St Paul's CE Primary School

Medium term plan Computing

Intent

Our computing curriculum is coherent, planned, sequenced, progressive, challenging and meets the requirements of the National Curriculum from year 1 to year 6 (inclusive of EYFS).

Our computing curriculum is designed to meet the context of our school. It equips our children with the knowledge, skills and attitude to master their learning in computing and be confident learners now and for life.

The computing curriculum at St Paul's develops pupils into creative, confident, considerate and questioning users of technology who can excel in the digital world. It develops pupils' understanding of processes, skills and concepts within the areas of computer science, digital literacy and information technology, allowing pupils to see themselves as digital creators. In all these areas, pupils' experiences and interests are utilised to provided them with a progressive curriculum that promotes mastery by requiring them to develop and embed their understanding of key concepts, skills and process and apply these across a range of devices and applications.

Through their experiences, pupils will understand how they can use technology in a constructive manner to solve problems in a range of contexts, using computational thinking concepts and approaches, and learn about those whose solutions have impacted the world. They developed their understanding of IT systems in order to understand how the technologies they rely on provide their associated services, evaluating the services provided and predicting future uses. Pupils will use a range of resources (both hardware and software) to allow them to transfer knowledge for one context to another and identify the similarities and differences between solutions and evaluate effectiveness for a given outcome.

Through the curriculum, pupils develop their understanding of digital literacy to ensure that routine tasks can be carried out efficiently and transfer the understanding to a range of contexts (including different operating systems). Their experiences with *using and presenting information (including data),* allow pupils to create digital content as a means to communicate their understanding in other curriculum areas. This can contribute to providing further motivation to learners and the opportunities for some pupils to overcome barriers to learning.

Aims and Objectives

At St. Paul's we aim for our children to be master of their learning in computing. To achieve this, the computing curriculum aims to ensure that all pupils:

- Develop conceptual understanding and technical competence in the areas of digital literacy, computer science and understanding IT.
- Can use the principles of computational thinking to write algorithms and programs that provide solutions to problems
- Are aware of the role technology plays in the world in which they live
- Are equipped with the digital literacy skills to use information technology in a purposeful manner
- Appreciate the potential risks associated with technology and conduct themselves in a manner to limit such risks

At St Paul's, we believe it is of the utmost importance to ensure that pupils have a secure understanding of the knowledge and concepts of each unit of learning before progressing to the next. By allowing children to deepen their understanding, we are ensuring that genuine progression within the computing curriculum can take place.

Rights Respecting articles

Article 28 – you have the right to an education | Article 12 – You have the right to be heard | Article 17 – The right to reliable information

How teaching and planning is supported

Progression document – support misconceptions and memory
Curriculum statements – support the implementation of the coverage
Resources on network
Subject leader/SENDCO – available to support planning/adaptations and CPD
Monitoring – feedback from Subject leader and SLT to support developments

St Paul's Computing Curriculum

Long term Plan

Nursery & Reception						
KS1						
	Autumn		**Spring**		**Summer**	
Cycle 1	Digital literacy Online safety Be kind and considerate	Computer science Programming and algorithms Bee bots	Information Technology Creating Media Digital painting	Computer science Computer Systems and Networks Technology around us	Information Technology Data Grouping data	Information Technology Creating Media Digital writing
Cycle 2	Digital literacy Online safety Online information	Computer science Programming and algorithms On-screen robots	Information Technology Creating Media Digital photography	Computer science Computer Systems and Networks IT around us	Information Technology Data Pictograms	Computer science Programming and algorithms Animations and events
LKS2						
Cycle 1	Digital literacy Online safety Sharing and caring	Computer science Programming and algorithms Sequence in music (scratch)	Information Technology Creating Media Desk top publishing	Computer science Computer Systems and Networks Connecting computers	Computer science Programming and algorithms Inputs and outputs	Information Technology Creating Media Stop motion animation
Cycle 2	Digital literacy Online safety Digital lives	Computer science Programming and algorithms Repetition in shapes	Information Technology Creating Media Audio visual audio editing	Computer science Computer Systems and Networks The internet	Information Technology Data Dataloggers	Computer science Repetition in games (scratch)
UKS2						
Cycle 1	Digital literacy Online e safety Online reputation	Computer science Programming and Computational Thinking Nested Loops (PRIMM)	Information Technology Digital Images Vector Drawings	Computer science Computer Systems and Networks Data packets and protocols	Computer science Programming and algorithms Selection with physical computing	Computer science Digital images 3D models Year 6 only Computer science Programming and algorithms Programming with variables
Cycle 2	Digital literacy Online e safety Reliability and Reporting	Information Technology Audio and visual Canva Video editting	Computer science Programming and algorithms Programming with selection	Information Technology Data Spreadsheets	Computer science Computer Systems and Networks Search engines	Computer science Programming and algorithms Selection with Micro bits Year 6 only Computer science Programming and algorithms Programming with variables

The following pages are the medium term plans for year 1-6 – see website for EYFS progression and Long term plan

St Paul's Medium term plan computing

<table>
<tr><td></td><td>Cycle 1:
Autumn 1</td><td colspan="3">Topic Theme: Significant events from the past: The Great Fire of London/The Gunpowder Plot</td></tr>
<tr><td rowspan="4">Year 1/2 Computing</td><td>UNIT</td><td>Digital Literacy</td><td>Online Safety</td><td>Being kind and considerate</td></tr>
<tr><td></td><td>St Pauls CE Curriculum</td><td colspan="2">National Curriculum</td></tr>
<tr><td>Declarative knowledge</td><td>Can I explain why it is important to be considerate and kind to people online?
Can I explain why it is important to ask an adult before going online?
Can I explain why I should not share personal information online?
Can I identify why someone has been unkind online?</td><td colspan="2" rowspan="2">use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have about content or contact on the internet or other online technologies.</td></tr>
<tr><td>Procedural Knowledge</td><td></td></tr>
<tr><td colspan="5">Vocabulary</td></tr>
<tr><td colspan="5">Internet, WWW, world-wide-web, online, permission, considerate, kindness, personal information, sharing.</td></tr>
<tr><td colspan="5">Revisited components (Remembering more and building on knowledge)</td></tr>
<tr><td colspan="5">Knows that they are some things on computers that are not suitable for children</td></tr>
</table>

