<u>Ranvilles Junior School – our Computing Pathway</u>

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	Ambitious Learners						LXCQI National Curriculum Strands								
	Every half term, the children		То	pic Stra	nd										
t	participate in the Ranvilles			•				Computer Science		In					
National Curriculum statement	SMSC 'Big Debate', which brings together threads from different curriculum subjects to create a line of enquiry, which, when evaluated by the children, strengthens and connects the children's knowledge and understanding. This star represents topics that would make a significant contribution to the 'Big Debate'.	Computing Systems and Networks	Programming	Data Handling	Creating Media	Online Safety	CSI Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.	Cs2 Use sequence, selection, and repetition in programs; work with variables and various forms of input and output.	CS3 Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.	CS4 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.	formation Technolog CS5 Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.	CS6 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.	CS7 Use technology safely, respectfully and responsibly; recognise acceptable/unacceptabl e behaviour; identify a range of ways to report concerns about content and contact.		
	Topic 1Networks andAutumn 1the Internet	~								~	✓	✓			
m	Topic 2 Autumn 2		✓				✓	\checkmark	~	~	~				
Year 3	Topic 3 Journeys inside Spring 1 a computer	~ [^]					✓		✓			✓			
	Topic 4 Online Safety Summer 1 Topic 5	₹				 ✓ 					✓	✓	✓		
	Video Trailers Summer 2 Topic 1 Collaborative				✓					✓			✓		
	Autumn 1 Learning	۲ ′		-						✓ 		✓ 			
r 4	Autumn 2		~				~	\checkmark	✓ 	✓ 					
Year	Spring 1 Online Safety Topic 4 Computational	۲		-		 ✓ 					✓		✓ 		
	Summer 1 Thinking Topic 5 Investigating		√				✓	✓ ✓	✓	✓ ✓			✓		
	Summer 2 Weather	✓		v				v		•	✓	✓	v √		
	Autumn 1 Search Engines Topic 2 Online Safety	•								✓	✓ ✓		v √		
ar 5	Autumn 2 Topic 3 Mars Rover 1	~		✓						· · · · · · · · · · · · · · · · · · ·		✓			
Year	Spring ITopic 4Programming		√				✓	✓	✓	✓					
	Summer 1 Music Topic 5 Stop Motion Summer 2 Animation	7			✓		✓	✓							
	Summer 2 Animation Topic 1 Online Safety					~					✓	✓	✓		
	Autumn 1 P Topic 2 Introduction to Autumn 2 Python	`					✓	✓	✓	✓					
ear 6	Topic 3 Spring 1 Bletchley Park	~ [~]								~	√	✓	✓		
*	Topic 4 History of Summer 1 Computers				~					✓		✓			
	Topic 5 Summer 2			~						~		✓	✓		
	Summer 2			v						·		•	•		

Be you Explore Excel



<u> Ranvilles Junior School – the Computing Pathway – Year 3</u>

Be you Explore Excel

Computer system's & NetWorks Networks and the internet Internet with the the you area Step 1 Step 2 Step 3 Step 4 Step 5 To recognise what a network is To demonstrate how information moves around a retwork. To demonstrate how a website work. To explore the role of a router. To identify the role of pack data. Autumn 2 In order to bitraduce the children to simple retwork. Making a positive contribution in the world is your responsibility from the children to simple retwork. Making a positive contribution in the world is your responsibility from the children to simple retwork. Step 1 Step 2 Step 3 Step 4 Step 5 To explore a programming program. To program an animation. To program a story. To program a game. Spring 1 Step 2 Step 3 Step 4 Step 5 To explore a programming program. In order to build on the children's understanding of computer heaves and the internet by earing about the heave and internet by earing about the heave and internet program a story. To program a game. Spring 1 Step 2 Step 3 Step 4 Step 5 To recognise basic inputs and inside a loptop. To identify the component index and the propose of computer parts. To understand the purpose of computer parts. To decompose a tablet										EXCEl	
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To recognise what a network in index network in index strand a matwork. To demonstrate how a website work. To explore the role of a router. To identify the role of pack data. Autumm 2 Programming scretch In order to introduce the children to impart the median of impart to introduce the children to impart the median of introduce the children of interest on the children of interest		Computer Systems & Netw		Computing sys children under the equipment	stem in Ranv stand the te	illes, so that all chnology behind	Making a difference as an individual is more important than as team.				
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To plan a book trailer To take photos or videos that To edit a video		Creating Media	interests and i	magination t	hrough creating	l'm Ok – You	ou're OK! Differences are good.				
		Step 1	Step 2			Step 3		Step 4		Step 5	
		To plan a book trailer.		•	eos that	To edit a video.		To add text and transitions to a			



