William Penn
Curriculum Map – Computing

	Autumn	Spring	Summer
Cycle A			
Year R	**Fantastic Fairytales**	**Amazing Animals**	**Helpful Heroes**
Year 1/2	**Community Heroes**	**Shiver and Sizzle**	**Oh I do like to be beside….**
Year 3/4	**Raging Rivers and Marvellous Mountains**	**The Roman Empire**	**Groovy Greeks**
Year 5/6	**We'll Meet Again (WWII links with Coolham airfield and Battle of Britain)**	**Rulers of the Rainforest (Ancient Mayan Civilization and rainforests)**	**Vikings (Life and Legend)**
Cycle B			
Year R	**Fantastic Fairytales**	**Amazing Animals**	**Helpful Heroes**
Year 1/2	**Who Lives Here?**	**Spring Has Sprung**	**Back in Time for…**
Year 3/4	**Ancient Ancestors (Stone Age to Iron Age)**	**We're Sailing down the Nile (Ancient Egypt)**	**Our World**
Year 5/6	**Wonders of the Universe**	**Super Settlers (Anglo Saxons and Scots)**	**Friends And Heroes (Quakerism and Democracy) A local History Study**

Subject Coverage Overview

Skills/Themes	Computer Science	Information Technology	Digital Literacy

	Autumn	Spring	Summer
Cycle A			
Year R	**Fantastic Fairytales** Algorithms	**Amazing Animals** Creating Programs Using Technology	**Helpful Heroes** Use of IT beyond school Online Safety
Year 1/2	**Who Lives Here?** Online Safety Effective Searching Lego Builders	**Spring Has Sprung** Online Safety Animated Story Books Making Music	**Back in Time for…** Spreadsheets Coding
Year 3/4	**Ancient Ancestors** (Stone Age to Iron Age) Coding Online Safety Spreadsheets	**We're Sailing down the Nile** (Ancient Egypt) Writing for different audiences Logo Animation	**Our World** Branching Databases Simulations Graphing
Year 5/6	**Wonders of the Universe** Coding Online Safety Spreadsheets	**Super Settlers** (Anglo Saxons and Scots) Blogging Text Adventures Networks	**Friends And Heroes** (Quakerism and Democracy) A local History Study Concept Maps Word Processing (Google Docs) Using External Devices – Purple Chip
Cycle B			
Year R	**Fantastic Fairytales** Algorithms	**Amazing Animals** Creating Programs Using Technology	**Helpful Heroes** Use of IT beyond school Online Safety
Year 1/2	**Community Heroes** Online Safety Maze Explorers Questioning	**Shiver and Sizzle** Technology outside school Grouping & Sorting Creating Pictures	**Oh I do like to be beside….** Spreadsheets Pictograms Presenting Ideas
Year 3/4	**Raging Rivers and Marvellous Mountains** Coding Online Safety Spreadsheets	**The Roman Empire** Touch Typing Email (email safety)	**Groovy Greeks** Effective Search Hardware Investigators
Year 5/6	**We'll Meet Again** (WWII links with Coolham airfield and Battle of Britain) Coding Online Safety Spreadsheets	**Rulers of the Rainforest** (Ancient Mayan Civilization and rainforests) Databases Game Creator 3D Modelling	**Vikings** (Life and Legend) Quizzing Understanding Binary Spreadsheets (Google Sheets)

EYFS Coverage:

EYFS Expectations Expecations – Understanding the World – Technology - Computing overview					
Playing & Exploring - Engagement		**Active Learning - Motivation**		**Creating & Thinking Critically - Thinking**	
• Finding out & exploring • Playing with what they know • Being willing to 'have a go'		• Being involved & concentrating • Keep on trying • Enjoying achieving what they set out to do		• Having their own ideas (creative thinking) • Making links (building theories) • Working with ideas (critical thinking	
ELG **None**					
Focus	Algorithms	Creating programs	Using technology	Use of IT beyond school	Safe use
Reception	• Develops digital literacy skills by being able to access, understand and interact with a range of technologies	• Completes a simple program on electronic devices	• Can create content such as a video recording, stories, and/or draw a picture on screen	• Begin to list different IT in their home	• Begin to give reasons why we need to stay safe online • Can use the internet with adult supervision to find and retrieve information of interest to them

Throughout the year children will be taught how do operate an iPad and stretched to how to use a mouse and a keyboard to operate a laptop, introducing them to a range of technology through a combination of teacher and child initated learning. This will be done through the use of Mini Mash, word processing and online eductinal games.

