Potters Gate Primary & St Andrew's Infant Schools Curriculum Subject Progression – Computing

Computing	School Curriculum Intent	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Knowledge What will children know at the end of this unit of work?	Shown a variety of programmable toys and introduced to how they work Using IWB PG - iPads	This knowledge is	Gained throughout	the year		
	Skills As an expert in this subject children will be able to	To know how to programme and use the BeeBots independently To access various interactive games across the curriculum	These skills are used	throughout the year			
	Creativity & Cultural Development	der oss the carried an					
Year R	Spiritual Development						
	Community & Courageous Advocacy	Problem solving					
	Health & Wellbeing	Online safety	Online safety	Online safety	Online safety	Online safety	Online safety
	Aspiration	Robotics					
	Vocabulary What key vocabulary will children know that is new?						
	School Values Friendship, Resilience. Justice, Trust	Friendship, Resilience. Justice, Trust	Friendship, Resilience. Justice, Trust	Friendship, Resilience. Justice, Trust	Friendship, Resilience. Justice, Trust	Friendship, Resilience. Justice, Trust	Friendship, Resilience Justice, Trust
	British Values democracy, the rule of law, individual liberty, and mutual respect and tolerance of those with different faiths and beliefs						

Computing	School Curriculum Intent	Autumn 1 Computing systems and networks – Technology around us	Autumn 2 Creating media – Digital painting	Spring 1 Programming A – Moving a robot	Spring 2 Data and information – Grouping data	Summer 1 Creating media – Digital writing	Summer 2 Programming B - Programming animations
	Knowledge What will children know at the end of this unit of work?	How to switch on and log into a computer and use a mouse effectively.	How to make marks and shapes using different tools and recognise the difference between a painting on a computer and on paper.	How to match a command to an outcome, predict the outcome of a sequence and plan a program using commands.	in more than one way	How to use a keyboard, add text to a word document and change the style, size and colour of the font.	How to compare different command tools, add algorithms to more than one sprite, test the programs created
	Skills As an expert in this subject children will be able to	-To identify technology	-To use the shape tool and the line tools -To make careful choices when painting a digital picture -To explain why I chose	sequence -To combine four direction commands to make sequences -To plan a simple	-To label objects -To identify that objects can be counted -To describe objects in different ways -To count objects with the same properties -To compare groups of objects -To answer questions about groups of	-To add and remove text on a computer -To identify that the look of text can be changed on a computer -To make careful choices when changing text	-To choose a command for a given purpose -To show that a series of commands can be joined together -To identify the effect of changing a value -To explain that each sprite has its own instructions -To design the parts of a project -To use my algorithm to create a program
	Creativity & Cultural Development	Aid to writing	Form of artwork			-	Creating characters
	Spiritual Development	Form of expression	Form of expression			Form of expression	
	Community & Courageous			Problem solving and			Problem solving and
	Advocacy Health & Wellbeing	Online safety	Online safety	teamwork Online safety	Online safety	Online safety	teamwork Online safety

Aspiration	Developing Technology		Robotics			Computer programming
Vocabulary What key vocabulary will children know that is new?	technology, computer, mouse, trackpad, keyboard, screen, double-click, typing	paint program, tool, paintbrush, erase, fill, undo, shape tools, line tool, fill tool, undo tool, colour, brush style, brush size, pictures, painting, computers	Bee-Bot, forwards, backwards, turn, clear, go, commands, instructions, directions, left, right, route, plan, algorithm, program.	search, image, property, colour, size,	word processor, keyboard, keys, letters, type, numbers, space, backspace, text cursor, capital letters, toolbar, bold, italic, underline, mouse, select, font, undo, redo, format, compare, typing, writing.	ScratchJr, command, sprite, compare, programming, area, block, joining, start, run, program, background, delete, reset, algorithm, predict, effect, change, value, instructions, design
<u>School Values</u> Friendship, Resilience. Justice, Trust	Friendship, Resilience. Justice, Trust	Friendship, Resilience. Justice, Trust	Friendship, Resilience. Justice, Trust	Friendship, Resilience. Justice, Trust	Friendship, Resilience. Justice, Trust	Friendship, Resilience. Justice, Trust
British Values democracy, the rule of law, individual liberty, and mutual respect and tolerance of those with different faiths and beliefs	Rule of law Individual liberty	Tolerance – recognising and accepting differences	Democracy – working with others and sharing ideas.	Democracy – working with others and sharing ideas.	Democracy – explaining reasons for choices	Democracy – working with others and sharing ideas.

