

Autumn	Unit 1 - Coding	Unit 2 – Online Safety	Unit 3 – Spreadsheets
Number of Lessons	5	3	4
Outcome	Children will have used code to make objects move on a screen. Pupils will retell a story using code from a storyboard.	Children will learn about their digital footprint and how any content looked at or shared can be traced.	Children will learn how to make effective use of spreadsheets to calculate and represent data.
Curriculum Content: Substantive Knowledge	<p>Lesson Question What is an algorithm?</p> <p>Substantive Knowledge</p> <ul style="list-style-type: none"> - An algorithm is a precise step by step set of instructions used to solve a problem or achieve an objective. -When we add code to a computer program it tells the computer what to do <p>Procedural Knowledge</p> <ul style="list-style-type: none"> - Click the design button to enter design mode. <p>Outcome: Children will be able to explain what an algorithm is.</p>	<p>Lesson Question How do you safely share work?</p> <p>Substantive Knowledge</p> <ul style="list-style-type: none"> - Sharing a file or document can be done safely or unsafely <p>Procedural Knowledge</p> <ul style="list-style-type: none"> - Click on the arrow on the side of the search box to add search criteria <p>Outcome: Children will know how to search work electronically.</p>	<p>Lesson Question How can I use a picture to represent a numerical value (number)?</p> <p>Substantive Knowledge</p> <ul style="list-style-type: none"> - A picture can represent the value of a given number - A total can be reached using a spreadsheet program tool <p>Procedural Knowledge</p> <ul style="list-style-type: none"> - Click on a cell, then select the image toolbox from the right-hand side and 'Set image'. - To make picture draggable use the drag tool in the Controls toolbox. <p>Outcome: Children will be able to edit spreadsheets.</p>
	<p>Lesson Question How do I repeat a set of timed instructions?</p> <p>Substantive Knowledge</p> <ul style="list-style-type: none"> - A repeat command runs a set of instructions again - A timed command runs a set of instructions for a specific amount of time or at a given time in regular intervals <p>Procedural Knowledge</p> <ul style="list-style-type: none"> - Click on the "repeat command with X" to concentrate on a single character. <p>Outcome: Children will know how to use the repeat and timer commands</p>	<p>Lesson Question How do I keep safe when sending emails or messages to someone?</p> <p>Substantive Knowledge</p> <ul style="list-style-type: none"> - You should only ever email or message someone you know - You can click on the 'report' or 'block' button to share a message which was upsetting or made you worry- blocking will stop that person from sending another <p>Procedural Knowledge</p> <ul style="list-style-type: none"> - Click the reply button to reply to emails. - Click the forward button to forward emails to other people. <p>Outcome: Children will be able to explain what emails are</p>	<p>Lesson Question How do I copy, cut and paste numbers into a spreadsheet?</p> <p>Substantive Knowledge</p> <ul style="list-style-type: none"> - A number can be moved by cutting it and pasted it into another cell - A number can be copied by copying and pasting it into another cell <p>Procedural Knowledge</p> <ul style="list-style-type: none"> - Click on the Copy and Total toolbox to total amounts. <p>Outcome: Children will be able to copy and paste information into spreadsheets.</p>
	<p>Lesson Question What should I do if a set of instructions don't work?</p> <p>Substantive Knowledge</p> <ul style="list-style-type: none"> - A bug is a problem that stops a computer program from working - If a set of instructions don't work, we have to debug them <p>Outcome: Children will be able to explain what debugging is.</p>	<p>Lesson Question What is my digital footprint?</p> <p>Substantive Knowledge</p> <ul style="list-style-type: none"> - Everything you access, and type can be seen- even if it has been deleted <p>Outcome: Children will be able to explain what a digital footprint is.</p>	<p>Lesson Question How do I add amounts using a spreadsheet?</p> <p>Substantive Knowledge</p> <ul style="list-style-type: none"> - A formulae can be added which will add together different amounts <p>Procedural Knowledge</p> <ul style="list-style-type: none"> - Click on the clipart button to select images. - Drag the mouse to select more than one cell. <p>Outcome: Children will use formulae to add monetary amounts.</p>

