

### ***Fairchildes Computing Curriculum Map (NCCE Teach)***

<b>Statement Number</b>	<b>KS1 National Curriculum Statements</b>
1.1	understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions
1.2	create and debug simple programs
1.3	use logical reasoning to predict the behaviour of simple programs
1.4	use technology purposefully to create, organise, store, manipulate and retrieve digital content
1.5	recognise common uses of information technology beyond school
1.6	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.
<b>Statement Number</b>	<b>KS2 National Curriculum Statements</b>
2.1	design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts

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2.2	use sequence, selection, and repetition in programs; work with variables and various forms of input and output
2.3	use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs
2.4	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
2.5	use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content
2.6	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
2.7	use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

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Year	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<b>Year 1</b>	Computing Systems and Networks – Technology around us	Creating Media – Digital Painting	Programming A – Moving a robot	Data & Information- Grouping Data	Creating Media – Digital Writing	Programming B - Programming Animations
	<ul style="list-style-type: none"> <li>- To identify technology</li> <li>- To identify a computer and its main parts</li> <li>- To use a mouse in different ways</li> <li>- To use a keyboard to type</li> <li>- To use the keyboard to edit text</li> <li>- To create rules for using technology responsibly</li> </ul>	<ul style="list-style-type: none"> <li>- To describe what different freehand tools do</li> <li>- To use shape toll and line tools</li> <li>- To make careful choices when painting a digital picture</li> <li>- To explain tools why I chose tools I used</li> <li>- To use a computer on my own to paint a picture</li> <li>- To compare painting a picture on a computer and on paper</li> </ul>	<ul style="list-style-type: none"> <li>- To explain what a given command will do</li> <li>- To act out a given word</li> <li>- To combine forwards and backwards commands to make a sequence</li> <li>- To combine four direction commands to make sequences</li> <li>- To plan a simple program</li> <li>- To find more than one solution to a problem</li> </ul>	<ul style="list-style-type: none"> <li>- To label objects</li> <li>- To identify that objects can be counted</li> <li>- To describe objects in different ways</li> <li>- To count objects with the same properties</li> <li>- To compare groups of objects</li> <li>- To answer questions about groups of objects</li> </ul>	<ul style="list-style-type: none"> <li>- To use a computer to write</li> <li>- To add and remove text on a computer</li> <li>- To identify that the look of text can be changed on a computer</li> <li>- To make careful choices when changing text</li> <li>- To explain why I use tools that I chose</li> <li>- To compare writing on a computer writing on paper</li> </ul>	<ul style="list-style-type: none"> <li>- To choose a command for a given purpose</li> <li>- To show that a series of commands can be joined together</li> <li>- To identify the effect of a changing value</li> <li>- To explain that each sprite has its own instructions</li> <li>- To design the parts of a project</li> <li>- To use my algorithm to create a program</li> </ul>
National Curriculum link	1.4 1.5 1.6	1.4	1.1 1.2 1.3 1.5	1.4 1.6	1.4 1.6	1.1 1.2 1.3 1.4

Year	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<b>Year 2</b>	Computing Systems & Networks – Information Technology Around Us	Creating Media – Digital Photography	Programming A – Robot Algorithms	Data & Information – Pictograms	Creating Media – Making Music	Programming B – Programming Quizzes