<u> Ranvilles Junior School – the Computing Pathway – Year 4</u>

Focus The contextual focus for t	the pupils' le	earning.	Purpose The importanc curriculum.	e of the topi	c in our	Our SMSC 'Big Debate' Links The purple ' Ambitious Learners ' star illustrates where there are planned focus links to support the children's knowledge and understanding in exploring 'The Big Debate'.				
<u>Autumn 1</u> Computer Systems Collaborative Lea r	orks	In order to ref software and knowledge in	l develop th using the f ce, to ensu t in the wor	ne children's functions of re that children d processing	Identity and	dentity and self-worth are influenced more by change than by context and culture.				
Step 1		Step 2			Step 3		Step 4		Step 5	
) le else's	To understand how to create digital survey.		To create and share a Microsoft Form.		To analyse data. Context: using MS Excel spreadsheets	
<u>Autumn 2</u> Programming Further Scratch			further throug	owledge of gh the med through ref	programming lium of Scratch, lecting on the	Being powerful is more important than being different.			being different.	
Step 1		Step 2			Step 3		Step 4		Step 5	
To recall the key featur Scratch.	To understand h precall the key features of game works by t cratch. decomposition t features.				To recognise wł is.	nat a variable	To underst variable in	and how to make a Scratch.	To create a quiz using variables.	
<u>Spring 1</u> Online Safety	*	secure and h internet by bu and confiden online. This u identifying th of information trustworthy th	uilding their ace of how t nit supports e safety of n and reflect	r knowledge to stay safe s children in online sources	Keeping safe spiritually, mentally and emotionally is all our responsibility physically and online.					
Step 1		Step 2			Step 3		Step 4 To explain that technology can be designed to act like or impersonate living things.		Step 5 To explain how technology can be a distraction and identify when I might need to limit the amount of time spent using technology.	
To describe how to search information within a wide technologies and make a judgement about the pro accuracy.	e group of a		ribe some of the encourage peop nline.		To explain why lot sharing the same beliefs online do r opinions or beliefs	opinions or not make those				
<u>Spring 2</u> This term has been o gaps and support w						We have the right to learn from our mistakes without be judged.				
Step 1	2		Step 3		Step 4		Step 5	Step 6		
				-		-		-	-	
	<u>Summer 1</u> Programming Computational Thinking				e children to the i.e. how a ts – in view of	Our behaviour should always positively reflect how we value others.				
Programming	ninking		computer thi informing the complexity of come higher	eir understo f programn	Inding and ning in units to					
Programming	ninking	Step 2	informing the complexity of	eir understo f programn	Inding and ning in units to		Step 4		Step 5	

To understand that computational thinking is made up of four key strands.		decom	erstand what position is and how to to solve problems.	To understand v recognition and mean.	•	To understand how to create an algorithm and what it can be used for.	To combine computational thinking skills to solve a problem.	
	<u>Summer 2</u> Data Handling Investigating Weather		In order to give the child opportunity to gather, a present data in the cont forecasting.	nalyse and	We are all responsible for our environment and natural v ensure lives are impacted positively.			
	Step 1			Step 3		Step 4	Step 5	
To log data taken from online sources in a spreadsheet.		To desi	gn a weather station.	To design an automated machine to respond to sensor data.		To understand how weather forecasts are made.	To use tablets or digital cameras to present a weather forecast.	



