

# Computing Curriculum Overview



This Curriculum Overview shows what your child will learn in Computing during their time at The Free School Norwich. This is reviewed annually and may be adapted to meet the needs of individual children or classes, and where appropriate, will be linked to events or places in our local environment.

Year 1 Computing					
Harvest	Christmas	Winter	Spring	Whitsun	Summer
Computing systems and networks – Technology around us	Creating Media – Digital Painting	Programming – Moving a Robot	Data and Information - Grouping Data	Creating Media – Digital Writing	Programming – Programming Animations
<p><b>Sequence:</b></p> <p>To identify technology To identify a computer and its main parts To use a mouse in different ways To use a keyboard to type on a computer To use the keyboard to edit text To create rules for using technology responsibly</p> <p><b>Vocabulary:</b> <i>technology / desktop / laptop logging in / click / drag / keyboard / save / arrow keys / cursor</i></p>	<p><b>Sequence:</b></p> <p>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><b>Vocabulary:</b> <i>paint tools / shape / line</i></p>	<p><b>Sequence:</b></p> <p>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><b>Vocabulary:</b> <i>command / instruction direction / sequence</i></p>	<p><b>Sequence:</b></p> <p>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><b>Vocabulary:</b> <i>label / group / record</i></p>	<p><b>Sequence:</b></p> <p>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 To explain why I used the tools that I chose To compare typing on a computer to writing on paper</p> <p><b>Vocabulary:</b> <i>word processor / keyboard backspace /</i></p>	<p><b>Sequence:</b></p> <p>To choose a command for a given purpose To show that a series of commands can be joined together To identify the effect of changing a value To explain that each sprite has its own instructions To design the parts of a project To use my algorithm to create a program</p> <p><b>Vocabulary:</b> <i>Sprite / programming block</i></p>

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<p><i>/space bar / double-click / font</i>  <b>National Curriculum Links:</b></p> <p><b>KS1 Computing</b></p> <ul style="list-style-type: none"> <li>Recognise common uses of information technology beyond school</li> <li>Use technology purposefully to create, organise, store, manipulate, and retrieve digital content</li> <li>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</li> </ul>	<p><i>brush size / digital art</i>  <b>National Curriculum Links:</b></p> <p><b>KS1 Computing</b></p> <ul style="list-style-type: none"> <li>Use technology purposefully to create, organise, store, manipulate, and retrieve digital content</li> </ul> <p><b>KS1 Art and Design</b></p> <ul style="list-style-type: none"> <li>To develop a wide range of art and design techniques in using colour, pattern, texture, line, shape, form, and space</li> <li>About the work of a range of artists, craft makers, and designers, describing the differences and similarities between different practices and</li> </ul>	<p><b>National Curriculum Links:</b></p> <p><b>KS1 Computing</b></p> <ul style="list-style-type: none"> <li>Understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following precise and unambiguous instructions</li> <li>Create and debug simple programs</li> <li>Use logical reasoning to predict the behaviour of simple programs</li> <li>Recognise common uses of information technology beyond school</li> </ul>	<p><b>National Curriculum Links:</b></p> <p><b>KS1 Computing</b></p> <ul style="list-style-type: none"> <li>Use