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	<ul style="list-style-type: none"> <li>- To recognise the uses and features of information technology</li> <li>- To identify information technology in the home</li> <li>- To identify information technology beyond school</li> <li>- To explain how information technology helps us</li> <li>- To show how to use information technology safely</li> <li>- To recognise that choices are made when using information technology</li> </ul>	<ul style="list-style-type: none"> <li>- To use a digital device to take a photograph</li> <li>- To make choices when taking a photograph</li> <li>- To describe what makes a good photograph</li> <li>- To decide how photographs can be improved</li> <li>- To use tools to change an image</li> <li>- To recognise that images can be changed</li> </ul>	<ul style="list-style-type: none"> <li>- To describe a series of instructions as a sequence</li> <li>- To explain what happens when we change the order of instructions</li> <li>- To use logical reasoning to predict the outcome of a program (series of commands)</li> <li>- To explain that programming projects can have code and artwork</li> <li>- To design an algorithm</li> <li>- To create and debug a program that I have written</li> </ul>	<ul style="list-style-type: none"> <li>- To recognise that we can count and compare objects using tally charts</li> <li>- To recognise that objects can be represented as pictures</li> <li>- To create a pictogram</li> <li>- To select objects by attribute and make comparisons</li> <li>- To recognise that people can be described by attributes</li> <li>- To explain that we can present information using a computer</li> </ul>	<ul style="list-style-type: none"> <li>- To say how music can make us feel</li> <li>- To identify that there are patterns in music</li> <li>- To experiment with sound using a computer</li> <li>- To use a computer to create a musical pattern</li> <li>- To create music for a purpose</li> <li>- To review and refine our computer work</li> </ul>	<ul style="list-style-type: none"> <li>- To explain that a sequence of commands has a start</li> <li>- To explain that a sequence of commands has an outcome</li> <li>- To create a program using a given design</li> <li>- To change a given design</li> <li>- To create a program using my own design</li> <li>- To decide how my project can be improved</li> </ul>
National Curriculum link	1.4 1.5 1.6	1.4 1.5	1.1 1.2 1.3 1.4	1.4 1.6	1.4	1.1 1.2 1.3

Year	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 3	Computing Systems & Networks – Connecting Computers	Creating Media – Stop-frame Animation	Programming A – Sequence of music	Data & Information - Branching databases	Creating Media – Desktop publishing	Programming B – Events and actions

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	<ul style="list-style-type: none"> <li>- To explain how digital devices function</li> <li>- To identify input and output devices</li> <li>- To recognise how digital devices can change the way we work</li> <li>- To explain how a computer network can be used to share information</li> <li>- To explore how digital devices can be connected</li> <li>- To recognise the physical components of a network</li> </ul>	<ul style="list-style-type: none"> <li>- To explain that animation is a sequence of drawings or photographs</li> <li>- To relate animated movement with a sequence of images</li> <li>- To plan an animation</li> <li>- To identify the need to work consistently and carefully</li> <li>- To review and improve animation</li> <li>- To evaluate the impact of adding other media to an animation</li> </ul>	<ul style="list-style-type: none"> <li>- To explore a new programming environment</li> <li>- To identify that commands have an outcome</li> <li>- To explain that a program has a start</li> <li>- To recognise that a sequence of commands can have an order</li> <li>- To change the appearance of my project</li> <li>- To create a project from a task description</li> </ul>	<ul style="list-style-type: none"> <li>- To create question with yes/no answers</li> <li>- To identify the object attributes needed to collect data about an object</li> <li>- To create a branching database</li> <li>- To explain why it is helpful for a database to be well structured</li> <li>- To plan the structure of a branching database</li> <li>- To independently create an identification tool</li> </ul>	<ul style="list-style-type: none"> <li>- To recognise how text and images convey information</li> <li>- To recognise that text and layout can be edited</li> <li>- To choose appropriate page settings</li> <li>- To add content to a desktop publishing publication</li> <li>- To consider how different layouts can suit different purposes</li> <li>- To consider the benefits of desktop publishing</li> </ul>	<ul style="list-style-type: none"> <li>- To explain how a sprite moves in an existing project</li> <li>- To create a program to move a sprite in four directions</li> <li>- To adapt a program to a new context</li> <li>- To develop my program by adding features</li> <li>- To identify and fix bugs in a program</li> <li>- To design and create a maze-base challenge</li> </ul>
National Curriculum link	2.2 2.4 2.6	2.6	2.1 2.2 2.3	2.6	2.5 2.6	2.1 2.2 2.3 2.6

