

# Computing Progression of Knowledge and Skills

	Year 1 (KS1 skills)	Year 2 (KS1 skills)	Year3 (Lower KS2 skills)	Year 4 (Lower KS2 skills)	Year 5 (Upper KS2 skills)	Year 6 (Upper KS2 skills)
Computing systems and networks  NC Statements	<p>Recognise some common uses of information technology beyond school.</p> <p>Identify technology.</p> <p>Identify a computer and its main parts.</p> <p>Use a mouse in different ways.</p> <p>Use a computer to type on a computer.</p> <p>Use the keyboard to edit text.</p> <p>Create rules for using technology responsibly.</p>	<p>Recognise common uses of information technology beyond school.</p> <p>Recognise the uses and features of information technology.</p> <p>Identify the uses of information technology in the school</p> <p>Identify information technology beyond school</p> <p>Explain how information technology helps us</p> <p>Explain how to use information technology safely</p> <p>Recognise that choices are made when using information technology</p>	<p>Begin to understand computer networks including the internet; how they can provide multiple services, such as the world wide web</p> <p>Explain how digital devices function.</p> <p>Identify input and output devices.</p> <p>Recognise how digital devices can change the way that we work.</p> <p>Explain how a computer network can be used to share information.</p> <p>Explore how digital devices can be connected.</p> <p>Recognise the physical components of a network.</p>	<p>Understand computer networks including the internet; how they can provide multiple services, such as the world wide web</p> <p>Describe how networks physically connect to other networks.</p> <p>Recognise how networked devices make up the internet.</p> <p>Outline how websites can be shared via the World Wide Web (WWW)</p> <p>Describe. how content can be added and accessed on the World Wide Web (WWW).</p> <p>Recognise how the content of the WWW is created by people.</p> <p>Evaluate the consequences of unreliable content.</p>	<p>Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content</p> <p>Explain that computers can be connected together to form systems.</p> <p>Recognise the role of computer systems in our lives.</p> <p>Identify how to use a search engine.</p> <p>Describe how search engines select results.</p> <p>Explain how search results are ranked.</p> <p>Recognise why the order of results is important, and to whom.</p>	<p>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</p> <p>Explain the importance of internet addresses.</p> <p>Recognise how data is transferred across the internet.</p> <p>Explain how sharing information online can help people to work together.</p> <p>Evaluate different ways of working together online.</p> <p>Recognise how we communicate using technology. Evaluate different methods of online communication.</p>

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<b>Creating Media</b>	<p><i>Use technology purposefully to create, organise and store digital content,</i></p> <p>Make marks on a screen and explain which tools they used</p> <p>Draw lines on a screen and explain which tools they used</p> <p>Use the paint tools to draw a picture</p> <p>Change the colour and brush sizes</p> <p>Choose appropriate paint tools and colours to recreate the work of an artist.</p> <p>Type capital letters</p> <p>Explain what the keys that I have already learnt about do.</p> <p>Identify the toolbar and use bold, italic, and underline.</p> <p>Select a word by double-clicking.</p> <p>Select all of the text by clicking and dragging.</p> <p>Change the font.</p> <p>Make changes to text on a computer</p>	<p><i>Use technology purposefully to create, organise, store, manipulate, and retrieve digital content</i></p> <p>Use a digital device to take a photograph. Make choices when taking a photograph.</p> <p>Explain why a photo looks better in portrait or landscape format. Describe what makes a good photograph. Improve a photograph by retaking it. Decide how photographs can be improved. Use tools to change an image.</p> <p>Recognise that photos can be changed.</p> <p>Create a rhythm which represents an animal I've chosen. Create my animal's rhythm on a computer. Add a sequence of notes to my rhythm. Refine my musical pattern on a computer.</p>	<p>Know that animation is a sequence of drawings or photographs. Relate animated movement with a sequence of images. Plan an animation. Use onion skinning to help make small changes between frames. Review a sequence of frames to check their work. Evaluate the quality of their animation. Evaluate the impact of adding other media to an animation.</p> <p>Change font style, size, and colours for a given purpose. Edit text. Choose the best locations for my content. Paste text and images to create a magazine cover. Make changes to content after I've added it.</p>	<p>Identify that sound can be recorded. Explain that audio recordings can be edited. Recognise the different parts of creating a podcast project. Apply audio editing skills independently. Combine audio to enhance my podcast project.</p> <p>Explain that colours can be changed in digital images. Explain how the composition of digital images can be changed. Explain how cloning can be used in photo editing. Add to the composition of an image by cloning. Identify how a photo edit can be improved. Remove parts of an image using cloning. Explain that images can be combined. Experiment with tools to select and copy part of an image. Use a range of tools to copy between images.</p>	<p>Explain what makes a video effective. Capture video using a range of techniques. Create a storyboard. Identify that video can be improved through reshooting and editing. Consider the impact of the choices made when making and sharing a video.</p> <p>Copy part of a drawing by duplicating several objects. Change the order of layers in a vector drawing. Use the zoom tool to help me add detail to my drawings. Move, resize, and rotate objects I have duplicated. Create a vector drawing for a specific purpose.</p>	<p>Review an existing website and consider its structure. Plan the features of a web page. Consider the ownership and use of images (copyright). Recognise the need to preview pages. Outline the need for a navigation path. Recognise the implications of linking to content owned by other people.</p> <p>Identify that digital 3D objects can be modified. Recognise that objects can be combined in a 3D model. Create a 3D model for a given purpose. Design and create my own digital 3D model.</p>