technology purposefully to create, organise, store, manipulate, and retrieve digital content</li> <li>Use technology safely and respectfully</li> </ul>	<p><i>text / capital letters / toolbar bold / italic / underline double - clicking / dragging font / undo</i></p> <p><b>National Curriculum Links:</b></p> <p><b>KS1 Computing</b></p> <ul style="list-style-type: none"> <li>Use technology purposefully to create, organise, store, manipulate, and retrieve digital content</li> <li>Use technology safely and respectfully, keeping personal information private</li> </ul> <p><b>English – writing (Y1)</b>  Write sentences by:</p> <ul style="list-style-type: none"> <li>saying out loud what they are going to write about</li> </ul>	<p><b>National Curriculum Links:</b></p> <p><b>KS1 Computing</b></p> <ul style="list-style-type: none"> <li>Understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following precise and unambiguous instructions</li> <li>Create and debug simple programs</li> <li>Use logical reasoning to predict the behaviour of simple programs</li> </ul>
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other online technologies.	disciplines and making links to their own work			<ul style="list-style-type: none"><li>• composing a sentence orally before writing it</li><li>• sequencing sentences to form short narratives</li><li>• re-reading what they have written to check that it makes sense</li></ul>	
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Year 2 Computing					
Harvest	Christmas	Winter	Spring	Whitsun	Summer
<b>Information Technology Around Us</b>	<b>Creating Media – Digital Photography</b>	<b>Programming – Robot Algorithms</b>	<b>Data and Information - Pictograms</b>	<b>Creating Media – Digital Music</b>	<b>Programming – Programming Quizzes</b>
<p><b>Sequence:</b></p> <p>To recognise the uses and features of information technology To identify the uses of information technology in the school To identify information technology beyond school To explain how information technology helps us To explain how to use information technology safely To recognise that choices are made when using information technology</p> <p><b>Vocabulary:</b> <i>information technology devices / technology</i></p>	<p><b>Sequence:</b></p> <p>To use a digital device to take a photograph To make choices when taking 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 photos can be changed</p> <p><b>Vocabulary:</b> <i>digital device / landscape portrait / format composition / autofocus tool / editing</i></p> <p><b>National Curriculum Links:</b></p>	<p><b>Sequence:</b></p> <p>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 To explain that programming projects can have code and artwork To design an algorithm To create and debug a program that I have written</p> <p><b>Vocabulary:</b> <i>sequence / algorithm debug</i></p> <p><b>National Curriculum Links:</b></p>	<p><b>Sequence:</b></p> <p>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><b>Vocabulary:</b> <i>data / attribute</i></p> <p><b>National Curriculum Links:</b></p>	<p><b>Sequence:</b></p> <p>To say how music can make us feel To identify that there are patterns in music To experiment with sound using a computer To use a computer to create a musical pattern To create music for a purpose To review and refine our computer work</p> <p><b>Vocabulary:</b> <i>digital music / rhythm</i></p> <p><b>National Curriculum Links:</b></p>	<p><b>Sequence:</b></p> <p>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><b>Vocabulary:</b> <i>algorithm / blocks outcome</i></p> <p><b>National Curriculum Links:</b></p>