<table>
<tr><td></td><td>Cycle 1:
Autumn 2</td><td colspan="3">Topic Theme Significant events from the past: The Great Fire of London/The Gunpowder Plot</td></tr>
<tr><td rowspan="4">Year 1/2 Computing</td><td>Unit</td><td>Computer Science</td><td>Programming and Algorithms</td><td>Bee-bots</td></tr>
<tr><td></td><td>St Pauls CE Curriculum</td><td colspan="2">National Curriculum</td></tr>
<tr><td>Declarative knowledge</td><td>Can I describe some of the different ways that algorithms can might be constructed?
Can I evaluate programs written for a bee-bot?</td><td colspan="2" rowspan="2">understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions create and debug simple programs
use logical reasoning to predict the behaviour of simple programs

use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have about content or contact on the internet or other online technologies.</td></tr>
<tr><td>Procedural Knowledge</td><td>Can I construct an algorithm?
Can I create an algorithm that achieves a specific goal?
Can I test and improve algorithms?
Can I write a program for a bee-bot?</td></tr>
<tr><td colspan="5">Vocabulary</td></tr>
<tr><td colspan="5">Algorithm, program, instructions, words, symbols, drawings, bee-bot, robot, testing, output, goal</td></tr>
<tr><td colspan="5">Revisited components (Remembering more and building on knowledge)</td></tr>
<tr><td colspan="5">Knows that technology can be control by humans; Can use programmable devices to achieve a set outcome; Knows that technology can be controlled in different ways</td></tr>
</table>

	Cycle 1: Spring 1	Topic Theme: **All around the world**		
Year 1/2 Computing	Unit	Information Technology	Creating Media	Digital painting
		St Pauls CE Curriculum	**National Curriculum**	
	Declarative knowledge	Can I explain how to paint using a computer?	use technology purposefully to create, organise, store, manipulate and retrieve digital content use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have about content or contact on the internet or other online technologies.	
	Procedural Knowledge	Can I use the shape tool and the line tools? Can I make careful choices when painting a digital picture? Can I can choose appropriate paint tools and colours to recreate the work of an artist? Can I use dots of colour to create a picture in the style of an artist on my own? Can I use all of the tools to create my own piece of digital art?		
Vocabulary				
paint program, tool, paintbrush, erase, fill, undo, Piet Mondrian, primary colours, shape tools, line tool, fill tool, undo tool, Henri Matisse, Wassily Kandinsky, feelings, colour, brush style, Georges Seurat, pointillism, brush size, pictures, painting, computers, like, prefer, dislike				
Revisited components (Remembering more and building on knowledge)				
Knows that technology can be controlled in different ways Can use technology to record and share ideas				

<table>
<tr><td rowspan="5">Year 1/2 Computing</td><td>Cycle 1:
Spring 2</td><td colspan="3">Topic Theme: All around the world</td></tr>
<tr><td>Unit</td><td>Computer Science</td><td>Computer Systems and Networks</td><td>Technology around us</td></tr>
<tr><td></td><td>St Pauls CE Curriculum</td><td colspan="2">National Curriculum</td></tr>
<tr><td>Declarative knowledge</td><td>Can I explain how some items of technology help us?</td><td colspan="2" rowspan="2">use technology purposefully to create, organise, store, manipulate and retrieve digital content
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 about content or contact on the internet or other online technologies.</td></tr>
<tr><td>Procedural Knowledge</td><td>Can I use a trackpad to complete a task?
Can I use a trackpad to create a picture?
Can I use a keyboard to enter text into a computer?
Can I use a keyboard to edit text?</td></tr>
<tr><td colspan="5">Vocabulary</td></tr>
<tr><td colspan="5">Technology, computer, mouse, trackpad, keyboard, screen, double-click, typing,</td></tr>
<tr><td colspan="5">Revisited components (Remembering more and building on knowledge)</td></tr>
<tr><td colspan="5">Knows that technology can be controlled in different ways Can use technology to record and share ideas</td></tr>
</table>

	Cycle 1: Summer 1	Topic Theme: **Magnificent Manchester**		
Year 1/2 Computing	Unit	Information Technology	Data	Grouping Data
		St Pauls CE Curriculum	**National Curriculum**	
	Declarative knowledge	Can I compare groups of objects? Can I identify more than one label for an object?	use logical reasoning to predict the behaviour of simple programs use technology purposefully to create, organise, store, manipulate and retrieve digital content use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have about content or contact on the internet or other online technologies.	
	Procedural Knowledge	Can I use labels to group objects? Can I group objects in different ways? Can I record the number of objects in a group? Can I use grouping to answer questions?		
Vocabulary				
Object, label, group, search, image, property, colour, size, shape, value, colour, data set, more, less, most, fewest, fewest, the same				
Revisited components (Remembering more and building on knowledge)				
Knows that technology can be controlled in different ways Can use technology to record and share ideas				

<table>
<tr><td rowspan="5">Year 1/2 Computing</td><td>Cycle 1: Sum 2</td><td colspan="2">Topic Theme: Magnificent Manchester</td><td></td></tr>
<tr><td>Unit</td><td colspan="2">Information Technology</td><td>Creating Media</td><td>Digital writing</td></tr>
<tr><td></td><td colspan="2">St Pauls CE Curriculum</td><td colspan="2">National Curriculum</td></tr>
<tr><td>Declarative knowledge</td><td colspan="2">Can I evaluate the changes I have made?
Can I compare typing on a computer with writing on paper?</td><td colspan="2" rowspan="2">use technology purposefully to create, organise, store, manipulate and retrieve digital content
use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have about content or contact on the internet or other online technologies.</td></tr>
<tr><td>Procedural Knowledge</td><td colspan="2">Can I use a keyboard to enter data into a computer?
Can I use a keyboard to add and remove text?
Can I explore ways to change the appearance of written?
Can I modify text that has already been inputted into a computer?</td></tr>
<tr><td colspan="5">Vocabulary</td></tr>
<tr><td colspan="5">Word processor, keyboard, keys, letters, type, numbers, space, backspace, text cursor, capital letters, toolbar, bold, italic, underline, mouse, select, font, undo, redo, font, format, compare, typing, writing</td></tr>
<tr><td colspan="5">Revisited components (Remembering more and building on knowledge)</td></tr>
<tr><td colspan="5">Knows that technology can be controlled in different ways Can use technology to record and share ideas</td></tr>
</table>