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<b>Data and information</b>	<p>Identify that objects can be counted.</p> <p>Label objects.</p> <p>Describe objects in different ways.</p> <p>Count objects with the same properties.</p> <p>Compare groups of objects.</p> <p>Answer questions about groups of objects.</p>	<p>Choose a suitable attribute to compare people.</p> <p>Collect the data I need.</p> <p>Create a pictogram and draw conclusions from it.</p> <p>Use a computer program to present information in different ways.</p> <p>Share what I have found out using a computer.</p> <p>Give simple examples of why information should not be shared</p>	<p>Create questions to use in a branching database.</p> <p>Create questions that will enable objects to be uniquely identified.</p> <p>Create a physical version of a branching database.</p> <p>Create a branching database that reflects my plan.</p>	<p>Plan how to collect data using a data logger.</p> <p>Write programs that use data as a condition.</p> <p>Use a data logger to collect data.</p> <p>Interpret data that has been collected using a data logger.</p> <p>Draw conclusions from the data that I have collected.</p> <p>I can explain the benefits of using a data logger.</p>	<p>Explain that data can be grouped using chosen values.</p> <p>Group information using a database.</p> <p>Combine grouping and sorting to answer specific questions.</p> <p>Choose which field and value are required to answer a given question.</p> <p>Outline how 'AND' and 'OR' can be used to refine data selection.</p> <p>Choose multiple criteria to answer a given question.</p> <p>Select an appropriate chart to visually compare data</p> <p>refine a chart by selecting a particular filter.</p>	<p>Explain which data types can be used in calculations.</p> <p>Construct a formula in a spreadsheet.</p> <p>Identify that changing inputs changes outputs.</p> <p>Calculate data using different operations.</p> <p>Create a formula which includes a range of cells.</p> <p>Apply a formula to multiple cells by duplicating it.</p>

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<b>Programming</b>	<p>Start to understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following precise and unambiguous instructions.</p> <p>Create and debug simple programs</p> <p>Use logical reasoning to predict the behaviour of simple programs</p> <p>Predict the outcome of a command on a device.</p> <p>Start a sequence from the same place.</p> <p>Predict the outcome of a sequence involving up to four commands.</p> <p>Explain what my program should do.</p> <p>Choose the order of commands in a sequence.</p> <p>Debug my program.</p> <p>Use my algorithm to create a program.</p>	<p>Understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following precise and unambiguous instructions.</p> <p>Create and debug simple programs</p> <p>Use logical reasoning to predict the behaviour of simple programs</p> <p>Explain what my algorithm should achieve.</p> <p>Create an algorithm to meet my goal.</p> <p>Use my algorithm to create a program.</p> <p>Test and debug each part of the program.</p> <p>Plan algorithms for different parts of a task.</p> <p>Put together the different parts.</p> <p>Work out the actions of a sprite in an algorithm.</p>	<p>Combine sound commands.</p> <p>Order notes into a sequence.</p> <p>Build a sequence of commands.</p> <p>Decide the actions for each sprite in a program.</p> <p>Make design choices for my artwork.</p> <p>Identify and name the objects I will need for a project.</p> <p>Implement my algorithm as code.</p> <p>Identify and fix bugs in a program.</p> <p>Test a program against a given design.</p> <p>Match a piece of code to an outcome.</p> <p>Modify a program using a design.</p> <p>Design and create a maze-based challenge.</p> <p>Make design choices and justify them.</p> <p>Implement my design.</p> <p>Evaluate my project.</p>	<p>Begin to use sequence, selection, and repetition in programs; work with variables and various forms of input and output</p> <p>Begin to design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts</p> <p>Write an algorithm to produce a given outcome.</p> <p>Use a count-controlled loop to produce a given outcome.</p> <p>Design a program that includes count-controlled loops.</p> <p>Make use of my design to write a program.</p> <p>Develop my program by debugging it.</p> <p>Develop a design that includes two or more</p>	<p>Begin to use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.</p> <p>Use sequence, selection, and repetition in programs; work with variables and various forms of input and output</p> <p>Use selection in an infinite loop to check a condition.</p> <p>Create a program that uses selection to produce different outcomes.</p> <p>Design the flow of a program that contains 'if... then... else...'</p> <p>Implement my algorithm to create the first section of my program.</p> <p>Control a simple circuit connected to a computer.</p> <p>Write a program that includes count-controlled loops.</p>	<p>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</p> <p>Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs</p> <p>Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts</p> <p>Explain that a variable has a name and a value.</p> <p>Create algorithms for my project</p>

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	<p>Use sprites that match my design.</p> <p>Add programming blocks based on my algorithm.</p> <p>Test the programs I have created. Create an algorithm for each sprite.</p>	<p>Decide which blocks to use to meet the design.</p> <p>Build the sequences of blocks I need.</p> <p>Choose the images for my own design.</p> <p>Create an algorithm.</p> <p>Build sequences of blocks to match my design.</p>		<p>loops which run at the same time.</p> <p>Modify an infinite loop in a given program.</p> <p>Design and create a project that includes repetition.</p> <p>Develop the use of count-controlled loops in a different programming environment.</p>	<p>Explain that a loop can stop when a condition is met.</p> <p>Explain that a loop can be used to repeatedly check whether a condition has been met.</p> <p>Design and create a physical project that includes selection.</p>	<p>Choose a name that identifies the role of a variable.</p> <p>Test the code that I have written.</p> <p>Identify ways that my game could be improved.</p> <p>Use variables to extend my game</p> <p>Create a program to run on a controllable device</p> <p>Explain that selection can control the flow of a program.</p> <p>Update a variable with a user input</p> <p>Use an conditional statement to compare a variable to a value.</p> <p>Design and create a project that uses inputs and outputs on a controllable device.</p>
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E-Safety	Use technology safely and respectfully, keeping personal information private	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	Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.