

# National Curriculum Coverage

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 WWW, 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

## Year 3

<b>Autumn</b>	Connecting computers; Step-frame animation		✓		✓		✓	
<b>Spring</b>	Sequencing sounds; branching databases	✓	✓	✓	✓		✓	
<b>Summer</b>	Desktop publishing; program events + actions	✓	✓	✓		✓	✓	✓

## Year 4

<b>Autumn</b>	The internet; audio editing				✓	✓	✓	✓
<b>Spring</b>	Repetition in shapes; data logging	✓	✓	✓			✓	
<b>Summer</b>	Photo editing; repetition in games	✓	✓	✓		✓	✓	✓

## Year 5

<b>Autumn</b>	Sharing information; video editing	✓	✓		✓	✓	✓	✓
<b>Spring</b>	Selection in physical computing; flat-file databases	✓	✓	✓		✓	✓	
<b>Summer</b>	Vector drawing; selection in quizzes	✓	✓	✓			✓	

## Year 6

<b>Autumn</b>	Internet communication; webpage creation	✓			✓	✓	✓	✓
<b>Spring</b>	Variables in games; introduction to spreadsheets	✓	✓	✓			✓	✓
<b>Summer</b>	3D modelling; sensing	✓	✓	✓			✓	✓



# Knowledge, Skills and Understanding Progression

## Lower Key Stage 2

		Year 3: Computing Knowledge	Year 3: Computing Problem Solving	Year 3: Computing Communication	Year 3: Understanding
<b>Autumn</b>	Connecting computers; Stop-frame animation	<ul style="list-style-type: none"> <li>• Devices have inputs, outputs and are connected to networks</li> <li>• Videos comprise sequenced frames</li> </ul>	<ul style="list-style-type: none"> <li>• Adjusting network designs to create a working model representation</li> <li>• Adjusting frames for editing</li> </ul>	<ul style="list-style-type: none"> <li>• Create an effective intranet network model</li> <li>• Producing a stop-frame animation</li> </ul>	<ul style="list-style-type: none"> <li>• I can use a computer network to save and search for information</li> <li>• I can design, edit and produce my own animated video</li> </ul>
<b>Spring</b>	Sequencing sounds; branching databases	<ul style="list-style-type: none"> <li>• Sounds can be played and organised digitally</li> <li>• Computers operate using binary choices</li> </ul>	<ul style="list-style-type: none"> <li>• Editing in a sound sequence</li> <li>• Troubleshooting in a branching database</li> </ul>	<ul style="list-style-type: none"> <li>• Create a sound sequence</li> <li>• Create a working branching database to identify a selection</li> </ul>	<ul style="list-style-type: none"> <li>• I can make music on a computer</li> <li>• I can program a branching database</li> </ul>
<b>Summer</b>	Desktop publishing; program events + actions	<ul style="list-style-type: none"> <li>• Design programs are editable and can incorporate pictures from the internet</li> <li>• Programming informs actions on a computer</li> </ul>	<ul style="list-style-type: none"> <li>• Adjusting and saving a design online</li> <li>• Editing code to achieve a desired effect</li> </ul>	<ul style="list-style-type: none"> <li>• Create an invitation (or other word+picture design)</li> <li>• Create an online maze-type game (Scratch)</li> </ul>	<ul style="list-style-type: none"> <li>• I can use online tools to create an effective design for practical use</li> <li>• I can use programming to move a character on a screen</li> </ul>
		Year 4: Computing Knowledge	Year 4: Computing Problem Solving	Year 4: Computing Communication	Year 4: Understanding
<b>Autumn</b>	The internet; audio editing	<ul style="list-style-type: none"> <li>• The internet is a network of networks that is user-editable</li> <li>• Input and output devices record and play digital sound</li> </ul>	<ul style="list-style-type: none"> <li>• Navigating online and evaluating sources</li> <li>• Setting up and sharing a sound recording with independence</li> </ul>	<ul style="list-style-type: none"> <li>• Creating an effective internet network model</li> <li>• Creating and evaluating a podcast recording</li> </ul>	<ul style="list-style-type: none"> <li>• I can search online effectively and evaluate sources</li> <li>• I can create and share a digital sound recording</li> </ul>
<b>Spring</b>	Repetition in shapes; data logging	<ul style="list-style-type: none"> <li>• Programd instructions can be repeated and looped</li> <li>• Data can be collected automatically, digitally</li> </ul>	<ul style="list-style-type: none"> <li>• Adjusting instructions using repetition and looping</li> <li>• Working out best data representation model</li> </ul>	<ul style="list-style-type: none"> <li>• Create shapes and patterns using Logo</li> <li>• Collect and review data using a data-logger</li> </ul>	<ul style="list-style-type: none"> <li>• I can use repetition and looping as useful programming shortcuts</li> <li>• I can automate data collection and analyse what I find</li> </ul>
<b>Summer</b>	Photo editing; repetition in games	<ul style="list-style-type: none"> <li>• Digital images can be altered</li> </ul>	<ul style="list-style-type: none"> <li>• Exploring possibilities of digital photo editing</li> </ul>	<ul style="list-style-type: none"> <li>• Creating an edited image and then editing further</li> </ul>	<ul style="list-style-type: none"> <li>• I can create and save my own edited image</li> </ul>