Year	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<b>Year 4</b>	Computing Systems & Networks – The Internet	Creating Media - Audio production	Programming A - Repetition in shapes	Data & Information – Data logging	Creating Media – Photo editing	Programming B - Repetition in games
	<ul style="list-style-type: none"> <li>- To describe how networks physically connect to other networks</li> <li>- To recognise how networked devices make up the internet</li> </ul>	<ul style="list-style-type: none"> <li>- To identify that sound can be recorded</li> <li>- To explain that audio recordings can be edited</li> </ul>	<ul style="list-style-type: none"> <li>- To identify that accuracy in programming is important</li> <li>- To create a program in a text-based language</li> </ul>	<ul style="list-style-type: none"> <li>- To explain that data gathered over time can be used to answer questions</li> <li>- To use a digital device to collect data automatically</li> </ul>	<ul style="list-style-type: none"> <li>- To explain that the composition of digital images can be changed</li> <li>- To explain that colours can be</li> </ul>	<ul style="list-style-type: none"> <li>- To develop the use of count-controlled loops in a different programming environment</li> </ul>

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	<ul style="list-style-type: none"> <li>- To outline how websites can be shared via the World Wide Web</li> <li>- To describe how content can be added and accessed on the World Wide Web</li> <li>- To recognise how the content of the WWW is created by people</li> <li>- To evaluate the consequences of unreliable content</li> </ul>	<ul style="list-style-type: none"> <li>- To recognise the different parts of creating a podcast project</li> <li>- To apply audio editing skills independently</li> <li>- To combine audio to enhance my podcast project</li> <li>- To evaluate the effective use of audio</li> </ul>	<ul style="list-style-type: none"> <li>- To explain what 'repeat' means</li> <li>- To modify a count-controlled loop to produce a given outcome</li> <li>- To decompose a task into small steps</li> <li>- To create a program that uses count-controlled loops to produce a given outcome</li> </ul>	<ul style="list-style-type: none"> <li>- To explain that a data logger collects 'data points' from sensors over time</li> <li>- To recognise how a computer can help us analyse data</li> <li>- To identify the data needed to answer questions</li> <li>- To use data from sensors to answer questions</li> </ul>	<ul style="list-style-type: none"> <li>- changed in digital images</li> <li>- To explain how cloning can be used in photo editing</li> <li>- To explain that images can be combined</li> <li>- To combine images for a purpose</li> <li>- To evaluate how changes can improve an image</li> </ul>	<ul style="list-style-type: none"> <li>- To explain that in programming there are infinite loops and count controlled loops</li> <li>- To develop a design which includes two or more loops which run at the same time</li> <li>- To modify an infinite loop in a given program</li> <li>- To design a project that includes repetition</li> <li>- To create a project that includes repetition</li> </ul>
National Curriculum link	2.4 2.5 2.6 2.7	2.5 2.6 2.7	2.1 2.2 2.3 2.6	2.2 2.6	2.5 2.6 2.7	2.1 2.2 2.3 2.6

Year	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<b>Year 5</b>	<p>Computing Systems &amp; Networks – Systems and Searching</p> <ul style="list-style-type: none"> <li>- To explain that computers can be connected together to form systems</li> <li>- To recognise the role of computer systems in our lives</li> <li>- To experiment with search engines</li> <li>- To describe how search engines select results</li> </ul>	<p>Creating Media – Video editing</p> <ul style="list-style-type: none"> <li>- To explain what makes a video effective</li> <li>- To identify digital devices that can record video</li> <li>- To capture video using a range of techniques</li> <li>- To create a storyboard</li> <li>- To identify that video can be</li> </ul>	<p>Selection in physical computing</p> <ul style="list-style-type: none"> <li>- To control a simple circuit connected to a computer</li> <li>- To write a program that includes count-controlled loops</li> <li>- To explain that a loop can stop when a condition is met, eg number of times</li> <li>- To explain that a loop can be used to</li> </ul>	<p>Data &amp; Information - Flat-file databases</p> <ul style="list-style-type: none"> <li>- To use a form to record information</li> <li>- To compare paper and computer-based databases</li> <li>- To outline how grouping and then sorting data allows us to answer questions</li> </ul>	<p>Creating Media – Vector drawing</p> <ul style="list-style-type: none"> <li>- To identify that drawing tools can be used to produce different outcomes</li> <li>- To create a vector drawing by combining shapes</li> <li>- To use tools to achieve a desired effect</li> <li>- To recognise that vector drawings consist of layers</li> </ul>	<p>Programming B – Selection in quizzes</p> <ul style="list-style-type: none"> <li>- To explain how selection is used in computer programs</li> <li>- To relate that a conditional statement connects a condition to an outcome</li> <li>- To explain how selection directs the flow of a program</li> </ul>