<u>Ranvilles Junior School – the Computing Pathway – Year 5</u>

Focus The contextual focus for the pu	ıpils' learr	ning.	Purpose The importance curriculum.	e of the topic	e in our	Our SMSC 'Big Debate' Links The purple 'Ambitious Learners' star illustrates where there are planned focus links to support the children's knowledge and understanding in exploring 'The Big Debate'.					
<u>Autumn 1</u> Computer Systems & Networks Search Engines			In order to de knowledge au search engin pupils can us efficiently and	anding of ensure that all nginges the	Belonging - we should all be free to move between countries.						
Step 1	St	tep 2			Step 3		Step 4		Step	o 5	
o understand what a sear engine is and how to use it.					To search effect	ively.	To create poster.	an informative		nderstand how search nes work.	
<u>Autumn 2</u> Online Safety						Being remembered for making a difference is more impo than making a difference.			is more important		
Step 1	St	tep 2			Step 3		Step 4		Step	o 5	
	n ai	ind neg	gative aspects		information car	be used to	To discove bullying.	er ways to overcome	can	nderstand how technology affect health and oeing.	
binary coding in that a Handling Rover and use and				g in the con	text of the Mars	Making a difference to the world is criti				cal for the future.	
Step 1	St	tep 2			Step 3		Step 4		Step 5		
	dentify how and why data To read and calculate				To identify the c			To represent binary as text.			
·						The voice of adult.	a child is	as important and	valu	able as that of an	
Step 1	Step 2			Step 3		Step 4	Step 5		Step 6		
. _		-				-		-		-	
<u>Summer 1</u> Programming Programming Music: Sonic Pi			interests in eag. programming them			Being financially safe is just as import safe.			ant as being emotionally		
Step 1	St	itep 2			Step 3		Step 4		Step 5		
		o create a program that plays			To plan a soundtrack program.		To program a soundtrack.		To program music for a specific purpose.		
Creating Media and understanding of me				edia through	•••		l from our mistake	es le	ads to significant		
Step 1	St	tep 2			Step 3		Step 4		Step	o 5	
To understand what animation				top		notion video.	To create a stop motion animation		To edit and assess my stop motion animation		
	Computer Systems & I Search Engines Step 1 To understand what a search engine is and how to use it. Autumn 2 Dnline Safety To understand how apps ca access personal information and how to alter the bermissions. Spring 1 Data Handling Mars Rover Step 1 To identify how and why da is collected from space. Spring 2 This term has been delike gaps and support with m step 1 Step 1 To tinker with a new piece of offware. Step 1 To tinker with a new piece of offware.	Computer Systems & Network Step 1 S Step 1 S For understand what a search engine is and how to use it. T Autumn 2 S Conline Safety S Step 1 S So understand how apps can access personal information and how to alter the permissions. T Spring 1 S Cata Handling Mars Rover S Spring 2 S So identify how and why data is collected from space. T Spring 2 Step 1 S Spring 2 S This term has been deliberately gaps and support with miscond is collected from space. T Summer 1 Programming Music: Sonic I Step 1 S Step 1 <td< th=""><th>Computer Systems & Networks Search Engines Step 1 Step 2 To be an everythic Autumn 2 Conline Safety Step 1 Step 2 To understand how to use it. Step 1 Step 1 To be an everythic To be an everythic Step 1 Step 1 Counderstand how apps can and how to alter the sermissions. Spring 1 Cotata Handling Mars Rover Step 1 Step 1 Step 1 Step 1 Step 2 To identify how and why data is collected from space. Spring 2 this term has been deliberately left frights and support with miscorception Step 1 Step 2 To tread Step 1 Step 2 Step 1 Step 1 Step 2 Step 1</th><th>Autumn 1 Computer Systems & Networks knowledge a search engine search engine is pupils can us efficiently an trustworthine for an inspine is and how to use it. Step 2 So understand what a search engine is and how to use it. To be aware that not everything online is trustworthine is trustworthine is trustworthine is trustworthine is trustworthine is trustworthine. In order for the secure and how no use it. Autumn 2 In order for the secure and how to alter the secure and how to alter the sermissions. To be aware of the part on an egative aspects communication. Step 1 Step 2 To identify how and why data is collected from space. To read and calculate in umbers using binary colling and support with misconceptions identified and calculate in the secure is identified aspects to own sounder its in the secure and how to alter the secure and how and secure and use of the part of the secure and how to alter the secure and how to</th><th>Autumn 1 Step 2 In order to introduce the positive and search engines. This will pupils can use search engines. This will subort the retriventing online is true. Autumn 2 To be aware that not environment by building their and confidence of how to online. This unit supports evaluating how they will own online footprint and may have on their wells and confidence of how to online. This unit supports evaluating how they will own online footprint and may have on their wells and confidence of how to online. This unit supports evaluating how they will own online footprint and may have on their wells and how to use it. Step 1 Step 2 o understand how apps can use search engines. This unit supports evaluating how they will own online footprint and may have on their wells and evaluating how they will own online footprint and may have on their wells and how to use it. In order to introduce the positive and negative aspects of online communication. Step 1 Step 2 In order to introduce the positive and eaclulate numbers using binary code. Step 1 Step 2 Step 3 Step 1 Step 2 Step 3 Step 1 Step 2 Step 3 Step 1 Step 2 Step 3</th><th>computer Systems & Networks bearch Engines search engines. The will ensure that all projects can use search engines. itep 1 Step 2 Step 3 o understand what a search ingine is and how to use it. To be oware that not everything online is true. 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Being remembered for than making a different on angeing a book they will expect their now nonline footphit and the offects this more have on their wellbeing. Being remembered for than making a different on angeing a book they will expect their now nonline footphit and the offects this more have on their wellbeing. Being firm moking a to alcower for migling and they to a book they different well and they appet their now firm and and calculate numbers using binary code effectively. Step 4 To discower footphit we and apply the computer angeing 1 To read and calculate numbers using binary code. To identify the computer angeing firm ancientify to read and calculate numbers using binary code. To dentify the computer angeing firm ancientify soft angeing firm ancientify to read and calculate numbers using binary code. Step 4 To exel 4 10 dentify thow an</th><th>Nummer Nummer Number of the second engines. Belanging - we should all be free to mark effective on the second engines. 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<u> Ranvilles Junior School – the Computing Pathway – Year 6</u>