Key Stage 1 Coverage:

Year 1/2 Cycle A	Community Heroes	Shiver and Sizzle	Oh I do like to be beside….
	Unit 1.1 Online Safety & Exploring Purple Mash **Unit 2.5 Effective Searching** **Unit 1.4: Lego Builders**	**Unit 1.9 Technology outside school** **Unit 1.2 Grouping & Sorting** **Unit 2.6 Creating Pictures**	**Unit 1.8 Spreadsheets** **Unit 1.7 Coding** **Unit 2.1 Coding**
	By the end of these units: **Pupils will know:** ▪ How can I log in safely and why is this important? ▪ What resources can I find on Purple Mash? ▪ How can I search on the internet using a search engine? ▪ How would I help someone else to use a search engine? ▪ What happens when you follow simple instructions in a compter program? ▪ What is 'debugging' a computer program and why do we do this? **Children will be able to:** ▪ Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions. ▪ 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. ▪ Create and debug simple programs.	**By the end of these units:** **Pupils will know:** • What examples do you know of where technology is used in the local community? • What did you record as examples of technology outside of school? • How do you sort items using a range of criteria? • What is an algorithm, when you need to describe a logical process? • How do you think logically and the use of technology? • How do you use 2Paint A Picture? • Who is Seurat? • How did you recreate pointillist art using the Pointillism template? • Who is Piet Mondrian and how did you recreate his work using the Lines template? **Children will be able to:** ▪ Use technology purposefully to create, organise, store, manipulate and retrieve digital contentCreate and debug simple programs. ▪ Recognise common uses of information technology beyond school. ▪ Use technology safely and respectfully, keeping - Personal information private;	**By the end of these units:** **Pupils will know:** • What does a spreadsheet looks like? • How do you navigate around a spread sheet and enter data? • What new vocabulary do you know relating to spreadsheets? • How do you use clipart to add images to a spreadsheet? • How do you use the 'move cell' and 'lock' tools? • How do you use the 'speak' and 'count' tools in 2Calculate to count items? **Children will be able to:** ▪ Use logical reasoning to predict the behaviour of simple programs ▪ Create and debug simple programs ▪ Use technology purposefully to create, organise, store, manipulate and retrieve digital contentCreate and debug simple programs. ▪ Recognise common uses of information technology beyond school. ▪ 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