	Cycle 2: Autumn 1	Topic Theme **Ourselves**	
Year 1/2 Computing	Unit	Online Information	
		St Pauls CE Curriculum	**National Curriculum**
	Declarative knowledge	Can I state how the internet can be used to access information? Can I identify devices that can access information on the internet? Can I explain that not everything online is suitable for me? Can I explain why some online information might not be real?	use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have about content or contact on the internet or other online technologies.
	Procedural Knowledge	Can I search for information in different ways using digital technologies? Can I explain how I would get help if something upsets me online? Can I use simple keyword searches?	
Vocabulary			
Internet, digital device, computer, laptop tablet, smartphone, games console. Digital assistant, smartwatch, search engines (Google) keyword, report, trusted adult, true, false			
Revisited components (Remembering more and building on knowledge)			
Knows that they are some things on computers that are not suitable for children			

	Cycle 2: Autumn 1	Topic Theme: Ourselves		
Year 1/2 Computing	Unit	Computer Science	Programming and Algorithms	On-screen robots
		St Pauls CE Curriculum	**National Curriculum**	
	Declarative knowledge	Can I explain the importance of accurate and precision instructions?	understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions create and debug simple programs use logical reasoning to predict the behaviour of simple programs use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have about content or contact on the internet or other online technologies.	
	Procedural Knowledge	Can I enter information into a computer in different ways? Can I debug an algorithm? Can I explore ways of controlling an on-screen robot? Can I sequence instructions to achieve specific goals?		
Vocabulary				
Information, input, algorithm, instructions, order, sequence, debug, error, accurate, precise. Lightbot Jr, command, block, place, outcome, goal				
Revisited components (Remembering more and building on knowledge)				
Knows that technology can be control by humans; Can use programmable devices to achieve a set outcome; Knows that technology can be controlled in different ways				

<table>
<tr><td></td><td>Cycle 2:
Spring 1</td><td colspan="3">Topic Theme: Journeys</td></tr>
<tr><td rowspan="4">Year 1/2 Computing</td><td>Unit</td><td>Information Technology</td><td>Creating Media</td><td>Digital Photography</td></tr>
<tr><td></td><td>St Pauls CE Curriculum</td><td colspan="2">National Curriculum</td></tr>
<tr><td>Declarative knowledge</td><td>Can I explain how to take a photograph on a digital device?
Can I explain my choices when taking photographs?
Can I describe what makes a good photograph?
Can I explain how a photograph has been improved?</td><td colspan="2" rowspan="2">use technology purposefully to create, organise, store, manipulate and retrieve digital content
use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have about content or contact on the internet or other online technologies.</td></tr>
<tr><td>Procedural Knowledge</td><td>Can I use tools to change an image?
Can I make decisions when taking a photograph?</td></tr>
<tr><td colspan="5">Vocabulary</td></tr>
<tr><td colspan="5">Digital photography, photograph, photographer, camera, app, digital device, delete, capture, landscape, portrait, composition, flash, lighting, light source, focus, autofocus, modify, Pixlr, adjust, colour tool, real, changed.</td></tr>
<tr><td colspan="5">Revisited components (Remembering more and building on knowledge)</td></tr>
<tr><td colspan="5">Knows that technology can be controlled in different ways Can use technology to record and share ideas</td></tr>
</table>

	Cycle 2: Autumn 2	Topic Theme: **Journeys**		
Year 1/2 Computing	Unit	Computer Science	Computer Systems and Networks	IT around us
		St Pauls CE Curriculum	**National Curriculum**	
	Declarative knowledge	Can I Identify examples of Information technology? Can I Identify the ways Information technology Is used in the school? Can I explain some ways that Information technology Is used outside of school? Can I explain how Information technology helps us? Can I explain how to use information technology safely?	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 about content or contact on the internet or other online technologies.	
	Procedural Knowledge	Can I make decisions about which form of Information technology to use?		
Vocabulary				
Information technology (IT), computer, barcode, scanner/scan				
Revisited components (Remembering more and building on knowledge)				
Knows that technology can be controlled in different ways Can identify different examples of technology in their surroundings				