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	<ul style="list-style-type: none"> <li>- To explain how search results are ranked</li> <li>- To recognise why the order of results is important, and to whom</li> </ul>	<ul style="list-style-type: none"> <li>improved through reshooting and editing</li> <li>- To consider the impact of the choices made when making and sharing a video</li> </ul>	<ul style="list-style-type: none"> <li>repeatedly check whether a condition has been met</li> <li>- To design a physical project that includes selection</li> <li>- To create a program that controls a physical computing project</li> </ul>	<ul style="list-style-type: none"> <li>- To explain that tools can be used to select specific data</li> <li>- To explain that computer programs can be used to compare data visually</li> <li>- To apply my knowledge of a database to ask and answer real-world questions</li> </ul>	<ul style="list-style-type: none"> <li>- To group objects to make them easier to work with</li> <li>- To evaluate my vector drawing</li> </ul>	<ul style="list-style-type: none"> <li>- To design a program which uses selection</li> <li>- To create a program which uses selection</li> <li>- To evaluate my program</li> </ul>
National Curriculum link	2.1 2.2 2.4 2.6 2.7	2.5 2.6 2.7	2.1 2.2 2.3 2.6	2.5 2.6	2.6	2.1 2.2 2.3 2.6

Year	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<b>Year 6</b>	<p style="text-align: center;">Computing Systems &amp; Networks – Communication</p> <ul style="list-style-type: none"> <li>- To explain the importance of internet addresses</li> <li>- To recognise how data is transferred across the internet</li> <li>- To explain how sharing information online can help people to work together</li> <li>- To evaluate different ways of working together online</li> </ul>	<p style="text-align: center;">Creating Media – Web page creation</p> <ul style="list-style-type: none"> <li>- To review an existing website and consider its structure</li> <li>- To plan the features of a web page</li> <li>- To consider the ownership and use of images (copyright)</li> <li>- To recognise the need to preview pages</li> <li>- To outline the need for a navigation path</li> </ul>	<p style="text-align: center;">Programming A – Variables in games</p> <ul style="list-style-type: none"> <li>- To define a 'variable' as something that is changeable</li> <li>- To explain why a variable is used in a program</li> <li>- To choose how to improve a game by using variables</li> <li>- To design a project that builds on a given example</li> <li>- To use my design to create a project</li> </ul>	<p style="text-align: center;">Data &amp; Information - Introduction to spreadsheets</p> <ul style="list-style-type: none"> <li>- To create a data set in a spreadsheet</li> <li>- To build a data set in a spreadsheet</li> <li>- To explain that formula can be used to produce calculated data</li> <li>- To apply formulas to data</li> <li>- To create a spreadsheet to plan an event</li> </ul>	<p style="text-align: center;">Creating Media – 3D Modelling</p> <ul style="list-style-type: none"> <li>- To recognise that you can work in three dimensions on a computer</li> <li>- To identify that digital 3D objects can be modified</li> <li>- To recognise that objects can be combined in a 3D model</li> <li>- To create a 3D model for a given purpose</li> </ul>	<p style="text-align: center;">Programming B – Sensing</p> <ul style="list-style-type: none"> <li>- To create a program to run on a controllable device</li> <li>- To explain that selection can control the flow of a program</li> <li>- To update a variable with a user input</li> <li>- To use an conditional statement to compare a variable to a value</li> </ul>

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	- To recognise how we communicate using technology	- To recognise the implications of linking to content owned by other people	- To evaluate my project	- To choose suitable ways to present data	- To plan my own 3D model - To create my own digital 3D model	- 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
National Curriculum link	2.4 2.5 2.6 2.7	2.5 2.6 2.7	2.1 2.2 2.3 2.6	2.2 2.6	2.5 2.6 2.7	2.1 2.2 2.3 2.6