	Essential vocabulary: **Vocabulary for Unit 1.1**: alert, avatar, button, file name, filter, home screen, icon, login, log out, menu, notification, password, private, saving, search, typing. **Vocabulary for Unit 2.5:** browser, device, digital footprint, domain, internet, network, search engine, URL, web address, web page, web site, world wide web. **Vocabulary for Unit 1.4**: algorithm, code, computer, debugging, instructins, machine, program, recipe, sequence.	identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies. ***Essential vocab:*** **Vocabulary for Unit 1.9**: computer, technology. **Vocabulary for Unit 1.2:** algorithm, criteria, describe, equal, groups, less than, more than, sort. **Vocabulary for Unit 2.6**: clipart, dilute, eCollage, fill, impressionism, palette, parallel, pointillism, rotated, stamps, stamps, style, surrealism.	technologies. ***Essential vocab:*** **Vocabulary for Unit 1.9**: computer, technology. **Vocabulary for Unit 1.2:** algorithm, criteria, describe, equal, groups, less than, more than, sort. **Vocabulary for Unit 2.6**: clipart, dilute, eCollage, fill, impressionism, palette, parallel, pointillism, rotated, stamps, stamps, style, surrealism.
Year 1/2 Cycle B	**Who Lives Here?**	**Spring Has Sprung**	**Back in Time for…**
	Unit 1.1 Online Safety & Exploring Purple Mash **Unit 1.5 Maze Explorers** **Unit 2.4 Questioning**	**Unit 2.2 Online Safety** **Unit 1.6 Animated Story Books** **Unit 2.7 Making Music**	**Unit 2.3 Spreadsheets** **Unit 1.3 Pictograms** **Unit 2.8 Presenting Ideas**
	By the end of these units: **Pupils will know:** • How do you log in safely and understand why that is important? • What is an avatar and how do you use it? • Can you add your name to a picture? • What is the idea of 'ownership' of creative work. • How do you save your work to the My Work area? Is this a private space? • Where can you find direction keys to complete a challenge successfully? • How do you create and debug a set of instructions (algorithm)? • How do you change and extend the algorithm list? • Can you use yes/no questions to separate	**By the end of these units:** **Pupils will know:** • How can you refine searches using the Search tool? • How do you share work electronically using the display boards? • Can you share something with someone on the other side of the world? • What is Email? • How can you talk to others when they are not there in front of you? • What did you put in your email? • What is a digital footprint? • How do you keep your personal data and hardware secure? • What is the difference between aditional books and e-books?	**By the end of these units:** **Pupils will know:** • What are the copying, cutting and pasting shortcuts in 2Calculate? • How do you use a totalling tool? • What are the capabilities of a spreadsheet in adding up coins to match the prices of objects? • How do you create a block graph? • How do you edit data in a table layout? • Can you represent data as a picture? • What is a pictogram? • How can you use pictogram to record the results of an experiment? • How can a story be presented in different ways? • What did you include in your quiz?

	information? • What is a binary tree? • What is a database? • How do you use the search tool to find information? **Children will be able to:** ▪ Use logical reasoning to predict the behaviour of simple programs ▪ Create and debug simple programs ▪ Use technology purposefully to create, organise, store, manipulate and retrieve digital contentCreate and debug simple programs. ▪ Recognise common uses of information technology beyond school. ▪ 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. ***Essential vocab:*** **Vocabulary for Unit 1.1**: alert, avatar, button, file name, filter, home screen, icon, login, log out, menu, notification, password, private, saving, search, typing. **Vocabulary for Unit 1.5:** algorithm, challenge, command, delete, direction, instruction, left, right, route, undo, unit. **Vocabulary for Unit 2.4**: avatar, binary tree, data, database, field, database, field, information, pictogram, question, record, search, sort.	• What is an animation? • How do you add a sound effect? • How do you create music to a picture? • Can you add sounds to a tune to improve it? • How can music be used to express feelings and create tunes which depict feelings? **Children will be able to:** ▪ Use logical reasoning to predict the behaviour of simple programs ▪ Create and debug simple programs ▪ Use technology purposefully to create, organise, store, manipulate and retrieve digital contentCreate and debug simple programs. ▪ Recognise common uses of information technology beyond school. ▪ 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. ***Essential vocab:*** **Vocabulary for Unit 2.2**: attachment, digital footprint, email, filter, identifying, internet, personal information, private information, protection, reply, search, secure, sharing. **Vocabulary for Unit 1.2:** algorithm, criteria, describe, equal, groups, less than, more than, sort. **Vocabulary for Unit 2.6**: clipart, dilute, eCollage, fill, impressionism, palette, parallel, pointillism, rotated, stamps, stamps, style, surrealism.	• What was in your fact file? • How did your presentation to the class go? **Children will be able to:** ▪ Use logical reasoning to predict the behaviour of simple programs ▪ Create and debug simple programs ▪ Use technology purposefully to create, organise, store, manipulate and retrieve digital contentCreate and debug simple programs. ▪ Recognise common uses of information technology beyond school. ▪ 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. ***Essential vocab:*** **Vocabulary for Unit 2.3**: addition, block graph, cell, coins, column, copy, count tool, cut, data, drag, equals, paste, row, table. **Vocabulary for Unit 1.3:** acollect data, compare, data, pictogram, record results, title, totals, visual. **Vocabulary for Unit 2.8**: E-book, fact file, fiction, mind map, multiple choice, node, non-fiction, presentation, quiz.