<table>
<tr><td></td><td>Cycle 2:
Summer 1</td><td colspan="3">Topic Theme: Real life superheroes</td></tr>
<tr><td rowspan="4">Year 1/2 Computing</td><td>Unit</td><td>Information Technology</td><td>Data</td><td>Pictograms</td></tr>
<tr><td></td><td>St Pauls CE Curriculum</td><td colspan="2">National Curriculum</td></tr>
<tr><td>Declarative knowledge</td><td></td><td colspan="2" rowspan="2">use technology purposefully to create, organise, store, manipulate and retrieve digital content
use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have about content or contact on the internet or other online technologies.</td></tr>
<tr><td>Procedural Knowledge</td><td>Can I use tally charts to record data?
Can I use pictograms to answer questions?
Can I create a pictogram?
Can I use pictograms to group objects?
Can I collect data to answer a question?
Can I present information in different ways?</td></tr>
<tr><td colspan="5">Vocabulary</td></tr>
<tr><td colspan="5">More than, less than, most, least, organise, data, object, tally chart, votes, total, pictogram, enter, data, tally chart, compare, objects, count, more common, least common, attribute, group, same, conclusion, block diagram, sharing, data</td></tr>
<tr><td colspan="5">Revisited components (Remembering more and building on knowledge)</td></tr>
<tr><td colspan="5">Knows that technology can be controlled in different ways Can use technology to record and share ideas</td></tr>
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<tr><td></td><td>Cycle 2:
Summer 2</td><td colspan="3">Topic Theme: Real life superheroes</td></tr>
<tr><td rowspan="4">Year 1/2 Computing</td><td>Unit</td><td>Computer Science</td><td>Programming and Algorithms</td><td>Animation and Events</td></tr>
<tr><td></td><td>St Pauls CE Curriculum</td><td colspan="2">National Curriculum</td></tr>
<tr><td>Declarative knowledge</td><td>Can I explain how I will meet a design brief?</td><td colspan="2" rowspan="2">understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions create and debug simple programs
use logical reasoning to predict the behaviour of simple programs
use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have about content or contact on the internet or other online technologies.</td></tr>
<tr><td>Procedural Knowledge</td><td>Can I use commands to control a sprite?
Can I sequence commands into program?
Can I explore the effect of changing values in a program?
Can I write programs that control more than one sprite?
Can I implement my algorithm as a program?</td></tr>
<tr><td colspan="5">Vocabulary</td></tr>
<tr><td colspan="5">ScratchJr, Bee-Bot, command, sprite, compare, programming, programming area, block, joining, command, start block, run, program, background, delete, reset, algorithm, predict, effect, change, value, block, instructions, delete, background, appropriate, design.</td></tr>
<tr><td colspan="5">Revisited components (Remembering more and building on knowledge)</td></tr>
<tr><td colspan="5">Knows that technology can be control by humans; Can use programmable devices to achieve a set outcome; Knows that technology can be controlled in different ways</td></tr>
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	Cycle 1: Autumn 1	Topic Theme: **Stone Age to Iron Age**		
Year3/4 Computing	Unit	Digital Literacy	Online Safety	Sharing and caring
		St Pauls Curriculum	**National Curriculum**	
	Declarative knowledge	Can I explain how an online identity might differ from a real-life identity? Can I explain the differences between respectful and disrespectful online behaviour? Can I identify information that should not be shared online? Can I explain ways to be kind to others online? Can I Identify examples of online bullying	use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	
	Procedural Knowledge			

Vocabulary

Internet, WWW, world-wide-web, online, permission, considerate, kindness, personal information, sharing.

Revisited components (Remembering more and building on knowledge)

Knows that things one person finds funny online might upset someone else; Knows that information put on the internet can be seen by others; Can describe ways to behave online to show respect to others; Knows that adults should be asked before information is shared online Can identify information that needs to be kept provide

	Cycle 1: Aut 2	Topic Theme: **From Stone Age to Iron Age**		
Year3/4 Computing	Unit	Computer Science	Programming and Algorithms	Sequence in Music (Scratch)
		St Pauls CE Curriculum	**National Curriculum**	
	Declarative knowledge	Can I explain how sprites are controlled? Can I explain how to start a program in scratch? Can I create a plan in response to a design brief?	design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts 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 use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	
	Procedural Knowledge	Can I create a program from a given design? Can I explore the effect of changing the sequence of a program? Can I implement my algorithm as a program?		

Vocabulary

programming, blocks, commands, code, sprite, costume, stage, backdrop, sprites, programming blocks, motion, turn, point in direction, go to, glide, sequence, event, task, design, code, run the code, order, note, chord, design, algorithm, bug, debug

Revisited components (Remembering more and building on knowledge)

Can construct algorithms to solve a problem Can make logical predictions about the output of a program Can identify how a program did or did not achieve its goal Knows that instructions have been given in a specific order to achieve an outcome Can implement an algorithm as a program Knows that the output of a program depends on the commands given Can use logical reasoning to predict the outcome of a program

	Cycle 1: Spring 1	Topic Theme: **A mountain environments**		
Year3/4 Computing	Unit	Information Technology	Creating Media	Desktop Publishing
		St Pauls CE Curriculum	**National Curriculum**	
	Declarative knowledge	Can I explain how text and images can be used to convey information? Can I explain my decision about the layout? Can I explain how my layout matches the purpose? Can I explain the benefits of desktop publishing?	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.	
	Procedural Knowledge	Can I change the layout to make information more clear? Can I choose appropriate page settings? Can I insert text and images?		

Vocabulary

Text, images, advantages, disadvantages, communicate, font, font style, communicate, template, landscape, portrait, orientation, placeholder, layout, content, desktop publishing, copy, paste, layout, purpose, benefits

Revisited components (Remembering more and building on knowledge)

Knows that the appearance of text can impact on the audience Can make modifications to text to achieve a given outcome

Knows that tools can be adjust to suit needs Can modify the setting of tools to produce artwork that meets a purpose Knows that digital photographs can be changed after they have been taken Can use filters to edit the appearance of a photograph

	Cycle 1: Spring 2	Topic Theme: **A mountain environments**		
Year3/4 Computing	Unit	Computer Science	Computer Systems and Networks	Connecting Computers
		St Pauls CE Curriculum	**National Curriculum**	
	Declarative knowledge	Can I explain how digital devices function? Can I identify the inputs and outputs of a digital device? Can I identify ways in which digital devices are useful? Can I explain how information can be shared through a computer network? Can I explore how digital devices can be connected? Can I recognise the physical components of a network?	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.	
	Procedural Knowledge			
Vocabulary				
Digital device, input, process, output, program, digital, non-digital, connection, network, network switch, server, wireless access point, network cables, network sockets				
Revisited components (Remembering more and building on knowledge)				
Knows that technology exists outside of school and the home Can describe how a piece of technology can help humans/individuals				

	Cycle 1: Summer 1	Topic Theme: **The Roman Empire**		
Year3/4 Computing	Unit	Computer science	Algorithms and Programming	Inputs and outputs
		St Pauls CE Curriculum	**National Curriculum**	
	Declarative knowledge	Can I explore how actions are controlled in a program? Can I explain my decisions when constructing a program?	design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts 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 use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	
	Procedural Knowledge	Can I use inputs to control actions? Can I initialise a program? Can I modify the inputs and outputs in a program? Can I debug a program?		
Vocabulary				
Input, output, execute, sequence, commands, command blocks, program				
Revisited components (Remembering more and building on knowledge)				
Can construct algorithms to solve a problem Can make logical predictions about the output of a program Can identify how a program did or did not achieve its goal Knows that instructions have been given in a specific order to achieve an outcome Can implement an algorithm as a program Knows that the output of a program depends on the commands given Can use logical reasoning to predict the outcome of a program				