Computin	gSchool Curriculum Intent	Autumn 1 Computing systems and networks – IT around us	Autumn 2 Creating media – Digital photography	Spring 1 Programming A – Robot algorithms	Spring 2 Data and information - Pictograms	Summer 1 Creating media – Digital Music	Summer 2 Programming B - Programming quizzes
Year 2	Knowledge What will children know at the end of this unit of work?	How to identify examples of computers and how rules can keep them safe.	How to capture a digital photo and identify which photos are real and which have been changed.	How to follow and give a sequence of instructions, use an algorithm to create a program and test and debug a program.	How to organise data in a tally chart and use this to create a	How to use a computer to experiment with pitch, add a sequence of notes to a rhythm and create a rhythm on a computer.	How to change the outcome of a sequence of commands and create an algorithm.
	Skills As an expert in this subject children will be able to	-To recognise the uses and features of	-To use a digital device to take a photograph	-To describe a series of instructions as a sequence	-To recognise that we can count and	-To say how music can make us feel	-To explain that a sequence of commands has a start

	technology -To identify the uses of information technology in the school -To identify information technology beyond school -To explain how	To make choices when taking a photograph To describe what makes a good photograph To decide how photographs can be improved To use tools to change an image To recognise that photos can be changed	happens when we change the order of instructions -To use logical reasoning to predict the outcome of a program -To explain that programming projects can have code and	compare objects using tally charts -To recognise that objects can be represented as pictures -To create a pictogram -To select objects by attribute and make comparisons -To recognise that people can be described by attributes -To explain that we can present information using a computer	-To identify that there are patterns in music -To experiment with sound using a computer -To use a computer to create a musical pattern -To create music for a purpose -To review and refine our computer work	-To explain that a sequence of commands has an outcome -To create a program using a given design -To change a given design -To create a program using my own design -To decide how my project can be improved
Creativity & Cultural Development						
Spiritual Development	Form of expression	Form of artwork			Form of expression	
Community & Courageous			Problem solving and			Problem solving and
Advocacy	0 1: ()	0 1: ()	teamwork	0 1: ()	0 1: ()	teamwork
Health & Wellbeing	Online safety	Online safety	Online safety	Online safety	Online safety	Online safety
Aspiration	Developing technology	Photography	Robotics			Computer programming
Vocabulary What key vocabulary will children know that is new?	Information technology (IT), computer, barcode, scanner/scan	device, camera, photograph, capture, image, digital, landscape, portrait, framing, subject, compose, light sources, flash, focus, background, editing,	instruction, sequence, clear, unambiguous, algorithm, program, order, prediction, artwork, design, route, mat, debugging, decomposition	chart, votes, total, pictogram, enter, data,	p. 10, 10p. 0,, 1,	sequence, command, program, run, start, outcome, predict, blocks, design, actions, sprite, project, modify, change, algorithm, build, match, compare, debug, features,

		filter, format, framing, lighting		different, conclusion, block diagram, sharing	evaluate, decomposition, code.
School Values Friendship, Resilience. Justice, Trust	Friendship, Resilience. Justice, Trust	<u> </u>			, ,
British Values democracy, the rule of law, individual liberty, and mutual respect and tolerance of those with different faiths and beliefs	Rule of law Individual liberty		Democracy – working with others and sharing ideas		