Year 3/4
Key Stage 2 Coverage:

Year 3/4 Cycle A	Raging Rivers and Marvellous Mountains	The Roman Empire	Groovy Greeks
	Coding **Unit 3.2 Online safety** **Unit 3.3 Spreadsheets**	**Unit 3.4 Touch Typing** **Unit 3.5 Email (including email safety)**	**Unit 3.6 Branching Databases** **Unit 3.7 Simulations** **Unit 3.8 Graphing**
	By the end of these units: **Pupils will know:** • How do you make a safe password? • How can the Internet can be used to help us to communicate effectively? • How does a blog help us communicate with a wider audience? • Is what you read on the internet always true? • What is a 'spoof' website? • How do you check information is accurate on the internet? • What do age restriction symbols look like? • Why do PEGI restrictions exsit? • Who can you turn to for help if you see inappropriate content or have inappropriate contact from others? • How do you add and edit in a table layout? • How can spreadsheet programs automatically create graphs from data? • What do the 'more than', 'less than' and 'equals' tools look like? • What is the 'spin' tool and how it can be used to count through times tables? • How do you describe cells using their addresses?	**By the end of these units:** **Pupils will know:** • How do you sit at a keyboard? • How can you use the home, top and bottom row keys correctly? • Have you improved typing using the home, bottom, and top rows? • Can you type with your left hand? • Can you type with your right hand? • What are the different methods of communication? • How do you open and respond to an email? • How can you use email safely? • How do you attach something to an email? • What was in your simulated email scenario? **Children will be able to:** ▪ 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 ▪ Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	**By the end of these units:** **Pupils will know:** • Can you sort objects using just YES/NO questions? • How do you use 2Question to crate a branching database? • What did you choose to create your branching database about? • What is a simulation? • What is the purpose of a simulation? • What is the effect of a simulation? • Can you set a graph with a number of fields? • Can you enter data for a graph? • Can you produce and share graphs made on your computer? • Exaplain why you chose that style for your graph to represent your data? • What was the answer to your maths question using graphing? • Can you present the results in a range of graphical formats? • How can you use the sorting option to make analysis of your data easier? **ChidIren will be able to:** ▪ Select, use and combine a variety of software (including internet services) on

	Children will be able to: ▪ 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 ▪ Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. ***Essential vocab:*** **Vocabulary for Unit 3.2**: appropriate, blog, inapporpiate, internet, password, permission, reliable source, reputable, spoof, verify, vlogs, website. **Vocabulary for Unit 3.3:** advanced mode, bar graph, cell address, data, equals, less than, more than, pie chart, quiz tool, spinner tool, table.	***Essential vocab:*** **Vocabulary for Unit 3.4**: keys, posture, spacebar, typing. **Vocabulary for Unit 3.5:** advanced book, attachment, BBC, CC, communication, compose, email, inbox, mind mapping, node, password, personal information, save to draft, trusted contact.	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. ▪ Use sequence, selection, and repetition in programs; work with variables and various forms of input and output ***Essential vocab:*** **Vocabulary for Unit 3.6**: binary tree, branching database, data, database, debugging. **Vocabulary for Unit 3.7:** advantages, analysis, decision, disadvantages, evulation, modelling, point of view, realistic, simulation, solution, unrealistic. **Vocabulary for Unit 3.8:** axis, chart, column, data, graph, investigation, row, sorting, survey, tally chart, title.

