

Autumn	Unit 1 - Coding	Unit 2 – Online Safety	Unit 3 – Spreadsheets
Number of Lessons	6	3	3
Outcome	Children will create algorithms, write programs and have learnt how to debug programs.	Children will be able to use safe passwords, know the meaning of age restrictions and stay safe online.	Children will create charts and graphs and develop their spreadsheet skills by incorporating more tools.
Curriculum Content: e Knowledge	<p style="text-align: center;">Lesson Question</p> <p>How do I create a design that represents a sequential algorithm?</p> <p style="text-align: center;">Substantive Knowledge</p> <ul style="list-style-type: none"> - Action are types of commands - Output is information that comes out of a computer -Input is information that goes into a computer. <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 communicate using a blog?</p> <p style="text-align: center;">Substantive Knowledge</p> <ul style="list-style-type: none"> - You can share ideas and pictures in a blog -People may need permission or a password to see and add to the blog. <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 use a spreadsheet to create graphs and charts?</p> <p style="text-align: center;">Substantive Knowledge</p> <ul style="list-style-type: none"> - A spreadsheet is a computer program that represents information in a grid of rows and columns. - Any cell in the grid may contain either data or a formula that describes the value to be inserted based on the values in other cells. <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 create a program simulates a physical system?</p> <p style="text-align: center;">Substantive Knowledge</p> <ul style="list-style-type: none"> -The angle and the speed of an object can be changed, allowing them to move in different directions and speeds. <p style="text-align: center;">Procedural Knowledge</p> <p>-</p> <p>Outcome:</p>	<p style="text-align: center;">Lesson Question</p> <p>Is everything on the internet true?</p> <p style="text-align: center;">Substantive Knowledge</p> <ul style="list-style-type: none"> - A spoof website is a website that uses dishonest designs to trick users into thinking that it represents the truth. - A search engine should be used to look for corroborating information from a known source. <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 use tools to compare numbers and complete calculations?</p> <p style="text-align: center;">Substantive Knowledge</p> <ul style="list-style-type: none"> - The < > = tools can be used to compare numbers in a spreadsheet <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 use an “if” statement in my program?</p> <p style="text-align: center;">Substantive Knowledge</p> <ul style="list-style-type: none"> - “If” is a conditional command. This tests a statement. If the condition is true, then the commands inside the block will be run. - Selection is a conditional/decision command. When selection is used, a program will choose a different outcome depending on a condition, for example; “repeat”; “repeat until”; “if/else” - The X and Y values relate to where an object is on the board. <p style="text-align: center;">Procedural Knowledge</p> <p>-</p> <p>Outcome:</p>	<p style="text-align: center;">Lesson Question</p> <p>Why do PEGI restrictions exist?</p> <p style="text-align: center;">Substantive Knowledge</p> <ul style="list-style-type: none"> - A PEGI rating shows what age a game is suitable for. - Watching or playing inappropriate content or games can have physical and emotional effects on an individual. -If a child experiences something that upsets them, they should talk to a teacher or a trusted adult. <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 describe a cell location?</p> <p style="text-align: center;">Substantive Knowledge</p> <ul style="list-style-type: none"> - Rows are represented by numbers - Columns are represented by letters - A cell’s location can be described by collating this information (number and letter). <p style="text-align: center;">Procedural Knowledge</p> <p>-</p> <p>Outcome:</p>

	<p>Lesson Question How can I create variables in a program?</p> <p>Substantive Knowledge - Variables are boxes in which the computer can store information. To find the information in the box, each box should be labelled. -The information inside the box is called the Variable Value. The user, the program or another variable can change this Variable Value.</p> <p>Procedural Knowledge -</p> <p>Outcome:</p>		
	<p>Lesson Question How do I make a character repeat an action?</p> <p>Substantive Knowledge - A sequence is when a computer program runs commands in order. - Repeat is when a computer program repeats a sequence of commands -The repeat command also repeats a block of code.</p> <p>Procedural Knowledge -</p> <p>Outcome:</p>		
	<p>Lesson Question How do I debug a simple program?</p> <p>Substantive Knowledge - Debugging is looking for any problems in the code, fixing and testing them.</p> <p>Procedural Knowledge -</p> <p>Outcome:</p>		
Vocabulary	Action, algorithm, bug, code block, code design, command, debug, design mode, event, if, input, object, properties, repeat, simulation, selection, timer, variable	Password, Internet, Blog, Concept map, username, website, webpage, spoof website, PEGI rating	Advance mode, copy and paste, columns, cells, delete key, equals, move cell, rows, spin, spreadsheet.
Resources	2Code Lightbot	2Connect (Mind Map) 2Blog (Blogging) Writing Templates Display boards	2Calculate Microsoft Excel/ Google sheets
Curriculum Progression (including coverage of National Curriculum)	A unit of work which enables children to design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. It will also enable children to use sequence, selection and repetition in programs; work with variables and various forms of input	A unit of work which enables pupils to use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	A unit of work in which pupils use technology purposefully to create, organise, store, manipulate and retrieve digital content