# Knowledge, Skills and Understanding Progression

## Upper Key Stage 2

		Year 5: Computing Knowledge	Year 5: Computing Problem Solving	Year 5: Computing Communication	Year 5: Understanding
<b>Autumn</b>	Sharing information; video editing	<ul style="list-style-type: none"> <li>Information can be shared in large-scale and small-scale real-world systems</li> <li>Digital video can be edited</li> </ul>	<ul style="list-style-type: none"> <li>Test different search results</li> <li>Explore possibilities of digital video editing</li> </ul>	<ul style="list-style-type: none"> <li>Describe how information is shared between computers</li> <li>Create and edit group video</li> </ul>	<ul style="list-style-type: none"> <li>I can explain how online search results are generated and influenced</li> <li>I can create my own style of visual content</li> </ul>
<b>Spring</b>	Selection in physical computing; flat-file databases	<ul style="list-style-type: none"> <li>Digital programming can control physical devices</li> <li>Information stored digitally in tables is interactive</li> </ul>	<ul style="list-style-type: none"> <li>Editing coding to create a desired effect in a physical device</li> <li>Input data correctly and apply interactions</li> </ul>	<ul style="list-style-type: none"> <li>Create a program sequence of movements using a Crumble controller</li> <li>Create visual representations (graphs and charts) from data</li> </ul>	<ul style="list-style-type: none"> <li>I can program hardware devices</li> <li>I can work with digital data</li> </ul>
<b>Summer</b>	Vector drawing; selection in quizzes	<ul style="list-style-type: none"> <li>A vector drawing can be created digitally using shapes and lines</li> <li>Algorithms control digital outcomes</li> </ul>	<ul style="list-style-type: none"> <li>Use repetition and adjustments to change vector drawings</li> <li>Use adjustments in the 'if... then... else...' model</li> </ul>	<ul style="list-style-type: none"> <li>Create a vector drawing</li> <li>Create an interactive quiz in Scratch</li> </ul>	<ul style="list-style-type: none"> <li>I can use online programming tools</li> <li>I can create and edit an algorithm in context</li> </ul>
		Year 6: Computing Knowledge	Year 6: Computing Problem Solving	Year 6: Computing Communication	Year 6: Understanding
<b>Autumn</b>	Internet communication; webpage creation	<ul style="list-style-type: none"> <li>Data is shared online in packets</li> <li>Websites can be edited in many ways</li> </ul>	<ul style="list-style-type: none"> <li>Evaluation of different data sharing methods</li> <li>Explore different website editing strategies</li> </ul>	<ul style="list-style-type: none"> <li>Share data online in different ways</li> <li>Create a website (offline if possible)</li> </ul>	<ul style="list-style-type: none"> <li>I can explain different ways that data is shared in different networks</li> <li>I can create my own website incorporating edited images and video</li> </ul>
<b>Spring</b>	Variables in games; introduction to spreadsheets	<ul style="list-style-type: none"> <li>Variables have a name and can be assigned any value</li> <li>Data can be formatted and edited using formulae</li> </ul>	<ul style="list-style-type: none"> <li>Adjust variables in context</li> <li>Adjust a formula to create a desired effect</li> </ul>	<ul style="list-style-type: none"> <li>Create a project using variables</li> <li>Apply a formula to cells in a spreadsheet</li> </ul>	<ul style="list-style-type: none"> <li>I can use variables to add a changeable element to a game or project</li> <li>I can manipulate data in a spreadsheet</li> </ul>
<b>Summer</b>	3D modelling; sensing	<ul style="list-style-type: none"> <li>3D models can be created digitally</li> <li>Physical computing can incorporate sensing</li> </ul>	<ul style="list-style-type: none"> <li>Edit instructions to change a 3D model</li> <li>Edit programming following a test run</li> </ul>	<ul style="list-style-type: none"> <li>Create and group 3D shapes</li> <li>Create a sequence using micro:bit</li> </ul>	<ul style="list-style-type: none"> <li>I can create 3D models using an online program</li> <li>I can build, test and run a physical computing project</li> </ul>