Com	outing	School Curriculum Intent	Autumn 1 Computing systems and networks - Connecting computers	Autumn 2 Creating media - Stop- frame animation	Spring 1 Programming A - Sequencing sounds	Spring 2 Data information - Branching databases	Summer 1 Creating media - Desktop publishing	Summer 2 Programming B - Events and actions in programs
		Knowledge What will children know at the end of this unit of work?	How different devices work, the physical parts of a computer and what a network is.	How to create an effective stop-frame animation, how to improve and evaluate their own and others' work.	How to create a sequence of connected commands using Scratch.	How to plan and create a branching database. How to evaluate the effectiveness of a branching database.	How to create a template for a particular purpose.	How to improve a programme, build sequences of commands and explain reasons for choices.
Yea		Skills As an expert in this subject children will be able to	-To explain how digital devices function -To identify input and output devices -To recognise how digital devices can change the way we work -To explain how a computer network can be used to share information -To explore how digital devices can be connected	-To explain that animation is a sequence of drawings or photographs -To relate animated movement with a sequence of images -To plan an animation -To identify the need to work consistently and carefully	-To explore a new programming environment -To identify that commands have an outcome -To explain that a program has a start -To recognise that a sequence of commands can have an order -To change the appearance of my project	-To create questions with yes/no answers -To identify the attributes needed to collect data about an object -To create a branching database -To explain why it is helpful for a database to be well structured -To plan the structure of a branching database	-To recognise how text and images convey information -To recognise that text and layout can be edited -To choose appropriate page settings -To add content to a desktop publishing publication -To consider how different layouts can suit different purposes	four directions

	-To recognise the physical components of a network	-To evaluate the impact of adding other media to an animation	<u> </u>	-To independently create an identification tool	-To consider the benefits of desktop publishing	
Creativity & Cultural Development		Design own animation, create a scene	Design character, background and movement			Design character, background and movement
Spiritual Development	Form of expression	Form of expression			Form of expression	
Community & Courageous Advocacy			Problem solving and teamwork			Problem solving and teamwork
Health & Wellbeing	Online safety	Online safety	Online safety	Online safety	Online safety	Online safety
Aspiration	Developing technology		Robotics			Computer programming
Vocabulary What key vocabulary will children know that is new?	digital device, input, process, output, program, digital, non-digital, connection, network, switch, server, wireless access point, cables, sockets	animation, flip book, stopframe, frame, sequence, image, photograph, setting, character, events, onion skinning, consistency, evaluation, delete, media, import, transition.	Scratch, programming, blocks, commands, code, sprite, costume, stage, backdrop, motion, turn, point in direction, go to, glide, sequence, event, task, design, run the code, order, note, chord, algorithm, bug, debug, code	attribute, value, questions, table, objects, branching, database, objects, equal, even, separate, structure, compare, order, organise, selecting, information, decision tree.	text, images, advantages, disadvantages, communicate, font, style, landscape, portrait, orientation, placeholder, template, layout, content, desktop publishing, copy, paste, purpose, benefits.	motion, event, sprite, algorithm, logic, move, resize, extension block, pen up, set up, pen, design, action, debugging, errors, setup, code, test, debug, actions.
<u>School Values</u> Friendship, Resilience. Justice, Trust	Friendship, Resilience. Justice, Trust	Friendship, Resilience. Justice, Trust	Friendship, Resilience. Justice, Trust	Friendship, Resilience. Justice, Trust	Friendship, Resilience. Justice, Trust	Friendship, Resilience. Justice, Trust
British Values democracy, the rule of law, individual liberty, and mutual respect and tolerance of those with different faiths and beliefs	Rule of law Individual liberty	Democracy – working within a team and sharing ideas				Democracy – working within a team and sharing ideas

			Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Comput	ingSchool Curriculum Intent	Autumn 1	Creating media –	Progamming A –	Data information –	Creating media -	Programming B –
			Audio production	Repetition in shapes	Data logging	Photo editing	Repetition in games