<table>
<tr><td></td><td>Cycle 1:
Summer 2</td><td colspan="3">Topic Theme: The Roman Empire</td></tr>
<tr><td rowspan="4">Year3/4 Computing</td><td>Unit</td><td>Information Technology</td><td>Creating Media – Audio Visual</td><td>Stop Motion Animation</td></tr>
<tr><td></td><td>St Pauls CE Curriculum</td><td colspan="2">National Curriculum</td></tr>
<tr><td>Declarative knowledge</td><td>Can I explain what animation is?
Can I plan how to meet a given brief?
Can I use feedback to improve my animation?</td><td colspan="2" rowspan="2">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.</td></tr>
<tr><td>Procedural Knowledge</td><td>Can I create stop-motion animation?
Can I record and manipulate images for stop-motion animation?
Can I add other media to my stop-motion animation?</td></tr>
<tr><td colspan="5">Vocabulary</td></tr>
<tr><td colspan="5">Animation, flip book, stop-frame animation, frame, sequence, image, photograph, setting, character, events, onion skinning, consistency, evaluation, delete, media, import, transition</td></tr>
<tr><td colspan="5">Revisited components (Remembering more and building on knowledge)</td></tr>
<tr><td colspan="5">Knows that the appearance of text can impact on the audience Can make modifications to text to achieve a given outcome
Knows that tools can be adjust to suit needs Can modify the setting of tools to produce artwork that meets a purpose Knows that digital photographs can be changed after they have been taken Can use filters to edit the appearance of a photograph</td></tr>
</table>

	Cycle 2: Autumn 1	Topic Theme: **The Anglo Saxons and the Scots**		
Year3/4 Computing	Unit	Digital Literacy	Online Safety	Healthy Digital Lives
		St Pauls CE Curriculum	**National Curriculum**	
	Declarative knowledge	Can I explain some positive and negative impacts of being online? Can I explain some ways that apps require payments for additional content? Can I explain some ways that design is used to keep me using technology? Can I describe way some content is age-related?	use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	
	Procedural Knowledge	Can I suggest strategies that can be used to limit the time I am online?		
Vocabulary				
Mood, sleep, relationships, in-app purchases, loot boxes, persuasive design, PEGI, BBFC,				
Revisited components (Remembering more and building on knowledge)				
Knows that things one person finds funny online might upset someone else; Knows that information put on the internet can be seen by others; Can describe ways to behave online to show respect to others; Knows that adults should be asked before information is shared online Can identify information that needs to be kept provide				

<table>
<tr><td></td><td>Cycle 2:

Autumn 2</td><td colspan="3">Topic Theme: The Anglo Saxons and the Scots</td></tr>
<tr><td rowspan="4">Year3/4 Computing</td><td>Unit</td><td>Computer Science</td><td>Programming and Algorithms</td><td>Algorithms and Programming Repetition in Shapes</td></tr>
<tr><td></td><td colspan="2">St Pauls CE Curriculum</td><td>National Curriculum</td></tr>
<tr><td>Declarative knowledge</td><td colspan="2">Can I explain why accuracy is important in programming?

Can I explain why repetition is used in programming?

Can I explain the benefits of decomposing a task?</td><td rowspan="2">design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts

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

use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.</td></tr>
<tr><td>Procedural Knowledge</td><td colspan="2">Can I write an algorithm to achieve a given outcome?

Can I modify count-controlled loops?

Can I write a program that uses repetition to achieve a given outcome?</td></tr>
<tr><td colspan="5">Vocabulary</td></tr>
<tr><td colspan="5">Repeat, sequence, instructions, commands, command blocks, loop. Patterns, infinite loops, count-controlled loops, outcome</td></tr>
<tr><td colspan="5">Revisited components (Remembering more and building on knowledge)</td></tr>
<tr><td colspan="5">Can construct algorithms to solve a problem Can make logical predictions about the output of a program Can identify how a program did or did not achieve its goal Knows that instructions have been given in a specific order to achieve an outcome Can implement an algorithm as a program Knows that the output of a program depends on the commands given Can use logical reasoning to predict the outcome of a program</td></tr>
</table>

<table>
<tr><td></td><td>Cycle 2:
Spring 1</td><td colspan="3">Topic Theme: What is great about Manchester?</td></tr>
<tr><td rowspan="4">Year3/4 Computing</td><td>Unit</td><td>Information Technology</td><td>Crating Media – Audio Visual</td><td>Audio Editing</td></tr>
<tr><td></td><td colspan="2">St Pauls CE Curriculum</td><td>National Curriculum</td></tr>
<tr><td>Declarative knowledge</td><td colspan="2">Can I identify devices used to record and play sounds?
Can I identify the different sounds in a recording?</td><td rowspan="2">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.</td></tr>
<tr><td>Procedural Knowledge</td><td colspan="2">Can I edit audio recordings?
Can I layer audio tracks?
Can I evaluate my audio track?</td></tr>
<tr><td colspan="5">Vocabulary</td></tr>
<tr><td colspan="5">Sound, record, input device, output device, audio, edit, delete, import, project. Volume, layered, waveform</td></tr>
<tr><td colspan="5">Revisited components (Remembering more and building on knowledge)</td></tr>
<tr><td colspan="5">Can use a keyboard to enter text Can use a mouse to select icons Can use shift keys to input additional characters. Can use a mouse to access menus within applications</td></tr>
</table>

	Cycle 2: Spring 2	Topic Theme: **What is great about Manchester?**	
Year3/4 Computing	Unit	Computer Systems and Networks	The Internet
		St Pauls CE Curriculum	**National Curriculum**
	Declarative knowledge	Can I describe how networks physically connect to other networks? Can I state what the Internet consists of? Can I recognise that the internet allows for websites to be shared? Can I explain how internet content is created? Can I recognise that some online information may be unreliable?	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 use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.
	Procedural Knowledge	Can I create online content?	
Vocabulary			
Networks, access, information sharing, protecting, internet, networked-devices, WWW, World Wide Web, websites, content, reliability, accurate, illegal			
Revisited components (Remembering more and building on knowledge)			
Knows that technology exists outside of school and the home Can describe how a piece of technology can help humans/individuals			