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<p><b>National Curriculum Links:</b></p> <p><b>KS1 Computing</b></p> <ul style="list-style-type: none"> <li>• Use technology purposefully to create, organise, store, manipulate, and retrieve digital content</li> <li>• Recognise common uses of information technology beyond school</li> <li>• Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content</li> </ul>	<p><b>KS1 Computing</b></p> <ul style="list-style-type: none"> <li>• Use technology purposefully to create, organise, store, manipulate, and retrieve digital content</li> <li>• Recognise common uses of information technology beyond school</li> </ul> <p><b>KS1 Art and design</b></p> <ul style="list-style-type: none"> <li>• To develop a wide range of art and design techniques in using colour, pattern, texture, line, shape, form, and space</li> </ul>	<p><b>KS1 Computing</b></p> <ul style="list-style-type: none"> <li>• Understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following precise and unambiguous instructions</li> <li>• Create and debug simple programs</li> <li>• Use logical reasoning to predict the behaviour of simple programs</li> </ul>	<p><b>KS1 Computing</b></p> <ul style="list-style-type: none"> <li>• Use technology purposefully to create, organise, store, manipulate, and retrieve digital content</li> <li>• 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</li> </ul>	<p><b>KS1 Computing</b></p> <ul style="list-style-type: none"> <li>• Use technology purposefully to create, organise, store, manipulate, and retrieve digital content</li> </ul> <p><b>KS1 Music</b></p> <ul style="list-style-type: none"> <li>• Play tuned and untuned instruments musically</li> <li>• Listen with concentration and understanding to a range of high-quality live and recorded music</li> <li>• Experiment with, create, select, and combine sounds using the</li> </ul>	<p><b>KS1 Computing</b></p> <ul style="list-style-type: none"> <li>• Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions</li> <li>• Create and debug simple programs</li> <li>• Use logical reasoning to predict the behaviour of simple programs</li> <li>• Use technology purposefully to create, organise, store,</li> </ul>
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<p>or contact on the internet or other online technologies</p>			<p><b>Maths – Year 2</b></p> <ul style="list-style-type: none"><li>• Interpret and construct simple pictograms, tally charts, block diagrams and simple tables</li><li>• Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity ask and answer questions about totalling and comparing categorical data</li></ul>	<p>interrelated dimensions of music</p>	<p>manipulate and retrieve digital content</p>
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Year 3 Computing					
Harvest	Christmas	Winter	Spring	Whitsun	Summer
<b>Computing systems and networks – Connecting computers</b>	<b>Creating Media – Stop-Frame Animation</b>	<b>Programming – Sequencing Sounds</b>	<b>Data and Information – Branching Databases</b>	<b>Creating Media – Desktop Publishing</b>	<b>Programming – Events and Actions in Programming</b>
<p><b>Sequence:</b></p> <p>To explain how digital devices function                      To identify input and output devices                      To recognise how digital devices can change the way that 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><b>Vocabulary:</b>  <i>inputs/ outputs</i>  <i>Wi-Fi / network switch</i></p>	<p><b>Sequence:</b></p> <p>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><b>Vocabulary:</b>  <i>stop- frame animation</i>  <i>media</i></p>	<p><b>Sequence:</b></p> <p>To explore a new programming environment                      To identify that commands have an outcome                      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><b>Vocabulary:</b>  <i>sprites / backdrops</i>  <i>commands / blocks</i>  <i>algorithm / code</i></p>	<p><b>Sequence:</b></p> <p>To create questions with yes/no answers                      To identify the attributes needed to collect data about an object                      To create a branching database                      To explain why it is helpful for a database to be well structured                      To plan the structure of a branching database                      To independently create an identification tool</p> <p><b>Vocabulary:</b>  <i>attributes</i>  <i>branching database / group</i>  <i>identification tool</i></p>	<p><b>Sequence:</b></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><b>Vocabulary:</b>  <i>template / layout</i>  <i>placeholders / orientation</i></p>	<p><b>Sequence:</b></p> <p>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><b>Vocabulary:</b>  <i>programming / extension</i>  <i>debugging / code</i></p>