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	and output. Children will be able to use logical reasoning to explain how some simple algorithms work		
Coherence (links to other subjects & prior learning)	<p>Prior Learning - Y1 Unit 4- Lego Builders, Y1 Unit 5- Maze Explorers, Y2 Unit 1- Coding</p> <p>Subject Links – English, Maths</p>	<p>Prior Learning – Y1 Unit 1- Online Safety and using Purple Mash, Y2 Unit 2- Online Safety</p> <p>Subject Links – English, PHSE</p>	<p>Prior Learning – Y1 Unit 8- Spreadsheets, Y2 Unit 3- Spreadsheets</p> <p>Subject Links – Maths</p>

Spring	Unit 4 – Touch Typing	Unit 5 – Email
Number of Lessons	4	6
Outcome	Children will learn how to type with both hands, utilising the bottom, top and home row keys and making use of shortcut keys.	Children will create and read emails, as well as adding attachments.
Curriculum Content: Knowledge	<p style="text-align: center;">Lesson Question</p> <p>What are the different rows of keys?</p> <p style="text-align: center;">Substantive Knowledge</p> <ul style="list-style-type: none"> - Posture relates to the correct way to sit at the computer. - Top row keys are the Q-P keys, home row keys are the A-L keys, bottom row keys are the Z-M keys <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 communicate with others online?</p> <p style="text-align: center;">Substantive Knowledge</p> <ul style="list-style-type: none"> - Communication is the sharing or exchanging of information. - Communication has changed over time. - Each method of communication has advantages and disadvantages. <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 increase my typing speed?</p> <p style="text-align: center;">Substantive Knowledge</p> <ul style="list-style-type: none"> - Speed can be increased by using both hands to type <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 send and receive emails?</p> <p style="text-align: center;">Substantive Knowledge</p> <ul style="list-style-type: none"> - Emails are messages sent electronically from one device to another -Text size and fonts can be altered in an email. <p style="text-align: center;">Procedural Knowledge</p> <p>-</p> <p>Outcome:</p>

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	<p style="text-align: center;">Lesson Question</p> <p>What keys can I type with my left hand?</p> <p style="text-align: center;">Substantive Knowledge</p> <ul style="list-style-type: none"> - Each finger has a set of keys that it is easier to type with. <p style="text-align: center;">Procedural Knowledge</p> <ul style="list-style-type: none"> - <p>Outcome:</p>	<p style="text-align: center;">Lesson Question</p> <p>How can I stay safe while sending emails?</p> <p style="text-align: center;">Substantive Knowledge</p> <ul style="list-style-type: none"> - Attachments and links from unknown sources should not be opened. - Personal information and pictures or information about others should not be shared in emails <p style="text-align: center;">Procedural Knowledge</p> <ul style="list-style-type: none"> - <p>Outcome:</p>
	<p style="text-align: center;">Lesson Question</p> <p>What keys can I type with my right hand?</p> <p style="text-align: center;">Substantive Knowledge</p> <ul style="list-style-type: none"> - Each finger has a set of keys that it is easier to type with. <p style="text-align: center;">Procedural Knowledge</p> <ul style="list-style-type: none"> - <p>Outcome:</p>	<p style="text-align: center;">Lesson Question</p> <p>What do I need to remember to keep safe when emailing?</p> <p style="text-align: center;">Substantive Knowledge</p> <ul style="list-style-type: none"> - You shouldn't communicate with strangers - It's dangerous to arrange to meet someone offline <p style="text-align: center;">Procedural Knowledge</p> <ul style="list-style-type: none"> - <p>Outcome:</p>
		<p style="text-align: center;">Lesson Question</p> <p>How do I add an attachment to an email?</p> <p style="text-align: center;">Substantive Knowledge</p> <ul style="list-style-type: none"> - An attachment is a file, which could be a piece of work or a picture, that is sent with the email. - 'CC' copies other recipients into an email. <p style="text-align: center;">Procedural Knowledge</p> <ul style="list-style-type: none"> - <p>Outcome:</p>
		<p style="text-align: center;">Lesson Question</p> <p>How do I respond to a series of email communications?</p> <p style="text-align: center;">Substantive Knowledge</p> <ul style="list-style-type: none"> - The reply button allows you to reply to an email. - Emails should start by addressing the person you are writing to. <p style="text-align: center;">Procedural Knowledge</p> <ul style="list-style-type: none"> - <p>Outcome:</p>
Vocabulary	Posture, top row keys, home row keys, bottom row keys, space bar.	Communication, email, compose, send, report, attachment, address book, save to draft, password, CC, formatting
Resources	2Type Microsoft Word, Google Docs	2Email Gmail/ Microsoft Outlook
Curriculum Progression (including coverage of National Curriculum)	A unit of work where children will learn how to use a keyboard more effectively.	A unit of work teaching children how to communicate using email. Pupils will send, share, store and retrieve information. Pupils will have a greater awareness of dangers posed by using emails to communicate with strangers online.