	Cycle 2: Summer 1	Topic Theme: **Ancient Greece**		
Year3/4 Computing	Unit	Information Technology	Data	Dataloggers
		St Pauls CE Curriculum	**National Curriculum**	
	Declarative knowledge	Can I explain that data gathered over time can be used to answer questions? Can I explain that a data logger collects 'data points' from sensors over time? Can I recognise how a computer can help us analyse data? Can I identify the data needed to answer questions?	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.	
	Procedural Knowledge	Can I use a digital device to collect data automatically? Can I use data from sensors to answer questions?		
Vocabulary				
Data, recording, data-logger continuous, input, sensor, temperature, samples, data points, attributes, sort, answer, questions				
Revisited components (Remembering more and building on knowledge)				
Knows that technology can be used to answer questions Can use a computer to answer comparative questions				

	Cycle 2: Sum 2	Topic Theme: **Ancient Greece**	
Year3/4 Computing	Unit	Computer Science	Repetition in Games (scratch)
		St Pauls CE Curriculum	**National Curriculum**
	Declarative knowledge	Can I explain how repletion is being used in a range of instructions? Can I explain the different types of loops that can be used in programming? Can I explain how I will use repletion to meet a given outcome?	design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts 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 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.
	Procedural Knowledge	Can I design programs that use multiple loops? Can I modify the use of repetition to meet a given outcome? Can I write a program that uses repetition?	

Vocabulary

Repeat, sequence, repetition, loops, count-control, infinite, sequence, program, script, concurrent, Scratch, sprite, command block,

Revisited components (Remembering more and building on knowledge)

Can construct algorithms to solve a problem Can make logical predictions about the output of a program Can identify how a program did or did not achieve its goal Knows that instructions have been given in a specific order to achieve an outcome Can implement an algorithm as a program Knows that the output of a program depends on the commands given Can use logical reasoning to predict the outcome of a program

<table>
<tr><td></td><td>Cycle 1:

Autumn 1</td><td colspan="3">Topic Theme: The Battle of Britain</td></tr>
<tr><td rowspan="4">Year5/6 Computing</td><td>Unit</td><td>Digital Literacy</td><td>E-Safety</td><td>Online Reputation</td></tr>
<tr><td>St Pauls Curriculum</td><td>St Pauls CE Curriculum</td><td colspan="2">National Curriculum</td></tr>
<tr><td>Declarative knowledge</td><td>Can I explain some reasons for online impersonation?

Can I identify positive and negative actions about online identity?

Can I explain how online adverts can use stereotyping?

Can I explain how online adverts might acquire my data?

Can I explain how I control the data apps collect about me?</td><td colspan="2" rowspan="2">use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.</td></tr>
<tr><td>Procedural Knowledge</td><td>Can I copy and modify an avatar?</td></tr>
<tr><td colspan="5">Vocabulary</td></tr>
<tr><td colspan="5">Online identify, negative, positive, online impersonation, avatar, modify, copy, stereotyping, data, profiling, privacy settings, tracking.</td></tr>
<tr><td colspan="5">Revisited components (Remembering more and building on knowledge)</td></tr>
<tr><td colspan="5">Can explain ways to keep myself safe with communicating with others online; Knows that information shared on the internet can be copied and used by others; Can describe some of the differences between online-bullying and real-world bullying; Knows that some webpages seek consent to collect information about users</td></tr>
</table>

<table>
<tr><td></td><td>Cycle 1:

Autumn 2</td><td colspan="3">Topic Theme: The Battle of Britain</td></tr>
<tr><td rowspan="4">Year5/6 Computing</td><td>Unit</td><td>Computer Science</td><td>Programming and Computational Thinking</td><td>Nested Loops (PRIMM)</td></tr>
<tr><td>St Pauls Curriculum</td><td>St Pauls CE Curriculum</td><td colspan="2">National Curriculum</td></tr>
<tr><td>Declarative knowledge</td><td>Can I make predictions about programs?

Can I investigate a program?</td><td colspan="2" rowspan="2">design, write and debug programs that accomplish specific goals, including controlling

or simulating physical systems; solve problems by decomposing them into smallerparts

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 andcorrect errors in algorithms and programs

use technology safely, respectfully and responsibly; recogniseacceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.</td></tr>
<tr><td>Procedural Knowledge</td><td>Can I modify a program written in Scratch?

Can I modify a program?

Can I write a program using nested loops to create a given output?</td></tr>
<tr><td colspan="5">Vocabulary</td></tr>
<tr><td colspan="5">Program, run, investigate, modify, make, PRIMM, sequence, repetition, loops, count controlled loops, infinite loop, inner loop, outer loop, nested loops, output.</td></tr>
<tr><td colspan="5">Revisited components (Remembering more and building on knowledge)</td></tr>
<tr><td colspan="5">Can construct algorithms that use repetition; Can use patterns to inform their algorithms and programs Can explain how they can further improve their program

Knows that repetition can be in the form of infinite and count-controlled loops Can explain how the have used repetition in a program Can construct programs that use count-controlled loops to achieve a specific outcome Can construct programs that contain more than one sequence</td></tr>
</table>

<table>
<tr><td></td><td>Cycle 1:

Spring 1</td><td colspan="3">Topic Theme: Natural Disasters</td></tr>
<tr><td rowspan="4">Year5/6 Computing</td><td>Unit</td><td>Information Technology</td><td>Digital Images</td><td>Vector Drawings</td></tr>
<tr><td></td><td>St Pauls CE Curriculum</td><td colspan="2">National Curriculum</td></tr>
<tr><td>Declarative knowledge</td><td>Can I explain how vector drawings are created?

Can I evaluate vector drawings?</td><td colspan="2" rowspan="2">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.</td></tr>
<tr><td>Procedural Knowledge</td><td>Can I create a vector drawing by combining shapes?