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	<p>Lesson Question How do I make an object move in a computer program?</p> <p>Substantive Knowledge - A code can be used to instruct an object to move in a specific way</p> <p>Outcome: Children will create a simple computer program using different objects.</p>		<p>Lesson Question How do I create a table and block graph?</p> <p>Substantive Knowledge - A table shows data which I have collected - Images can be added to a spreadsheet to create a block graph</p> <p>Procedural Knowledge - Click the + or – buttons to resize the spreadsheet.</p> <p>Outcome: Children will use data to create graphs manually.</p>
	<p>Lesson Question How can I share a story using a computer code?</p> <p>Substantive Knowledge - Code can be used to share a visual animated story</p> <p>Procedural Knowledge - Once work is saved, click the share button to share work.</p> <p>Outcome: Children will plan and use algorithms to tell a story.</p>		
Vocabulary	Algorithm, debug, code, program, computer, instructions, follow, achieve, objective, timed, intervals, repeat, instruct, right, left, go, stop	Safe, online, digital footprint, shared, private, report, block, email, message, communicate, shared, safely, traced	Rows, columns, cells, colour, highlight, select, calculate, sum, enter, picture, tool
Resources	2Code	Writing Templates Display boards 2Respond (2Email)	2Calculate
Curriculum Progression (including coverage of National Curriculum)	A unit of work where children will learn how to code an algorithm to achieve a specific objective and debug that algorithm if it doesn't work.	A unit of work to explore the importance of using technology safely and respectfully. Pupils will understand how to get help and support about content that concerns them.	A unit of work to enable pupil to use software (spreadsheets) to achieve a specific objective by creating and debugging a simple program.
Coherence (links to other subjects & prior learning)	<p>Prior Learning - Y1 Unit7- coding, Y1 Unit 5- Maze explorers</p> <p>Subject Links – English, PE (Movement)</p>	<p>Prior Learning – Y1 Unit 1- Online safety and exploring purple mash</p> <p>Subject Links – PHSE</p>	<p>Prior Learning – Y1 Unit 8- Spreadsheets</p> <p>Subject Links – Maths</p>

Spring	Unit 4 – Questioning	Unit 5 – Effective Searching	Unit 6 – Creating Pictures
Number of Lessons	5	3	5
Outcome	Children will learn how to represent questions and answers digitally. They will have a better understanding of how to find answers to technology by using digital structures.	Children will learn how to conduct a search using different search engines. Children will learn how to navigate a search engine to bring up more successful results for what they are searching for.	Children will learn how to create their own digital picture using templates that recreate a specific artistic style or work in a similar way to a given artist.
Curriculum Content: Substantive Knowledge	<p>Lesson Question How can I digitally represent an answer to a question?</p> <p>Substantive Knowledge - A pictogram is a good visual for sharing an answer to a question</p> <p>Procedural Knowledge -</p> <p>Outcome: Children will understand how to create and interpret pictograms</p>	<p>Lesson Question What is a search engine?</p> <p>Substantive Knowledge - A search engine helps us to find an internet page which contains information that we are looking for - There are lots of different types of search engine that we can use</p> <p>Procedural Knowledge -</p> <p>Outcome:</p>	<p>Lesson Question How do I create a digital picture in the style of impressionism?</p> <p>Substantive Knowledge - A template can help you to create a picture in an artistic style (impressionism) - A mouse can be used to make the shapes/lines found in a picture</p> <p>Procedural Knowledge -</p> <p>Outcome:</p>
	<p>Lesson Question How do I present a yes/no closed question to someone using technology?</p> <p>Substantive Knowledge - Some questions can be answered through a yes or no response - An avatar can be used to represent an answer</p> <p>Procedural Knowledge -</p> <p>Outcome:</p>	<p>Lesson Question How do I use the different features of a search engine?</p> <p>Substantive Knowledge - A result is a website that matches a search - Search engines can display images, videos only to narrow down the results shown</p> <p>Procedural Knowledge -</p> <p>Outcome:</p>	<p>Lesson Question How do I reposition a digital picture in the style of pointillism?</p> <p>Substantive Knowledge - A group of lines or dots can be resized or repositioned to create a pointillist style</p> <p>Procedural Knowledge -</p> <p>Outcome:</p>
	<p>Lesson Question How do I present a binary tree which provides questions and answers?</p> <p>Substantive Knowledge - A binary tree is a data structure - Binary trees using questions with yes or no answers</p> <p>Procedural Knowledge -</p> <p>Outcome:</p>	<p>Lesson Question What makes a search more effective?</p> <p>Substantive Knowledge - A key word can produce better search results - ‘Safesearches’ contain more child friendly results</p> <p>Procedural Knowledge -</p> <p>Outcome:</p>	<p>Lesson Question How do I use a template to create a digital picture in the style of Piet Mondrian?</p> <p>Substantive Knowledge - A template will restrict the chance of making a mistake in a digital picture</p> <p>Procedural Knowledge -</p> <p>Outcome:</p>
	<p>Lesson Question How can I find an answer using a binary tree?</p> <p>Substantive Knowledge - Binary trees help to reach a specific answer based on more than one set of criteria</p> <p>Procedural Knowledge -</p> <p>Outcome:</p>		<p>Lesson Question How do I add a repeated pattern to a digital picture?</p> <p>Substantive Knowledge - A repeated pattern can be easily replicated digitally</p> <p>Procedural Knowledge -</p> <p>Outcome:</p>