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Coherence (links to other subjects & prior learning)	Prior Learning - Subject Links – English	Prior Learning – Y2 Unit 2-Online safety Subject Links – English, PHSE
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Summer	Unit 6 – Branching Databases	Unit 7 – Simulations	Unit 8 – Graphing
Number of Lessons	4	3	2
Outcome	Children will create a branching database.	Children will take part in and evaluate computer simulations.	Children will add information to a graph and subsequently answer questions.
Curriculum Content: Knowledge	<p>Lesson Question How are yes/no questions answered?</p> <p>Substantive Knowledge - A database is a collection of data organised in such a way that it can be searched, and information found easily. - Database usually refers to data stored on computers.</p> <p>Procedural Knowledge -</p> <p>Outcome:</p>	<p>Lesson Question What is a computer simulation?</p> <p>Substantive Knowledge - A computer simulation is a program that models a real-life situation</p> <p>Procedural Knowledge -</p> <p>Outcome:</p>	<p>Lesson Question How do I create a graph using data?</p> <p>Substantive Knowledge - A graph is a diagram showing the value of objects. - A field is part of a record.</p> <p>Procedural Knowledge -</p> <p>Outcome:</p>
	<p>Lesson Question What should be included in a branching database?</p> <p>Substantive Knowledge - A branching diagram has questions which contain a yes or no answer</p> <p>Procedural Knowledge -</p> <p>Outcome:</p>	<p>Lesson Question What is included in a simulation?</p> <p>Substantive Knowledge - Some simulations consist of a storyline where the viewer needs to make choices. - Simulations are based on problem solving and conclude with a solution.</p> <p>Procedural Knowledge -</p> <p>Outcome:</p>	<p>Lesson Question How do I present the results of an investigation?</p> <p>Substantive Knowledge - Technology allows us to share information in a graph which is visually more accurate</p> <p>Procedural Knowledge -</p> <p>Outcome:</p>
	<p>Lesson Question How do I create a branching database? (2 lessons)</p> <p>Substantive Knowledge - Branching databases can also be called binary trees.</p> <p>Procedural Knowledge -</p> <p>Outcome:</p>	<p>Lesson Question How do I successfully complete a computer simulation?</p> <p>Substantive Knowledge - Decisions made early in a simulation will affect the outcome of the storyline.</p> <p>Procedural Knowledge -</p> <p>Outcome:</p>	
Vocabulary	Branching database, data, database, question	Simulation, situations	Graph, field, data, bar chart, block graph, line graph
Resources	2Question	2Simulate, Writing Templates	2Graph Writing Templates 2Blog (Blogging) Microsoft Excel/ Google Sheets

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Curriculum Progression (including coverage of National Curriculum)	<p>A unit of work where children become more familiar with how to use software to accomplish a specific goal.</p>	<p>A unit of work where children learn about the use of simulation technology and the benefits this can have to solving complex or dangerous problems. Children will understand what acceptable and unacceptable behaviour would be when using simulations.</p>	<p>A unit of work where children will use software to presenting data and information digitally.</p>
Coherence (links to other subjects & prior learning)	<p>Prior Learning – Y2 Unit 4- Questioning</p> <p>Subject Links – Maths (Data Handling)</p>	<p>Prior Learning -</p> <p>Subject Links – PHSE</p>	<p>Prior Learning – Y2 Unit 3- Spreadsheets, Y2 Unit 4- Questioning, Y3 Unit 3- Spreadsheets, Y3 Unit 6- Branching Databases</p> <p>Subject Links – Maths (Data Handling)</p>