Can I use tools to create a desired effect?

Can I layer objects in a vector drawing?

Can I group shapes to create multiple vector images?</td></tr>
<tr><td colspan="5">Vocabulary</td></tr>
<tr><td colspan="5">Line, shapes, vector drawing, combine, represent, combining shapes, effects, layering, grouping, cloning, duplicating</td></tr>
<tr><td colspan="5">Revisited components (Remembering more and building on knowledge)</td></tr>
<tr><td colspan="5">Knows that manipulating images can impact on the quality of the image Can select the most appropriate tools to alter a digital image to meet a given purpose</td></tr>
</table>

	Cycle 1: Spring 2 (unit 1 of 2)	Topic Theme: **Natural Disasters**		
Year5/6 Computing	Unit	Computer Science	Computer Systems and Networks	Data Packets and Protocols
		St Pauls Curriculum		**National Curriculum**
	Declarative knowledge	Can I explain how websites are accessed? Can I explain how data is transferred across the internet?		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 and information use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.
	Procedural Knowledge			
Vocabulary				
Server, router, client, DNS, cable, internet, data, data packets, header, payload				
Revisited components (Remembering more and building on knowledge)				
Knows some of the benefits of creating a local area network Can explain how Local area networks can be connected together Knows how and why the world wide web was created Can explain the roles of key internet hardware				

	Cycle 1: Summer 1	Topic Theme: **The Maya**		
Year5/6 Computing	Unit	Computer Science	Programming and algorithms	Selection with physical computing
		St Pauls CE Curriculum	**National Curriculum**	
	Declarative knowledge	Can I explain how a microcontroller is being used to control a circuit? Can I explain when a set of action within a conditional loop will be carried out? Can I explain how I have used selection to control the flow of actions? Can I design a physical project the uses selection? Can I write algorithms to represent the program I will construct?	design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts 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 use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	
	Procedural Knowledge	Can I write programs that include conditional loops? Can I write programs that use count-controlled loops to control a physical output?		
Vocabulary				
Microcontroller, infinite loop, LED, output, component, count-controlled loop, conditional loop, input. design, algorithm, program				
Revisited components (Remembering more and building on knowledge)				
Can construct algorithms that use repetition; Can use patterns to inform their algorithms and programs Can explain how they can further improve their program Knows that repetition can be in the form of infinite and count-controlled loops Can explain how the have used repetition in a program Can construct programs that use count-controlled loops to achieve a specific outcome Can construct programs that contain more than one sequenceCan explain how a program has used inputs and outputs				

<table>
<tr><td></td><td>Cycle 1: Summer 2</td><td colspan="3">Topic Theme: The Maya</td></tr>
<tr><td rowspan="4">Year5/6 Computing</td><td rowspan="2">Unit</td><td>Computer Science</td><td>Digital Images</td><td>3D Models</td></tr>
<tr><td>St Pauls CE Curriculum</td><td colspan="2">National Curriculum</td></tr>
<tr><td>Declarative knowledge</td><td>Can I explain some differences between 3d models and vector drawings?

Can I explain how I will meet a design brief?</td><td colspan="2" rowspan="2">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 correct errors in algorithms and programs

use technology safely, respectfully and responsibly; recognise

acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.</td></tr>
<tr><td>Procedural Knowledge</td><td>Can I modify 3d objects?

Can I combine objects to create a 3D model?

Can I create a 3D model that meets a given purpose?

Can I create a 3D model by implementing my design?</td></tr>
<tr><td colspan="5">Vocabulary</td></tr>
<tr><td colspan="5">3d model, perspective, lift, lower. recolour, resize, group, rotate, duplicate, combine, placeholders, analyse, construct , evaluate</td></tr>
<tr><td colspan="5">Revisited components (Remembering more and building on knowledge)</td></tr>
<tr><td colspan="5">Knows that manipulating images can impact on the quality of the image

Can select the most appropriate tools to alter a digital image to meet a given purpose</td></tr>
</table>

	Cycle 2: Autumn 1	Topic Theme: **The Ancient Egyptians**		
Year5/6 Computing	Unit	Digital Literacy	Online Safety	Reliability and Reporting
		St Pauls CE Curriculum	**National Curriculum**	
	Declarative knowledge	Can I get help when online issues arise? Do I know what to do if I experience online bullying? Can I support someone who is experiencing online bullying? Can I explain how to create a positive online identity? Can I protect my online identity? Can I create a positive online identity? Can I identify online fact and opinion?	use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	
	Procedural Knowledge			
Vocabulary				
Fact, opinion, reliability, trusted adult, Childline, CEOP, online identity, online bullying.				
Revisited components (Remembering more and building on knowledge)				
Can explain ways to keep myself safe with communicating with others online; Knows that information shared on the internet can be copied and used by others; Can describe some of the differences between online-bullying and real-world bullying; Knows that some webpages seek consent to collect information about users				

<table>
<tr><td></td><td>Cycle 2: Autumn 2</td><td colspan="3">Topic Theme: The Ancient Egyptians</td></tr>
<tr><td rowspan="4">Year5/6 Computing</td><td>Unit</td><td>Information Technology</td><td>Audio and Visual</td><td>Canva Video Editting</td></tr>
<tr><td></td><td>St Pauls CE Curriculum</td><td colspan="2">National Curriculum</td></tr>
<tr><td>Declarative knowledge</td><td>Can I research information for my video?
Can I plan my video?
Can I evaluate my video?</td><td colspan="2" rowspan="2">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 correct errors in algorithms and programs
use technology safely, respectfully and responsibly; recognise
acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.</td></tr>
<tr><td>Procedural Knowledge</td><td>Can I develop an understanding of the tools of Canva through experimentation?
Can I create a video using Canva?</td></tr>
<tr><td colspan="5">Vocabulary</td></tr>
<tr><td colspan="5">Canva, edit, trim , clip layer, input, export, narration, slides plan, storyboard, evaluate, record, images,</td></tr>
<tr><td colspan="5">Revisited components (Remembering more and building on knowledge)</td></tr>
<tr><td colspan="5">Knows that audio tracks can be layered so multiple sounds can be played at the same time; Can combine import, layer and sequence sounds files to meet a given purpose; Can edit an audio file to meet a given purpose; Can use onion skinning tool to produce smooth animations.</td></tr>
</table>

