looks:</b> Add text strings, show and hide objects and change the features of an object. Scratch – my story and best friend app)</p> <p><b>Sound:</b> Select sounds and control when they are heard, their duration and volume. (My story and best friend app)</p> <p><b>Draw:</b> Control when drawings appear and set the pen colour, size and shape. (Scratch – my story)</p> <p><b>Events:</b> Specify user inputs (such as clicks) to control events. (My story and best friend App)</p> <p><b>Control:</b> Specify the nature of events (such as a single event or a loop). (My story)</p> <p><b>Sensing:</b> Create conditions for actions by waiting for a user input (such as responses to questions like: What is your name?). (Best friend app)</p>	<p><b>Participate:</b> Participate in class social media accounts. (Twitter and school website)</p> <p><b>Understand:</b> Understand online risks and the age rules for sites. (E-safety – online/offline)</p>	<p><b>Variation:</b> Use a range of applications and devices in order to communicate ideas, work and messages (Twitter, book creator, school website)</p>		
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<p>Enrichment for Y2</p>	<p>Trips to: Windsor Castle, local church war memorial Visit from Florence Nightingale.</p>				
<p><b>Ongoing continuous provision for KS1</b></p>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
<p><b>Technical Vocabulary for KS1</b></p>					
	<p><b>Threshold Concepts</b></p>				



**KS2: Breadth of study**

Design and write programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.

Use sequence, selections and repetition in programs; work with variables and various forms of input and output; generate appropriate inputs and predicted outputs to test programs.

Use logical reasoning to explain how a simple algorithm works, 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.

Describe how internet search engines find and store data; use search engines effectively; be discerning in evaluating digital content; respect

**Code:** This concept involves developing an understanding of instructions, logic and sequences.

**Connect:** This concept involves developing an understanding of how to safely connect with others.

**Communicate:** This concept involves using apps to communicate one's ideas.

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<p>individuals and intellectual property; use technology responsibly, securely and safely.</p> <p>Select, use and combine a variety of software (including internet services) on a range of digital devices to accomplish given goals, including collecting, analysing, evaluating and presenting data and information.</p>					
<p>Y3</p>	<p><b>Motion:</b> Use specified screen coordinates to control movement. (magic carpet)</p> <p><b>Looks:</b> Set the appearance of objects and create sequences of changes. (Magic carpet, monologue and stage and sound)</p> <p><b>Sound:</b> Create and edit sounds. Control when they are heard, their volume, duration and rests. (Magic carpet and stop frame animation)</p> <p><b>Draw:</b> Control the shade of pens. (Magic Carpet)</p> <p><b>Events:</b> Specify conditions to trigger events. (Shape procedure)</p> <p><b>Control:</b> Use IF THEN conditions to control events or objects. (Magic Carpet)</p> <p><b>Sensing:</b> Create conditions for actions by sensing proximity or by waiting</p>	<p><b>Contribute:</b> Contribute to blogs that are moderated by teachers.</p> <p><b>Risks:</b> Give examples of the risks posed by online communications.</p> <p><b>Understand:</b> Understand the term 'copyright'.</p> <p>Understand that comments made online that are hurtful or offensive are the same as bullying.</p> <p>Understand how online services work.</p>	<p><b>Advanced features:</b> Use some of the advanced features of applications and devices in order to communicate ideas, work or messages professionally (publishing work using Microsoft)</p>		



	for a user input (such as proximity to a specified colour or a				
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	<p>line or responses to questions). (Monologue, shape procedures and stage and sound)</p> <p><b>Variables and lists:</b> Use variables to store a value Use the functions define, set, change, show and hide to control the variables. (Magic carpet and ladybird game)</p> <p><b>Operators:</b></p> <p>Use the Reporter operators () + () () - () () * () () / ()</p>				
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	<p>to perform calculations. (Monologue)</p>				
<p>Enrichment for Y3</p>	<p>Egyptian day Ufton Court day trip.</p>				
<p>Y4</p>	<p><b>Motion:</b> Use specified screen coordinates to control movement.(Exploring loops)</p> <p><b>Looks:</b> Set the appearance of objects and create sequences of changes. (Loops)</p> <p><b>Sound:</b> Create and edit sounds. Control when they are heard, their volume, duration and rests. (Toy give away)</p> <p><b>Draw:</b> Control the shade of pens. (Loops and sequence)</p> <p><b>Events:</b> Specify conditions to trigger events. (Toy give away)</p> <p><b>Control:</b> Use IF THEN conditions to control events or objects. (Helicopter)</p> <p><b>Sensing:</b> Create conditions for actions by sensing proximity or by waiting for a user input (such as proximity to a specified colour or a</p>	<p><b>Contribute:</b> Contribute to blogs that are moderated by teachers. (Pobble)</p> <p><b>Risks:</b> Give examples of the risks posed by online communications.</p> <p><b>Understand:</b> Understand the term 'copyright'.</p> <p>Understand that comments made online that are hurtful or offensive are the same as bullying.</p> <p>Understand how online services work.</p>	<p><b>Advanced features:</b> Use some of the advanced features of applications and devices in order to communicate ideas, work or messages professionally</p>	<p>.</p>	