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<p><i>Server / wireless access point / network(ed)</i></p> <p><b>National Curriculum Links:</b> <b>KS2 Computing</b></p> <ul style="list-style-type: none"> <li>• Use sequence, selection, and repetition in programs; work with variables and various forms of input and output</li> <li>• Understand computer networks including the internet; how they can provide multiple services, such as the World Wide Web; and the opportunities they offer for</li> </ul>	<p><b>National Curriculum Links:</b> <b>KS2 Computing</b></p> <ul style="list-style-type: none"> <li>• Select, use and combine a variety of software (including internet services) on a range of digital devices to design and</li> <li>• Create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information</li> <li>• Use technology safely, respectfully and responsibly; recognise acceptable/un</li> </ul>	<p><b>National Curriculum Links:</b> <b>KS2 Computing</b></p> <ul style="list-style-type: none"> <li>• Design, write, and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts</li> <li>• Use sequence, selection, and repetition in programs; work with variables and various forms of input and output</li> <li>• Use logical reasoning to explain how</li> </ul>	<p><b>National Curriculum Links:</b> <b>KS2 Computing</b></p> <ul style="list-style-type: none"> <li>• 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</li> <li>• Use technology safely, respectfully</li> </ul>	<p><i>paste / desktop publishing</i></p> <p><b>National Curriculum Links:</b> <b>KS2 Computing</b></p> <ul style="list-style-type: none"> <li>• Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content</li> <li>• 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</li> </ul>	<p><b>National Curriculum Links:</b> <b>KS2 Computing</b></p> <ul style="list-style-type: none"> <li>• Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts</li> <li>• Use sequence, selection, and repetition in programs; work with variables and various forms of input and output</li> <li>• Use logical reasoning to explain how</li> </ul>
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<p>communication and collaboration</p> <ul style="list-style-type: none"> <li>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</li> </ul>	<p>acceptable behaviour; identify a range of ways to report concerns about content and contact.</p> <p><b>English</b></p> <ul style="list-style-type: none"> <li>Pupils should be taught to: draft and write by: in narratives, creating settings, characters and plot</li> <li>Pupils should be taught to: proof-read for spelling and punctuation errors</li> </ul> <p><b>History</b></p> <ul style="list-style-type: none"> <li>The Roman Empire and its impact on Britain</li> </ul>	<p>some simple algorithms work, and to detect and correct errors in algorithms and programs</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>and responsibly</p>	<p>given goals, including collecting, analysing, evaluating, and presenting data and information</p> <p><b>English</b></p> <ul style="list-style-type: none"> <li>Pupils should be taught to draft and write by: in non-narrative material, using simple organisational devices [for example, headings and subheadings]</li> <li>Evaluate and edit by assessing the effectiveness of their own and others' writing and</li> </ul>	<p>some simple algorithms work and to detect and correct errors in algorithms and programs</p> <ul style="list-style-type: none"> <li>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</li> </ul>
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<p><b>Maths (Lesson 1)</b></p> <ul style="list-style-type: none"><li>• <b>Number and place value:</b> solve number problems and practical problems involving these ideas.</li></ul> <p><b>Art (Lesson 3)</b></p> <ul style="list-style-type: none"><li>• To improve their mastery of art and design techniques, including drawing, painting and sculpture with a range of materials</li></ul>				<p>suggesting improvements</p> <ul style="list-style-type: none"><li>• Proofread for spelling and punctuation errors</li></ul>	
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Year 4 Computing					
Harvest	Christmas	Winter	Spring	Whitsun	Summer
<b>Computer Systems and Networks – The Internet</b>	<b>Creating Media – Audio Production</b>	<b>Programming – Repetition in Shapes</b>	<b>Data and Information – Data Logging</b>	<b>Creating Media – Photo Editing</b>	<b>Programming – Repetition in Games</b>
<p><b>Sequence:</b></p> <p>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 (WWW)                      To describe how content can be added and accessed on the World Wide Web (WWW)                      To recognise how the content of the WWW is created by people                      To evaluate the consequences of unreliable content</p>	<p><b>Sequence:</b></p> <p>To identify that sound can be recorded                      To explain that audio recordings can be edited                      To recognise the different parts of creating a podcast project                      To apply audio editing skills independently                      To combine audio to enhance my podcast project                      To evaluate the effective use of audio</p> <p><b>Vocabulary:</b>  <i>audio recording / copyright / soundwave view / podcast</i></p>	<p><b>Sequence:</b></p> <p>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                      To decompose a task into small steps                      To create a program that uses count-controlled loops to produce a given outcome</p> <p><b>Vocabulary:</b>  <i>commands / value</i></p>	<p><b>Sequence:</b></p> <p>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 recognise how a computer can help us analyse data                      To identify the data needed to answer questions                      To use data from sensors to answer questions</p>	<p><b>Sequence:</b></p> <p>To explain that the composition of digital images can be changed                      To explain that colours can be changed in digital images                      To explain how cloning can be used in photo editing                      To explain that images can be combined                      To combine images for a purpose                      To evaluate how changes can improve an image</p> <p><b>Vocabulary:</b>  <i>digital images / crop / photo editing / cloning</i></p>	<p><b>Sequence:</b></p> <p>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 that 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>