<table>
<tr><td></td><td>Cycle 2: Spring 1</td><td colspan="3">Topic Theme: The Tropical Rainforest</td></tr>
<tr><td rowspan="4">Year5/6 Computing</td><td>Unit</td><td>Computer Science</td><td>Programming and algorithms</td><td>Programming with Selection</td></tr>
<tr><td></td><td>St Pauls CE Curriculum</td><td colspan="2">National Curriculum</td></tr>
<tr><td>Declarative knowledge</td><td></td><td colspan="2" rowspan="2">elect, 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 correct errors in algorithms and programs</td></tr>
<tr><td>Procedural Knowledge</td><td>Can I use my existing knowledge of computer programming concepts?

Can I construct programs using repetition?

Can I use selection in algorithms?

Can I write programs using selection?</td></tr>
<tr><td colspan="5">Vocabulary</td></tr>
<tr><td colspan="5">Repetition, selection, conditions, algorithms, programs, Scratch, command blocks, script, sprite, backdrops</td></tr>
<tr><td colspan="5">Revisited components (Remembering more and building on knowledge)</td></tr>
<tr><td colspan="5">Can construct algorithms that use repetition; Can use patterns to inform their algorithms and programs Can explain how they can further improve their program

Knows that repetition can be in the form of infinite and count-controlled loops Can explain how the have used repetition in a program Can construct programs that use count-controlled loops to achieve a specific outcome Can construct programs that contain more than one sequence</td></tr>
</table>

<table>
<tr><td></td><td>Cycle 2: Spring 2</td><td colspan="3">Topic Theme: The Tropical Rainforest</td></tr>
<tr><td rowspan="4">Year5/6 Computing</td><td>Unit</td><td>Information Technology</td><td>Data</td><td>Spreadsheets</td></tr>
<tr><td></td><td>St Pauls CE Curriculum</td><td colspan="2">National Curriculum</td></tr>
<tr><td>Declarative knowledge</td><td>Can I explain the benefits of using formulae in spreadsheets?</td><td colspan="2" rowspan="2">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 correct errors in algorithms and programs</td></tr>
<tr><td>Procedural Knowledge</td><td>Can I enter data into a spreadsheet?

Can I set up a spreadsheet?

Can I use formula in spreadsheets?

Can I design a spreadsheet to meet a given purpose?

Can I present data in suitable ways?</td></tr>
<tr><td colspan="5">Vocabulary</td></tr>
<tr><td colspan="5">Data, calculations, spreadsheet, cells, column, rows, graph, fill, copy</td></tr>
<tr><td colspan="5">Revisited components (Remembering more and building on knowledge)</td></tr>
<tr><td colspan="5">Knows that technology can be used to answer questions Can use a computer to answer comparative questions</td></tr>
</table>

	Cycle 2: Summer 1	Topic Theme: **The Kingdom of England**		
Year5/6 Computing	Unit	Computer Science	Computer Systems and Networks	Search Engines
		St Pauls CE Curriculum	**National Curriculum**	
	Declarative knowledge	Can I describe how search engines select results? Can I explain how search results are ranked? Can I identify ways in which search results are influenced? Can I explain how to communicate using technology? Can I evaluate different methods of online communication	use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content	
	Procedural Knowledge	Can I use search engines?		
Vocabulary				
Search engines, names of search engines, page ranking, search engine optimisation, web crawlers, search engine index				
Revisited components (Remembering more and building on knowledge)				
Knows that computers can share information when connected together in a network Can explain how the components of a digital network interact Knows the internet is world-wide network of computers Can explain how the internet allows for data on the world wide web to be exchanged				

	Cycle 2: Summer 2	Topic Theme: **The Kingdom of England**		
Year5/6 Computing	Unit	Computer Science	Programming and Algorithms	Selection with Microbits
		St Pauls CE Curriculum	**National Curriculum**	
	Declarative knowledge	Can I explain how actions can be controlled by inputs? Can I evaluate the use of micro:bit as a music-making device?	design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller	
	Procedural Knowledge	Can I write algorithms for a given purpose? Can I explore the outputs of a physical computing device? Can I write algorithm that use selection to control outputs? Can I use inputs as a condition in selection statements?	parts 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	

Vocabulary

Micro:bit, physical computing, makecode, USB, LEDS, inputs, outputs, algorithms, conditions, actions.

Revisited components (Remembering more and building on knowledge)

Can construct algorithms that use repetition; Can use patterns to inform their algorithms and programs Can explain how they can further improve their program

Knows that repetition can be in the form of infinite and count-controlled loops Can explain how the have used repetition in a program Can construct programs that use count-controlled loops to achieve a specific outcome Can construct programs that contain more than one sequenceCan explain how a program has used inputs and outputs

	Cycle 1 and 2: Summer 2 (year 6 only)	Topic Theme: **The Kingdom of England**		
Year5/6 Computing	Unit	Computer Science	Programming and Algorithms	Programming with variables
		St Pauls CE Curriculum	**National Curriculum**	
	Declarative knowledge	Can I explain how a variable has been used? Can I explain how variables how controlled the flow of actions in a program?	design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts 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	
	Procedural Knowledge	Can I modify a program to use variables to produce an outcome? Can I write an algorithm that uses random variable values? Can I use variables in a program to meet a given need?		
Vocabulary				
Algorithms, programming, variables, random, value, infinite loop, selection, condition, micro:bit, physical computing, inputs, outputs.				
Revisited components (Remembering more and building on knowledge)				
Can construct algorithms that use repetition; Can use patterns to inform their algorithms and programs Can explain how they can further improve their program Knows that repetition can be in the form of infinite and count-controlled loops Can explain how the have used repetition in a program Can construct programs that use count-controlled loops to achieve a specific outcome Can construct programs that contain more than one sequence Can explain how a program has used inputs and outputs				