Year 3/4 Cycle B	**Ancient Ancestors (Stone Age to Iron Age)**	**We're Sailing down the Nile (Ancient Egypt)**	**Our World**
	Coding **Unit 4.2 Online safety** **Unit 4.3 Spreadsheets**	**Unit 4.4 Writing for different auidences** **Unit 4.5 Logo** **Unit 4.6 Animation**	**Unit 4.7 Effective Search** **Unit 4.8 Hardware Investigators**
	By the end of these units: **Pupils will know:** • What do the security symbols look like? • What does 'phising' mean? • What is a digital footprint and how can it be used to stop thieves? • What would be in oyur didgital footprint?	**By the end of these units:** **Pupils will know:** • Why did you use that font and size for that section? • How do you use text formatting to make a piece of writing fit for its audience and purpose? • What character did you role-play for the the job of a journalist in a newsroom? • What did you write in your persuasive letter/poster	**By the end of these units:** **Pupils will know:** • How did you structure your search queries to locate specific information? • How did you use search to answer a series of questions? • What questions did you write for your friend to solve?

	• What are the risks of installing free and paid for software? • What is malware? • What is a computer virus? • How do you know you are not breach copyright? • How do you citie sources that you have used? • Why should you limit your screen time? • How do you use the number formatting tools within 2Calculate to appropriately format numbers? • How can you automatically make a calculation in a cell? • Can you use the timer, random number and spin button tools? • How do you create a line graph from a series of data in a spreadsheet? • How do you use the currency formatting in 2Calculate? • What value did you allocate to the images, to explore place value? **Children will be able to:** ▪ 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. ▪ Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. ***Essential vocab:*** **Vocabulary for Unit 4.2**: AdFly, attachment, citation, collaborate, cookies, copyright, data anaylsis, digital footprint,	as part of the campaign? • How did you assess your texts, using criteria to judge the intended audience? • What are the common instructions in 2Logo? How do type them? • Could you e 2Logo instructions to create shapes on paper? • What is the most efficient way to draw shapes? • Can you use the Repeat command to create shapes? • How do you predict the outcome of code using 2Logo code? • Can you use the Procedure feature? • Did you create a flower or a crystal using 2Logo? • What are animation frames? • What was in your animation? • What does the Onion Skin tool do in animation? • How did you use backgrounds and sounds to make your animation more complex and imaginative? **Children will be able to:** ▪ 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. ▪ Use sequence, selection, and repetition in programs; work with variables and various forms of input and output. ***Essential vocab:*** **Vocabulary for Unit 4.4**: campaign, format, font, genre, opinion, reporter, viewpoint. **Vocabulary for Unit 4.5:** debugging, grid, logo, logo commands, multi line mode, pen down, pen up, prediction, procedure, repeat, run speed, SETPC, SETPS. **Vocabulary for Unit 4.6:** animation, FPS, frame, onion	• What did your analysis uncover about the contents of a web page for clues about the credibility of the information? • What are the different parts of a desktop computer? • What are the funtions of all the different parts of a computer? • What does your leaflet look like to show the function of the different computer parts? **Children will be able to:** ▪ 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. ***Essential vocab:*** **Vocabulary for Unit 4.7**: balanced view, easter eggs, internet, key words, reliability, results page search engine. **Vocabulary for Unit 4.8:** components, CPU, graphics card, hard drive, hardware, input, motherboard, input, network card, output, peripherals, RAM, software.

	malware, phising, plagiarism, ransomware, report, SMART rules, software, spam, virus, watermark. **Vocabulary for Unit 4.3:** average, budget, calculations, chart, column, data, decimal place, format cell, formula, line graph, percentage, resize, timer, totals.	skinning, pause, stop motion.	

Year 5/6
Key Stage 2 Coverage:

Year 5/6 Cycle A	We'll Meet Again (WWII links with Coolham airfield and Battle of Britain)	Rulers of the Rainforest (Ancient Mayan Civilization and rainforests)	Vikings (Life and Legend)
	Unit 5.1 Coding **Unit 5.2 Online Safety** **Unit 5.3 Spreadsheets**	**Unit 5.4 Databases** **Unit 5.5 Game Creator** **Unit 5.6 3D Modelling**	**Unit 5.7 Concept Maps** **Unit 5.8 Word Processing (Google Docs)** **Unit 5.9 Using External Devices: Purple Chip**
	By the end of these units: **Pupils will know:** • How can you use simplified code to make your programming more efficient? • What vairiabes did you use in your code? • What did you create in your game? • What information should you share about yourself and others online? • How do you plan an algorithm to sequence a set of traffic lights? • What images did you choose to reflect the simulation you are making? • What small steps did you break down your task into? • What physical system does your program represent? • How do you use strings in programming? • What are some ways that text variables can be used in coding? • Who can you tell if you are upset by something you see online? • What are the SMART rules? • What is an example of a good password? • What effects can you create that is not possible without technology? • Why should you cite your sources? • What keywords did you select and search techniques you used, to find relevant information and increase reliability?	**By the end of these units:** **Pupils will know:** • What are the different ways to search a database? • Can you search a database to answer questions correctly? • What information did you enter into your class database? • What was your database about? • What is a database and how can you add information to it? • How should you word questions to effectively be answered through your database? • How did you review and analyse your computer game? • How would you describe some of the elements that make a successful game? • Can you crate walls, floor and a roof by uploading images? • What is the 2Design and Make tool? • What are the different viewpoints in 2Design and Make whilst designing a building? • Could you adapt one of the vehicle models by moving the points to alter the shape of the vehicle while still maintaining its form? • How do you edit the polygon 3D models to design a 3D model for a purpose? • How can you refine your design to prepare it for printing?	**By the end of these units:** **Pupils will know:** • What are important about concept maps? • What is a concept map, stage, node and connection? • How do you use 2Connect Story Mode to create an informative text? • How did you use the Presentation Mode to present your concept maps to your audience? • What is a word processing tool? • How do you alter the look of your document? • How do you add images to your document? • What is the correct way to search for images that you are permitted to reuse? • What styles did you use to format your document? • How do you add text boxes and shapes? • How do you use page breaks, headers and footers? • How do you add hyperlinks to places in the document and to an external website? • How do you share your document? • How do you create a vector drawing? • How do you use the spelling and grammar tools? • How do you upload programs to Purple Chip? • How do you adapt code, test it using the

	• What are the advantages and disadvantages of different forms of communication and when it is appropriate to use each? • How do you convert m to cm using a formula? • Can you use this formula to now convert km to miles? • Which letters appeared most often? • How do you use the 'how many' tool? • How do you work out the area and perimeter of rectangles? • What real-life problem did you have to solve? **Children will be able to:** • Use sequence, selection, and repetition in programs; work with variables and various forms of input and output. • Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs • Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts • Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. • 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. ***Essential vocab:*** **Vocabulary for Unit 5.1**: abstraction, action,	• Can you turn your 2D net into a 3D model? • What are the possibilities of 3D printing? **Children will be able to:** • Use sequence, selection, and repetition in programs; work with variables and various forms of input and output. • Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs • Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts • Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. • 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. ***Essential vocab:*** **Vocabulary for Unit 5.4**: arrange, avatar, chart, collaborative, data, database, database report, field, group, record, search, sort, statistics. **Vocabulary for Unit 5.5:** evaluation, feedback, image, instructions, promotion, quest, scene, screenshot, texture, theme. **Vocabulary for Unit 5.6:** 2D, 3D, 3D printing, CAD- computer aided design, design brief, net, pattern fill, points, template.	emulator and then upload it to an external device? • How do you make a program that responds to an external device being tilted and shaken with visual effects and sounds? • How do you adapt a simple quiz? • How do you write a program that uses the sounds and motion sensors of an external device to trigger a response on the computer? • How do you design, code, test and debug a program of their choosing that makes use of the Purple Chip functionality? **Children will be able to:** • Use sequence, selection, and repetition in programs; work with variables and various forms of input and output. • Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs • Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts • Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. • 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. • Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.