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<p><b>Vocabulary:</b> <i>networked devices</i> <i>World Wide Web</i> <i>websites/ web pages</i> <i>online content / ownership</i></p> <p><b>National Curriculum Links:</b> <b>KS2 Computing</b></p> <ul style="list-style-type: none"> <li>• Unders tand 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</li> <li>• Use search technologies effectively, appreciate how results are</li> </ul>	<p><b>National Curriculum Links:</b> <b>KS2 Computing</b></p> <ul style="list-style-type: none"> <li>• Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content</li> <li>• 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,</li> </ul>	<p><i>code snippet / template</i> <i>algorithm / repetition</i> <i>count controlled loop</i></p> <p><b>National Curriculum Links:</b> <b>KS2 Computing</b></p> <ul style="list-style-type: none"> <li>• Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts</li> <li>• Use sequence, selection, and repetition in programs; work with variables and various forms of input and output</li> </ul>	<p><b>Vocabulary:</b> <i>data set / sensor</i> <i>data logger / interval</i></p> <p><b>National Curriculum Links:</b> <b>KS2 Computing</b></p> <ul style="list-style-type: none"> <li>• Use sequence, selection, and repetition in programs; work with variables and various forms of input and output</li> <li>• 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</li> </ul>	<p><b>Vocabulary:</b> <i>digital images / crop</i> <i>photo editing / cloning</i></p> <p><b>National Curriculum Links:</b> <b>KS2 Computing</b></p> <ul style="list-style-type: none"> <li>• 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</li> <li>• Use technology</li> </ul>	<p><b>Vocabulary:</b> <i>count-controlled loops</i> <i>infinite loops / outcome</i> <i>count controlled loop</i> <i>repetition / algorithm</i></p> <p><b>National Curriculum Links:</b> <b>KS2 Computing</b></p> <ul style="list-style-type: none"> <li>• Design, write, and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts</li> <li>• Use sequence, selection, and repetition in programs; work with variables and various forms</li> </ul>
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<p>selected and ranked, and be discerning in evaluating digital content</p> <ul style="list-style-type: none"> <li>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</li> <li>Use technology safely, respectfully,</li> </ul>	<p>analysing, evaluating, and presenting data and information</p> <ul style="list-style-type: none"> <li>Use technology safely, respectfully, and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact</li> </ul> <p><b>Science – Year 4 (Lesson 2)</b></p> <ul style="list-style-type: none"> <li>Sound: Find patterns between the volume of a sound and the strength of the vibrations that produced it</li> </ul>	<ul style="list-style-type: none"> <li>Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs</li> <li>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</li> </ul>	<p>given goals, including collecting, analysing, evaluating, and presenting data and information</p> <p><b>Science – Year 4</b></p> <ul style="list-style-type: none"> <li>Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.</li> <li>They should learn how to use new equipment, such as data loggers,</li> </ul>	<p>safely, respectfully, and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact</p>	<p>of input and output</p> <ul style="list-style-type: none"> <li>Use logical reasoning to explain how some simple algorithms work, and to detect and correct errors in algorithms and programs</li> <li>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,</li> </ul>
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<p>and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.</p> <p><b>PSHE (Lesson 6)</b></p> <ul style="list-style-type: none"> <li>Evaluating content for honesty and accuracy</li> </ul>	<p><b>English</b></p> <ul style="list-style-type: none"> <li>Writing : Read aloud their own writing, to a group or the whole class, using appropriate intonation and controlling the tone and volume so that the meaning is clear</li> </ul>	<p>data and information</p>	<p>appropriately. They should collect data from their own observations and measurements , using notes, simple tables and standard units, and help to make decisions about how to record and analyse this data.</p>		<p>evaluating and presenting data and information</p>
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Year 5 Computing					
Harvest	Christmas	Winter	Spring	Whitsun	Summer
<b>Computer Systems and Networks – Systems and Searching</b>	<b>Creating Media – Video Production</b>	<b>Programming – Selection in Physical Programming</b>	<b>Data and Information – Flat-File Databases</b>	<b>Creating Media – Introduction to Vector Graphics</b>	<b>Programming – Selection in Quizzes</b>
<p><b>Sequence:</b>                      To explain that computers can be connected together to form systems                      To recognise the role of computer systems in our lives                      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</p> <p><b>Vocabulary:</b>                      systems / input / process                      output / address bar                      search engine</p>	<p><b>Sequence:</b>                      To explain what makes a video effective                      To use a digital device to record video                      To capture video using a range of techniques                      To create a storyboard                      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><b>Vocabulary:</b>                      visual media                      camera angles                      digital device / recording                      editing / importing</p>	<p><b>Sequence:</b>                      To control a simple circuit connected to a computer                      To write a program that includes count-controlled loops                      To explain that a loop can stop when a condition is met                      To explain 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 program that controls a physical computing project</p> <p><b>Vocabulary:</b>                      circuit/ microcontroller</p>	<p><b>Sequence:</b>                      To use a form to record information                      To compare paper and computer-based databases                      To outline how you can answer questions by grouping and then sorting data                      To explain that tools can be used to select specific data                      To explain that computer programs can be used to compare data visually                      To use a real-world database to answer questions</p> <p><b>Vocabulary:</b>                      database / field</p>	<p><b>Sequence:</b>                      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 apply what I have learned about vector drawings</p> <p><b>Vocabulary:</b>                      vector drawings /                      resize                      rotate / duplicate</p>	<p><b>Sequence:</b>                      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 that uses selection                      To create a program that uses selection                      To evaluate my program</p> <p><b>Vocabulary:</b>                      Conditions                      conditional statement                      condition outcome                      selection / algorithm</p>