		Computing systems and networks – The Internet					
	Knowledge What will children know at the end of this unit of work?	How to access key websites, that there are rules that protect the content and that not all content created is true.	How to identify the input and output devices used to record and play sound and how to arrange sounds to create the effect wanted.	command including	How data can be collected using sensors and recorded, how to view and sort data to gather information.	might be improved and	How to modify a snippet of code, using count-controlled and infinite loops and build a program following a design.
Year 4	Skills As an expert in this subject children will be able to	-To describe how networks physically connect to other networks -To recognise how networked devices make up the internet -To outline how websites can be shared via the World Wide Web (WWW) -To describe how content can be added and accessed on the World Wide Web (WWW) -To recognise how the content of the WWW is created by people -To evaluate the consequences of unreliable content	-To identify that sound can be recorded -To explain that audio recordings can be edited -To recognise the different parts of creating a podcast project -To apply audio editing skills independently -To combine audio to enhance my podcast project -To evaluate the effective use of audio	-To identify that accuracy in programming is important -To create a program in a text-based language -To explain what 'repeat' means -To modify a count-controlled loop to produce a given outcome -To decompose a task into small steps -To create a program that uses count-controlled loops to produce a given outcome	-To explain that data gathered over time can be used to answer questions -To use a digital device to collect data automatically -To explain that a data logger collects 'data points' from sensors over time -To recognise how a computer can help us analyse data -To identify the data needed to answer questions -To use data from sensors to answer questions	-To explain that the composition of digital images can be changed -To explain that colours can be changed in digital images -To explain how cloning can be used in photo editing -To explain that images can be combined -To combine images for a purpose -To evaluate how changes can image	programming there are infinite loops and count controlled loops -To develop a design that includes two or more loops which run
	Creativity & Cultural Development	Fauna of assessed in the				Farms of average:	
	Spiritual Development	Form of expression				Form of expression	

Community & Courageous Advocacy		Problem solving and teamwork				Problem solving and teamwork
Health & Wellbeing	Online safety	Online safety	Online safety	Online safety	Online safety	Online safety
Aspiration	Developing technology		Robotics			Computer programming
Vocabulary What key vocabulary will children know that is new?	internet, network, router, security, switch, server, wireless access point (WAP), website, web page, web address, routing, web browser, World Wide Web, content, links, files, use, download, sharing, ownership, permission, information, accurate, honest, content, adverts	speaker, headphones, input device, output device, sound, podcast, edit, trim, align, layer, import, record, playback, selection, load, save, export,	I chinnet algorithm	data, table, layout, input device, sensor, logger, logging, data point, interval, analyse, dataset, import, export, logged, collection, review, conclusion.	image, edit, digital, crop, rotate, undo, save, adjustments, effects, colours, hue, saturation, sepia, vignette, image, retouch, clone, select, combine, made up, real, composite, cut, copy, paste, alter, background, foreground, zoom, undo, font	Scratch, programming, sprite, blocks, code, loop, repeat, value, infinite loop, count-controlled loop, costume, repetition, forever, animate, event block, duplicate, modify, design, algorithm, debug, refine, evaluate.
School Values Friendship, Resilience. Justice, Trust	Friendship, Resilience. Justice, Trust	Friendship, Resilience. Justice, Trust	Friendship, Resilience. Justice, Trust	Friendship, Resilience. Justice, Trust	Friendship, Resilience. Justice, Trust	Friendship, Resilience. Justice, Trust
British Values democracy, the rule of law, individual liberty, and mutual respect and tolerance of those with different faiths and beliefs	Rule of law Individual liberty Democracy	Democracy – working with others and sharing ideas		Democracy	Rule of law	