# Computing long-term overview incorporating Breadth of Study and Threshold Concepts and skills

YR-Y6

	line or responses to questions). (Toy giveaway)				
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	<p><b>Variables and lists:</b> Use variables to store a value Use the functions define, set, change, show and hide to control the variables. (Toy giveaway/Helicopter)</p> <p><b>Operators:</b> Use the Reporter operators ( ) + ( ) ( ) - ( ) ( ) * ( ) ( ) / ( ) to perform calculations.</p>				
Enrichment for Y4	Ufton Court Residential				



<p>Y5</p>	<p><b>Motion:</b> Set IF conditions for movements. Specify types of rotation giving the number of degrees.</p> <p><b>Looks:</b> Change the position of objects between screen layers (send to back, bring to front).</p> <p><b>Sound:</b> <del>Upload sounds from a file and edit them. Add effects such as fade in and out and control their implementation.</del></p> <p><b>Draw:</b> Combine the use of pens with movement to create interesting effects.</p> <p><b>Events:</b> Set events to control other events by 'broadcasting' information as a trigger. (My best friend)</p> <p><b>Control:</b> Use IF THEN ELSE conditions to control events or objects.</p> <p><b>Sensing:</b> Use a range of sensing tools (including proximity, user inputs, loudness and mouse position) to control events or actions.</p> <p><b>Variables and lists:</b> Use a list to create a set of variables</p>	<p><b>Collaborate:</b> Collaborate with others online on sites approved and moderated by teachers.</p> <p><b>Risks:</b> Give examples of the risks of online communities and demonstrate knowledge of how to minimise risk and report problems.</p> <p><b>Understand:</b> 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>Understand the effect of online comments and show responsibility and sensitivity when online.</p> <p>Understand how simple networks are set up and used.</p>	<p><b>Applications:</b> Choose the most suitable applications and devices for the purposes of communication.</p> <p><b>Advanced features:</b> Use many of the advanced features in order to create high quality, professional or efficient communications.</p>	<p><b>Selecting applications:</b> Select appropriate applications to devise, construct and manipulate data and present it in an effective and professional manner</p>	
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# Computing long-term overview incorporating Breadth of Study and Threshold Concepts and skills

## YR-Y6

	<p><b>Operators:</b> Use the Boolean operators ( ) &lt; ( ) ( ) = ( ) ( ) &gt; ( ) ( )and() ( )or() Not() to define conditions.</p> <ul style="list-style-type: none"><li>• Use the Reporter operators ( ) + ( ) ( ) - ( ) ( ) * ( ) ( ) / ( ) to perform calculations.</li></ul> <p>Pick Random ( ) to ( ) Join ( ) ( ) Letter ( ) of ( ) Length of ( ) ( ) Mod ( ) This reports the remainder after a division calculation Round ( ) ( ) of ( )</p>				
Enrichment for Y5	Reading University Museum of Greek Archaeology				



**Computing long-term overview incorporating Breadth of Study and Threshold Concepts and skills**

**YR-Y6**

<p>Y6</p>	<p><b>Motion:</b> Set IF conditions for movements. Specify types of rotation giving the number of degrees.</p> <p><b>Looks:</b> Change the position of objects between screen layers (send to back, bring to front).</p> <p><b>Sound:</b> Upload sounds from a file and edit them. Add effects such as fade in and out and control their implementation.</p> <p><b>Draw:</b> Combine the use of pens with movement to create interesting effects.</p> <p><b>Events:</b> Set events to control other events by 'broadcasting' information as a trigger. (My best friend)</p> <p><b>Control:</b> Use IF THEN ELSE conditions to control events or objects.</p>	<p><b>Collaborate:</b> Collaborate with others online on sites approved and moderated by teachers.</p> <p><b>Risks:</b> Give examples of the risks of online communities and demonstrate knowledge of how to minimise risk and report problems.</p> <p><b>Understand:</b> 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>Understand the effect of online comments and show responsibility and sensitivity when online.</p> <p>Understand how simple networks are set up and used.</p>	<p><b>Applications:</b> Choose the most suitable applications and devices for the purposes of communication.</p> <p><b>Advanced features:</b> Use many of the advanced features in order to create high quality, professional or efficient communications.</p>	<p><b>Selecting applications:</b> Select appropriate applications to devise, construct and manipulate data and present it in an effective and professional manner</p>	
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**Computing long-term overview incorporating Breadth of Study and Threshold Concepts and skills**

**YR-Y6**

	<p><b>Sensing:</b> Use a range of sensing tools (including proximity, user inputs, loudness and mouse position) to control events or actions.</p> <p><b>Variables and lists:</b> Use a list to create a set of variables</p> <p><b>Operators:</b> Use the Boolean operators          () &lt; ()          () = ()          () &gt; ()          ()and()          ()or() Not() to define conditions.</p> <ul style="list-style-type: none"> <li>• Use the Reporter operators          () + ()          () - ()          () * ()          () / ()          to perform calculations.</li> </ul> <p>Pick Random () to ()          Join () ()          Letter () of ()          Length of ()          () Mod () This reports the remainder after a division calculation          Round ()          () of ()</p>				
<p>Enrichment for Y6</p>	<p>Globe Theatre</p>				