# Computing Curriculum Overview



<p><i>web crawler / index / rank</i></p> <p><b>National Curriculum Links:</b></p> <p><b>KS2 Computing</b></p> <ul style="list-style-type: none"> <li>• 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</li> <li>• Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content</li> </ul>	<p><b>National Curriculum Links:</b></p> <p><b>KS2 Computing</b></p> <ul style="list-style-type: none"> <li>• Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content</li> <li>• 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,</li> </ul>	<p><i>infinite loop / condition conditional loop / debug</i></p> <p><b>National Curriculum Links:</b></p> <p><b>KS2 Computing</b></p> <ul style="list-style-type: none"> <li>• Design, write, and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts</li> <li>• Use sequence, selection, and repetition in programs; work with variables and various forms of input and output</li> </ul>	<p><i>record / flat-file database</i></p> <p><b>National Curriculum Links:</b></p> <p><b>KS2 Computing</b></p> <ul style="list-style-type: none"> <li>• Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content</li> <li>• 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</li> </ul>	<p><i>alignment grid/ layer</i></p> <p><b>National Curriculum Links:</b></p> <p><b>KS2 Computing</b></p> <ul style="list-style-type: none"> <li>• 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.</li> </ul>	<p><b>National Curriculum Links:</b></p> <p><b>KS2 Computing</b></p> <ul style="list-style-type: none"> <li>• design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts</li> <li>• use sequence, selection, and repetition in programs; work with variables and various forms of input and output</li> <li>• use logical reasoning to explain how some simple</li> </ul>
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# Computing Curriculum Overview



	<p>analysing, evaluating, and presenting data and information</p> <ul style="list-style-type: none"> <li>Use technology safely, respectfully, and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact</li> </ul> <p><b>PSHE</b></p> <ul style="list-style-type: none"> <li>Use technology safely, respectfully, and responsibly; recognise acceptable/unacceptable behaviour</li> </ul>	<ul style="list-style-type: none"> <li>Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs</li> <li>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</li> </ul>	<p>given goals, including collecting, analysing, evaluating, and presenting data and information</p>		<p>algorithms work and to detect and correct errors in algorithms and programs</p> <ul style="list-style-type: none"> <li>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</li> </ul>
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# Computing Curriculum Overview



		<p>data and information</p> <p><b>Science – Electricity</b></p> <ul style="list-style-type: none"><li>• Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches, and buzzers</li></ul> <p><b>Design and Technology</b></p> <ul style="list-style-type: none"><li>• Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining, and finishing], accurately</li><li>• products against their</li></ul>			
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# Computing Curriculum Overview



		<p>own design criteria and consider the views of others to improve their work</p> <ul style="list-style-type: none"><li>• Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers, and motors]</li><li>• Apply their understanding of computing to program, monitor, and control their products</li></ul>			
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# Computing Curriculum Overview