	algorithm, command, concatenation, co-ordinates, debug, decomposition, effienct, event, flowchart, friction, function,input, nest, object, output, physical system, predict, print to screen, properties, random, repeat, selection, sequence, simplify, simulation, string, tabs, timer, variable. **Vocabulary for Unit 5.2:** appropriate, avatar, bibliography, citation, collaborate, communication, copyright, critical thinking, digital footprint, encrypt, identify theft, malware, ownership, PEGI rating, phishing, password, personal information, plagiarism, reference, reliability, responsibility, reliable source, screenshot, SMART rules, spoof, validity, **Vocabulary for Unit 5.3:** advance mode, area, budget, columns, computional model, data, format cell, formula, formula bar, formula wizard, 'How Many?' tool, perimeter, profit, rows, spreadsheet, totalling tool, variable.		• 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. ***Essential vocab:*** **Vocabulary for Unit 5.7**: concept, concept map, connection, collaborate, heading, sub-heading, node, presentation mode, story mode. **Vocabulary for Unit 5.8**: attributing, bulleted lists, breaks, caps lock, captions, column, copy, paste, copyright, creative commons, cropping, cursor, distributing columns, document, drop capitals, editor options, font, front screen, grammar check, hyperlink, image editing, image transparency, merge cells, numbered lists, page orientation, readability, row, highlighting, sharing, spell check, styles, template, text box, text formatting, text wrapping, word art, word processing tool, zoom. **Vocabulary for Unit 5.9**: alert, algorithm, chip show text, code view, debug, design, design view, simulator, event, external device, function, host, if/else, input, output, print to screen, QR code, sensor, URL, variable, design.

Year 5/6 Cycle B	Wonders of the Universe	Super Settlers (Anglo Saxons and Scots)	Friends And Heroes (Quakerism and Democracy) A local History Study
	Unit 6.1 Coding **Unit 6.2 Online Safety** **Unit 6.3 Spreadsheets**	**Unit 6.4 Blogging** **Unit 6.5 Text Adventures** **Unit 6.6 Networks**	**Unit 6.7 Quizzing** **Unit 6.8 Understanding Binary** **Unit 6.9 Spreadsheets (Google Sheets)**
	By the end of these units: **Pupils will know:** • Did you use a timer and a score within your program? • How did you debug your program to make it work? • What functions did you make use of in your program? • How did you arrange your tabs to make use of multiple functions? • How does your code execute when your program is run? • Can you follow flowcharts to create and debug code? • Could you create your own flowchart for a procedure? • How were your creative with the way you code to generate novel visual effects? • What variables did you use to user input? • Could you follow through the code of how a text adventure can be programmed in 2Code? • How did you reflect your own ideas into the text adventure? • What are the risks of sharing online your location and the risks of secure websites, spoof websites, phishing, and other email scams? • How can you protect your didgiatl footprint? • Who can you go to for help if you are uncomfortable with something you see online?	**By the end of these units:** **Pupils will know:** • How can a blog be used as an informative text? • What are the key features of a blog? • What was the specific purpose when you created oyur blog? • What was the impact on the audience based on the way your information was presented? • What comment did you post on your class blog? • What are the issues surrounding inappropriate posts and cyberbullying? • What is the effectiveness and impact of a blog? • What is a text adventure? • How do you use the 2Connect to record your ideas? • How do you use 2Create to make a Story Adventure mode to create, test and debug using their plan? • How many sections did you split your adventure game design into appropriate sections to facilitate creating it? • What are the features and purpose of code within a given text adventure? • How do you debug a more complex code involving a combination of functions, variables and a loop? • What ideas did you come up with to further develop the program? • What is the difference between the World	**By the end of these units:** **Pupils will know:** • How do you use 2DIY activities to create a picture-based quiz? • What is the audience's ability level and interests that your inputted into your quiz? • How did you respond to the feedback when you shared your quiz? • Children understand the different question types within 2Quiz. • What sort of questions are best suited to the different question types? • How do you use 2Quiz to make and share a science quiz (or another subject)? • How did you consider your audience's ability level and interests when you set your quiz? • How can you share your quiz with your peers? • How did you respond to your feedback? • What did you think about the different types of grammar games? • What tool did you use to make your grammar game? • How do you use 2Investigate quiz to answer quiz questions? • What was in your own quiz that you designed on 2Investigate? • How can all data in a computer be saved in the computer memory in a binary format? • How does binary use 0 and 1 integers? • Can you relate 0 to an 'off' switch and 1 to and 'on' switch?