Computin	gSchool Curriculum Intent	Autumn 1 - Computing systems and networks - Systems and searching	Autumn 2 – Creating Media – Video production	I Programming A =	Spring 2 – Data and Information – Flat-file databases	Summer 1 – Creating Media – Introduction to vector graphics	
Year 5	Knowledge What will children know at the end of this unit of work?	Recap on the features of a computing system. How to compare		How to write, program and control and simple circuit.	and a computer,	How to use different drawing tools for different purposes. How to layer drawings	

		results from different search engines.	range of creative techniques.		of each and use the information to answer questions.	to achieve the desire effect.	How to design, create, and evaluate a program using selection.
	: in this subject be able to	-To explain that computers can be connected together to form systems -To recognise the role of computer systems in our lives -To experiment with search engines -To describe how search engines select results -To explain how search results are ranked -To recognise why the order of results is important, and to whom	-To explain what makes a video effective -To identify digital devices that can record video -To capture video using a range of techniques -To create a storyboard -To identify that video can be improved through reshooting and editing -To consider the impact of the choices made when making and sharing a video	-To control a simple circuit connected to a computer -To write a program that includes count-controlled loops -To explain that a loop can stop when a condition is met -To explain that a loop can be used to repeatedly check whether a condition has been met -To design a physical project that includes selection -To create a program that controls a physical computing project	-To use a form to record information -To compare paper and computer-based databases -To outline how you can answer questions by grouping and then sorting data -To explain that tools can be used to select specific data -To explain that computer programs can be used to compare data visually -To use a real-world database to answer questions	-To identify that drawing tools can be used to produce different outcomes -To create a vector drawing by combining shapes -To use tools to achieve a desired effect -To recognise that vector drawings consist of layers -To group objects to make them easier to work with -To apply what I have learned about vector drawings	-To explain how selection is used in computer programs -To relate that a conditional statement connects a condition to an outcome -To explain how selection directs the flow of a program -To design a program which uses selection -To create a program which uses selection -To evaluate my program
Creativity &	Cultural Development		Creating own piece of media				
Spiritual Dev	velopment	Form of expression				Form of expression	
Community Advocacy	& Courageous				Problem solving and teamwork		Problem solving and teamwork
Health & We	ellbeing	Online safety	Online safety	Online safety	Online safety	Online safety	Online safety
Aspiration		Developing technology					Computer programming
Vocabulary		system, connection,	video, audio, camera,	microcontroller, USB,	database, data,	vector, drawing tools,	Selection, condition,
	ocabulary will children		talking head, panning,	components,	information, record,	object, toolbar, vector	true, false, count-
know that is	new?	storage, output,	close up, video	connection, infinite	field, sort, order,	drawing, move, resize,	controlled loop,

	search, search engine,	camera, microphone,	loop, output	group, search, value,	colour, rotate,	outcomes, conditional
	refine, index, bot,	lens, mid-range, long	component, motor,	criteria, graph, chart,	duplicate/copy, zoom,	
	ordering, links,	shot, moving subject,	repetition, count-	axis, compare, filter,	select, align, modify,	program, debug,
	algorithm, search	side by side, angle	controlled loop,	presentation.		question, answer, task,
	engine optimisation	(high, low, normal),	Crumble controller,	-	paste, group, ungroup,	design, input,
	(SEO), web crawler,	static, zoom, pan, tilt,	switch, LED, Sparkle,		reuse, reflection	implement, test, run,
	content creator,	storyboard, filming,	crocodile clips,			setup, operator
	selection, ranking.	review, import, split,	connect, battery box,			
		trim, clip, edit,	program, condition,			
		reshoot, delete,	Input, output,			
		reorder, export,	selection, action,			
		evaluate, share.	debug, circuit, power,			
			cell, buzzer			
School Values	Friendship, Resilience.	Friendship, Resilience.	Friendship, Resilience.	Friendship, Resilience.	Friendship, Resilience.	Friendship, Resilience.
Friendship, Resilience. Justice, Trust	Justice, Trust	Justice, Trust	Justice, Trust	Justice, Trust	Justice, Trust	Justice, Trust
British Values						
democracy, the rule of law,	Rule of law	5 1 (1		Democracy – working		Democracy – working
individual liberty, and mutual	Individual liberty	Rule of law		with others and		with others and
respect and tolerance of those with	Democracy	Individual liberty		sharing ideas		sharing ideas
different faiths and beliefs						