Year 6 Computing					
Harvest	Christmas	Winter	Spring	Whitsun	Summer
<b>Computing Systems and Networks – Communication and Collaboration</b>	<b>Creating Media – Web Page Creation</b>	<b>Programming – Variables in Games</b>	<b>Data and Information – Introduction to Spreadsheets</b>	<b>Creating Media – 3D Modelling</b>	<b>Programming – Sensing Movement</b>
<p><b>Sequence:</b>                      To explain the importance of internet addresses                      To recognise how data is transferred across the internet                      To explain how sharing information online can help people to work together                      To evaluate different ways of working together online                      To recognise how we communicate using technology                      To evaluate different methods of online communication</p> <p><b>Vocabulary:</b>  <i>IP address / protocols</i></p>	<p><b>Sequence:</b>                      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><b>Vocabulary:</b>  <i>HTML code                      copyright-free images                      fair use / navigation                      path</i></p>	<p><b>Sequence:</b>                      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                      To design a project that builds on a given example                      To use my design to create a project                      To evaluate my project</p> <p><b>Vocabulary:</b>  <i>Variable / placeholder                      algorithms</i></p>	<p><b>Sequence:</b>                      To create a data set in a spreadsheet                      To build a data set in a spreadsheet                      To explain that formulas can be used to produce calculated data                      To apply formulas to data                      To create a spreadsheet to plan an event                      To choose suitable ways to present data</p> <p><b>Vocabulary:</b>  <i>spreadsheet / cell                      data / cell references                      formula / format</i></p>	<p><b>Sequence:</b>                      To recognise that you can work in three dimensions on a computer                      To identify that digital 3D objects can be modified                      To recognise that objects can be combined in a 3D model                      To create a 3D model for a given purpose                      To plan my own 3D model                      To create my own digital 3D model</p> <p><b>Vocabulary:</b>  <i>group / resize                      duplicate / workplane                      placeholders</i></p>	<p><b>Sequence:</b>                      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><b>Vocabulary:</b>  <i>emulator</i></p>

# Computing Curriculum Overview



<p><i>Domain Name Server data packet</i></p> <p><b>National Curriculum Links:</b></p> <p><b>KS2 Computing</b></p> <ul style="list-style-type: none"> <li>Unders tand 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</li> <li>Select, use and combine a variety of software (including internet services) on a range of digital devices to design and</li> </ul>	<p><i>hyperlink</i></p> <p><b>National Curriculum Links:</b></p> <p><b>KS2 Computing</b></p> <ul style="list-style-type: none"> <li>Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content</li> <li>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,</li> </ul>	<p><b>National Curriculum Links:</b></p> <p><b>KS2 Computing</b></p> <ul style="list-style-type: none"> <li>Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts</li> <li>Use sequence, selection, and repetition in programs; work with variables and various forms of input and output</li> <li>Use logical reasoning to</li> </ul>	<p><b>National Curriculum Links:</b></p> <p><b>KS2 Computing</b></p> <ul style="list-style-type: none"> <li>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</li> </ul> <p><b>Maths – addition, subtraction,</b></p>	<p><b>National Curriculum Links:</b></p> <p><b>KS2 Computing</b></p> <ul style="list-style-type: none"> <li>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</li> <li>Use technology safely, respectfully,</li> </ul>	<p><i>controllable device / flow physical input / operand</i></p> <p><b>National Curriculum Links:</b></p> <p><b>KS2 Computing</b></p> <ul style="list-style-type: none"> <li>Design, write, and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts</li> <li>Use sequence, selection, and repetition in programs; work with variables and various forms of input and output</li> </ul>
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# Computing Curriculum Overview



<p>create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information</p> <ul style="list-style-type: none"> <li>Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact</li> </ul>	<p>including collecting, analysing, evaluating, and presenting data and information.</p> <ul style="list-style-type: none"> <li>use technology safely, respectfully, and responsibly; recognise acceptable/unacceptable behaviour.</li> </ul> <p><b>English</b></p> <ul style="list-style-type: none"> <li>Writing composition: Identifying the audience for and purpose of the writing, selecting the appropriate form, and using other similar writing as models for their own.</li> </ul>	<p>explain how some simple algorithms work and to detect and correct errors in algorithms and programs</p> <ul style="list-style-type: none"> <li>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</li> </ul>	<p><b>multiplication, and division:</b></p> <ul style="list-style-type: none"> <li>Solve problems involving addition, subtraction, multiplication, and division</li> </ul> <p><b>Statistics:</b></p> <ul style="list-style-type: none"> <li>Interpret and construct pie charts and line graphs, and use these to solve problems</li> <li>Calculate and interpret the mean as an average</li> </ul>	<p>and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact</p> <p><b>Design and technology</b></p> <ul style="list-style-type: none"> <li>Generate, develop, model, and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design</li> </ul> <p><b>Mathematics</b></p>	<ul style="list-style-type: none"> <li>Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs</li> <li>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</li> </ul>
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# Computing Curriculum Overview



				<ul style="list-style-type: none"><li>Recognise, describe, and build simple 3D shapes, including making nets</li></ul>	data and information
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