	• What are the consequences of promoting inappropriate content online and how to put a stop to such behaviour when you experience it or witness it as a bystander? • Why should you limit your screen time? • What are the positives and negative aspects of technology and balance these opposing views? • What was the answer to your mathematical probability question, using your spreadsheet? • How do you use the formula wizard to create formulae? • How did you solve your problem using a spreadsheet? • How did you use a spreadsheet to model a real-life situation and come up with its solutions? • What are the practical uses of a spreadsheet to help plan actions? **Children will be able to:** • Use sequence, selection, and repetition in programs; work with variables and various forms of input and output. • Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs • Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts • Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. • Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create	Wide Web and the internet? • What is the social network? • Who is Tim Berners-Lee? • What are some major changes in technology which have taken place during your lifetime and the lifetime of their your teacher? **Children will be able to:** • Use sequence, selection, and repetition in programs; work with variables and various forms of input and output. • Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs • Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts • Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. • 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. • Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. • 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.	• Can you count up from 0 in binary, using visual aids? • How do you realte bits to computer storage? • How do you convert numbers to binary using the division by two method? • What spreadsheet tools do you know? • What are cells, columns, rows, cell names, sheets and a workbook? • How do you use a spreadsheet to work out addition, subtraction, multiplication and division calculations? • How do you use the SUM function? • How do you sort data? • How do you incorporate formulae for percentages, averages, max and min into their spreadsheets? • What shortcuts do you know that help to make data meaningful? • How do you illustrate your data using sparklines and data bars? • How do oyu print a spreadsheet? **Children will be able to:** • Use sequence, selection, and repetition in programs; work with variables and various forms of input and output. • Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs • Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts • 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. • Use search technologies effectively,

	a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information. ***Essential vocab:*** **Vocabulary for Unit 6.1**: action, algorithm, command, concatenation, co-ordinates, debug, decomposition, event, execute, run, flowchart, function, input, launch command, object, output, predict, procedure, properties, repeat, repeart until, selection, sequence, simulation, string, tabs, text object, timer, turtle object, variable, x and y properties. **Vocabulary for Unit 6.2:** data analysis, digital footprint, innappropiate, location sharing, password, PEGI rating, phishing, print screen, screen time, secure websities, spoof. **Vocabulary for Unit 6.3:** advanced mode, budget, chart, columns, count tool, data, dice tool, expense, format cell, formula, formula bar, formula wizard, move cell tool, percentage, probability, profit, rows, spreadsheet.	***Essential vocab:*** **Vocabulary for Unit 6.4**: approval, archive, blog, blog post, collaborate, commenting, connections, nodes, vlog. **Vocabulary for Unit 6.5:** debug, flow of control, function, link, QR code, repeat, selection, sprite, step through, text adventure, variables. **Vocabulary for Unit 6.6:** data, DNS (Domain Name Server), hosting, hub, internet, IP address, ISP (Internet Service Provider), LAN (Local Area Network), network, router, search engine, WAN (Wide Area Network), web page, web server, website, WLAN (Wireless Local Area Network), Wi-Fi, World Wide Web.	appreciate how results are selected and ranked, and be discerning in evaluating digital content. • 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. ***Essential vocab:*** **Vocabulary for Unit 6.7**: audience, audio, case-sensative, clipart, clone, copy, paste, database, database record, database field, image, image filter, selfie, statistics, undo, redo, preview, quiz. **Vocabulary for Unit 6.8:** binary, bit, decimal, denary, digit, game states, integer, microprocessor, nanotechnology, nibble, byte, kilobyte, megabyte, gigabyte, terabyte, switch, transistor, vaiable. **Vocabulary for Unit 6.9:** auto fit, average, budget, calculation, categories ribbon, cell, cell references, chart, column, computional model, conditional formatting, currency, data, expense, filter, flash-fill, formatting, formula, formula bar, graph, horizontal axis, maximum, minimum, profit, range, row, series, sheet, sorting, spreadsheet, template, text wrapping, vertical axis, workbook.