	<p>Lesson Question How can I search for an answer in a database?</p> <p>Substantive Knowledge - A database contains data for a selection of information - A database search can help you to locate relevant information to answer a question</p> <p>Procedural Knowledge -</p> <p>Outcome:</p>		
Vocabulary	Search, database, answer, key, binary tree, information, data, structure, yes, no, closed question, visual	Search, search engine, website, internet, key word, results, safe search, images, videos	Picture, paint, colour, line, orientation, template, vertical, horizontal, parallel, diagonal, rotate, rotted, symmetry, repeated, resized, reposition, impressionism, pointillism, digital
Resources	2Question 2Investigate 2Calculate	Browser Google Safesearch 2Quiz Writing Templates	2Paint a picture Writing Templates
Curriculum Progression (including coverage of National Curriculum)	A unit of work where pupils learn ways to organise and retrieve digital content to ask and answer questions	A unit of work to support pupils with using the internet more effectively. Pupils will have a greater awareness of how to use a search engine more safely	A unit of work where children will recognise the use of technology beyond school and learn how to use technology to recreate a digital picture
Coherence (links to other subjects & prior learning)	<p>Prior Learning -</p> <p>Subject Links – PHSE, Maths (Data handling)</p>	<p>Prior Learning –</p> <p>Subject Links – PHSE, cross-curricular links (search topics)</p>	<p>Prior Learning – Y1 unit 3- Pictograms, Y1 Unit 9- Technology outside school</p> <p>Subject Links – Art and Design</p>

Summer	Unit 7 – Making Music	Unit 8 – Presenting Ideas
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Number of Lessons	3	4
Outcome	Children will learn how to add, upload sounds in order to create a piece of music. Children will look at changing beats per minutes, bars and adding sound effects.	Children will learn how to present information digitally.
Curriculum Content: Substantive Knowledge	<p style="text-align: center;">Lesson Question</p> <p>How do I make a digital sound?</p> <p style="text-align: center;">Substantive Knowledge</p> <ul style="list-style-type: none"> - Digital sounds can be altered by changing the amount of bpm (beats per minute) - Some sounds can be repeated in a sequence to create a piece of work <p style="text-align: center;">Procedural Knowledge</p> <p>-</p> <p>Outcome:</p>	<p style="text-align: center;">Lesson Question</p> <p>How do I present a story as a concept map?</p> <p style="text-align: center;">Substantive Knowledge</p> <ul style="list-style-type: none"> - A concept map displays ideas in a visual way <p style="text-align: center;">Procedural Knowledge</p> <p>-</p> <p>Outcome:</p>
	<p style="text-align: center;">Lesson Question</p> <p>How can I digitally alter a piece of music?</p> <p style="text-align: center;">Substantive Knowledge</p> <ul style="list-style-type: none"> - A SFX (sound effect) can be added to a piece of music to change it - Music can be made longer by increasing the number of bars <p style="text-align: center;">Procedural Knowledge</p> <p>-</p> <p>Outcome:</p>	<p style="text-align: center;">Lesson Question</p> <p>How do I present ideas in a quiz?</p> <p style="text-align: center;">Substantive Knowledge</p> <ul style="list-style-type: none"> - A quiz can present questions in different ways (multiple choice, drop down, tick box, pictorial, linear scale, sequencing, sorting) <p style="text-align: center;">Procedural Knowledge</p> <p>-</p> <p>Outcome:</p>
	<p style="text-align: center;">Lesson Question</p> <p>How can I digitally upload a sound I can make?</p> <p style="text-align: center;">Substantive Knowledge</p> <ul style="list-style-type: none"> - A sound can be captured and made digitally using a microphone <p style="text-align: center;">Procedural Knowledge</p> <p>-</p> <p>Outcome:</p>	<p style="text-align: center;">Lesson Question</p> <p>How do I present facts about a subject or topic?</p> <p style="text-align: center;">Substantive Knowledge</p> <ul style="list-style-type: none"> - A fact file provides a list of facts shared in short sentences using bullet points <p style="text-align: center;">Procedural Knowledge</p> <p>-</p> <p>Outcome:</p>
		<p style="text-align: center;">Lesson Question</p> <p>How do I present my work using digital content?</p> <p style="text-align: center;">Substantive Knowledge</p> <ul style="list-style-type: none"> - A powerpoint helps to create a screen with images or text that I wish to share - A script helps me to prepare for a presentation <p style="text-align: center;">Procedural Knowledge</p> <p>-</p> <p>Outcome:</p>
Vocabulary	Sound, digital, beats per minute, sequence, sound effect, bars, upload, microphone, captured, record, play, stop, add, listen, music, musical instrument	Present, ideas, quiz, story, concept map, mind map, questions, multiple choice, drop down, tick box, pictorial, linear scale, sequencing, sorting, digital content, facts, information, sort, bullet points, subject, topic.
Resources	2Sequence Garageband- if available	2Connect (Mind Map) 2Create a Story(ebook) 2Quiz Writing Templates Powerpoint/Google Slides

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Curriculum Progression (including coverage of National Curriculum)	A unit of work supporting pupils to understand ways that technology can be used beyond school. Pupils will understand how to manipulate and create digital content.	A unit of work where children learn different ways to present information to others using digital content.
Coherence (links to other subjects & prior learning)	Prior Learning – Y1 Unit 9- Technology outside school Subject Links – Music	Prior Learning – Y1 Unit 2- Grouping and Sharing, Y2 Unit 4- Questioning Subject Links – Maths (data handline), English (stories, digital literacy)