Be you Explore Excel

	Purpose The importance of the topic in our						Our SMSC 'Big Debate' Links The purple 'Ambitious Learners' star illustrates where there are planned focus links					
	<u>Autumn 1</u> Online Safety		secure and h internet by b and confider online. This u building their online, throug	n order for the children to be safe, secure and happy when using the nternet by building their knowledge				vledge and understanding		ion is in the public		
	Step 1				Step 3		Step 4		Step 5		Step 6	
	To describe online issues that give us negative feelings and know how to get help.	at give us negative ellings and know how to sharing online and consequences of sharing online reputation				nline	To describe how capture bullying as evidence.		To manage personal passwords effectively		To be aware of strategies that help protect people online.	
	<u>Autumn 2</u> Programming Introduction to Pythol	rogramming increasing the complexity and					Change alwo	ays has a	positive impact.			
	Step 1		Step 2			Step 3		Step 4		Ste	p 5	
	To tinker with a new piece of software.	Lo understand hested loops.			To understand b commands.				loops when To understand the use o mming. random numbers.			
	<u>Spring 1</u> Computer Systems & I Bletchley Park	Netw	vorks	the importan Bletchley Par purpose of co	ice of the co k through e omputer co e achievem k. Links to o	odes and the ents of those at	de breakers at ploring the les and the <i>It is possible to break the cycle of injustice.</i> nts of those at					
	Step 1		Step 2			Step 3		Step 4		Ste	p 5	
Year o	To understand there are ma different types of secret cod	'		erstand the im ng a secure po	•	To understand t of Bletchley Parl War II war effort	k to the World		infor	To research and present information about historical figures in computing.		
	Spring 2This term has been deliberately left free for teachers to use AfL to gaps and support with misconceptions identified from the previouStep 1Step 2Step 3					Together we	can mak	e our world more s	sust	ainable for everyone.		
						Step 4		Step 5		Step 6		
	-					-		-		-		
	Summer 1In order to develop the children's knowledge and understanding of creating MediaHistory of Computershow modern technology affects everyday life.				anding of reflecting on	Fair trade is a	fair.					
Step 1 Step 2					Step 3	Step 4 Step 5				p 5		

To tinker with audio recording.		rd, edit and add sound to a radio play.	To understand I have changed this has had on world.	and the impact	To research one of the computers that changed the world and present information about it to the class.To design a computer of future.		
<u>Summer 2</u> Data Handling Big Data!		In order to develop the o knowledge and underst analysing data, through infrared waves beofre in analysing and evaluatin	anding of learning about Every indivic puting,		dual can leave a positive legacy.		
Step 1 S			Step 3		Step 4	Step 5	
To identify how barcodes and QR codes work. To know how infrared way transmit data.			To recognise how RFID is used.		To input and analyse real- world data.	To analyse and evaluate data.	