Computing	School Curriculum Intent	Autumn 1 – Computing systems and networks - Communication and Collaboration	Autumn 2 – Creating Media – Webpage creation	Spring 1 – Programming A – Variables in games	Spring 2 – Data and Information – Introduction to spreadsheets	Summer 1 – Creating Media – 3D modelling	Summer 2 – Programming B – Sensing movement
Year 6	Knowledge What will children know at the end of this unit of work?	How data is transferred across the internet and evaluate how information is shared using technology.	How to evaluate a website and use this to create a webpage. To understand the implications of using the work of others.	variable in a program	How to create a spreadsheet using data collected.	How to create a 3D model using a range of digital tools.	How to develop a program to run a controllable device, using previous skills of variables.
	Skills As an expert in this subject children will be able to	-To explain the importance of internet addresses	-To review an existing website and consider its structure	-10 define a 'variable'	-To create a data set in a spreadsheet -To build a data set in a spreadsheet	-To recognise that you can work in three dimensions on a computer	-To create a program to run on a controllable device

	-To recognise how data is transferred across the internet -To explain how sharing information online can help people to work together -To evaluate different ways of working together online -To recognise how we communicate using technology -To evaluate different methods of online communication	to preview pages -To outline the need for a navigation path -To recognise the implications of linking to content owned by other people	-To design a project that builds on a given example -To use my design to create a project -To evaluate my project	-To explain that formulas can be used to produce calculated data -To apply formulas to data -To create a spreadsheet to plan an event -To choose suitable ways to present data	for a given purpose -To plan my own 3D model -To create my own digital 3D model	-To explain that selection can control the flow of a program -To update a variable with a user input -To use a conditional statement to compare a variable to a value -To design a project that uses inputs and outputs on a controllable device -To develop a program to use inputs and outputs on a controllable device a controllable device
Creativity & Cultural Development		Creating own webpage			Creating own models	
Spiritual Development	Form of expression				Form of expression	
Community & Courageous Advocacy			Problem solving and teamwork			Problem solving and teamwork
Health & Wellbeing	Online safety	Online safety	Online safety	Online safety	Online safety	Online safety
Aspiration	Developing technology	Webpage design	Gaming design			Computer programming
Vocabulary What key vocabulary will children know that is new?	communication, protocol, data, address, Internet Protocol (IP), Domain Name Server (DNS), packet, header, data payload, chat, explore, slide deck, reuse, remix, collaboration, internet, public, private, oneway, two- way, one-to-one, one- to-many.	website, web page, browser, media, Hypertext Markup Language (HTML), logo, layout, header, media, purpose, copyright, fair use, home page, preview, evaluate, device, Google Sites, breadcrumb trail, navigation, hyperlink, subpage, evaluate,	variable, change, name, value, set, design, event, algorithm, code, task, artwork, program, project, code, test, debug, improve, evaluate, share, assign, declare	output, operation, range, duplicate, sigma, propose,	shapes, select, move, perspective, view, handles, resize, lift, lower, recolour, rotate, duplicate, group, cylinder, cube, cuboid, sphere, cone, prism, pyramid, placeholder, hollow, choose,	random, sensing,

		implication, external link, embed.				
<u>School Values</u> Friendship, Resilience. Justice, Trust	Friendship, Resilience. Justice, Trust	,	Friendship, Resilience. Justice, Trust	Friendship, Resilience. Justice, Trust	Friendship, Resilience. Justice, Trust	Friendship, Resilience. Justice, Trust
British Values democracy, the rule of law, individual liberty, and mutual respect and tolerance of those with different faiths and beliefs	Rule of law Individual liberty Democracy	Rule of law	Democracy – working with others and sharing ideas			Democracy – working with others and sharing ideas