



# **Computer Studies Mid Term Plans**

# Contents

National Curriculum	1
Year 7 Computer Studies	2
HT 1: Respect	2
HT 2: Networks	3
HT 3: Media	4
HT 4: Programming A	5
HT 5: Spreadsheets	6
HT 6: Programming B	7
Year 7 Alternative Learning Provision (ALP)	8
HT 1 : Respect	8
HT 2: Networks (KS2 Start)	9
HT 3: Media (KS2 start)	
HT 4: Programming A (KS2 start)	
HT 5: Spreadsheets (KS2 start)	
HT 6: Programming B (KS2 start) Micro:Bit	
Year 8 Computer Studies	14
HT 1: Media	14
HT 2: Computer Systems	
HT 3: Web Development	
HT 4: Representations	
HT 5: App Development	
HT 6: Python Programming	
Year 8 Alternative Learning Provision (ALP)	20
HT 1: Media	
HT 2: Networks (Y7 start)	21
HT 3: Web Development	
HT 4: Programming A (Y7 start)	23
HT 5: Spreadsheets (Y7 start)	24
HT 6: Programming B (Y7 start)	25
Year 9 Computer Studies	
HT 1: Python Programming	
HT 2: Blender Animation	27
HT 3: Data Science	
HT 4: Representation	
	_





	HT 5: Cyber Security	30
	HT 6: Physical Programming	31
Ye	ar 9 Alternative Learning Provision (ALP)	32
	HT 1: Representations (Y8 start)	32
	HT 2: Blender Animation	33
	HT 3: Python Programming (Y8 start)	34
	HT 4: Representations	35
	HT 5: Cyber Security	36
	HT 6: Physical Computing	37
00	R GCSE Computer Science J277	38
	1. Computer Systems	38
	1. Systems Architecture	38
	2. Memory & Storage	39
	3. Networks and Protocols	40
	4. Network Security	41
	5. System Software	42
	6. Impact of Digital Technology	43
	2. Computational Thinking, Algorithms and Programming	44
	1. Algorithms	44
	2. Programming Techniques	45
	3. Robust Programs	46
	4. Boolean Logic	47
	5. IDEs and Languages	48
Ed	uqas Vocational Award in ICT	49
	Unit 1 – ICT in Society	49
	Chapter 1: How IT can be used to fulfil the needs of organisations and individuals	49
	Chapter 2: How data and information is used and transferred	51
	Chapter 3: Legal, moral, ethical, cultural and environmental impacts of IT and the need for cybersecurity	53
	Unit 2 – ICT in Context	55
	Task 1: Planning, creating, modifying, and using databases	55
	Task 2: Planning, creating, modifying, and using spreadsheets	56
	Task 3: Planning, creating, and modifying an automated document	58
	Task 4: Planning, creating, manipulating, and storing images	59





# National Curriculum

KS3 pupils should be taught to:

- design, use and evaluate computational abstractions that model the state and behaviour of real-world problems and physical systems.
- understand several key algorithms that reflect computational thinking [for example, ones for sorting and searching]; use logical reasoning to compare the utility of alternative algorithms for the same problem.
- use 2 or more programming languages, at least one of which is textual, to solve a variety of computational problems; make appropriate use of data structures [for example, lists, tables, or arrays]; design and develop modular programs that use procedures or functions.
- understand simple Boolean logic [for example, AND, OR and NOT] and some of its uses in circuits and programming; understand how numbers can be represented in binary, and be able to carry out simple operations on binary numbers [for example, binary addition, and conversion between binary and decimal]
- understand the hardware and software components that make up computer systems, and how they communicate with one another and with other systems.
- understand how instructions are stored and executed within a computer system; understand how data
  of various types (including text, sounds and pictures) can be represented and manipulated digitally, in
  the form of binary digits.
- undertake creative projects that involve selecting, using, and combining multiple applications, preferably
  across a range of devices, to achieve challenging goals, including collecting, and analysing data and
  meeting the needs of known users.
- create, reuse, revise and repurpose digital artefacts for a given audience, with attention to trustworthiness, design, and usability.
- understand a range of ways to use technology safely, respectfully, responsibly, and securely, including
  protecting their online identity and privacy; recognise inappropriate content, contact and conduct, and
  know how to report concerns.

All KS4 pupils must have the opportunity to study aspects of information technology and computer science at sufficient depth to allow them to progress to higher levels of study or to a professional career.

All KS4 pupils should be taught to:

- develop their capability, creativity and knowledge in computer science, digital media, and information technology.
- develop and apply their analytic, problem-solving, design, and computational thinking skills.
- understand how changes in technology affect safety, including new ways to protect their online privacy and identity, and how to report a range of concerns.





# Year 7 Computer Studies

# HT 1: Respect

<b>Core Curriculum</b> "The core is like a residue – the things that stay, the things that can be captured as proposition. Often,						
such things need to be committed to memory."						
	Christine Counsell					
Builds on	<ul> <li>Using technology safely, respectfully, and responsibly.</li> </ul>					
Retrieval opportunities	<ul> <li>Recognising acceptable/unacceptable behaviour online.</li> </ul>					
	Identifying a range of ways to report concerns about content and contact.					
Substantive Knowledge	What is Personal data?					
Facts, figures, dates etc	<ul> <li>Impact of our digital footprint</li> <li>The concept of social media platforms, posting, sharing</li> </ul>					
	Explaining a 'Computer Virus'					
Procedural, Experimental	•Basic operating system and software skills					
and Disciplinary	Presentation skills					
Knowledge	Using email					
(Skills to develop,						
experience and practice)						
Next Steps •Y8 Media						
	Y8 Web Development					
Summative Assessment	Pupils will be assessed on this topic as part of their DC1, DC2					
<u> </u>	& DC3 formal assessments for Computer Studies.					
Independent Learning	<ul> <li>Identify physical dangers in a computer room.</li> <li>Identify phishing, smishing and pharming emails.</li> </ul>					
Tasks	<ul> <li>Evaluate the digital footprint of two candidates for a job.</li> </ul>					
	Research your own digital footprint					
	Create and present a cyber bullying presentation					
	Curriculum Hinterland					
"This provides essential co	ntext and relevance to support the overall narrative of our core curriculum"					
"If, in certain subjects, for t	he purposes of teaching, we reduce the curriculum to just the core, we may					
	make it harder to teach, and at worst, we kill it."					
	(Edited Quote) Christine Counsell					
Interdisciplinary	Presentation skills (drama)					
Knowledge						
Real World Connections	•Using the internet responsibly					
and Authenticity	Using social media safely and					
Personal Development						
	Students learn about online dangers and how to prevent them					





#### HT 2: Networks

HT 2: Networks	Core Curriculum						
"The core is like a residue – the things that stay, the things that can be captured as proposition. Often,							
such things need to be committed to memory."							
Christine Counsell							
Builds on Computer systems and networks in the Key stage 2 computing curriculum							
Retrieval opportunities							
Substantive Knowledge	<ul> <li>Define what a computer network is and explain how data is transmitted</li> </ul>						
Facts, figures, dates etc	between computers across networks						
	<ul> <li>Define 'protocol' and provide examples of non-networking protocols</li> <li>List examples of the hardware necessary for connecting devices to networks</li> </ul>						
	Compare wired to wireless connections and list examples of specific						
	technologies currently used to implement such connections						
	<ul> <li>Define 'bandwidth', using the appropriate units for measuring the rate at</li> </ul>						
	which data is transmitted, and discuss familiar examples where						
	bandwidth is important •Define the Internet						
	•Explain how data travels between computers across the internet						
	•Describe key words such as 'packets', and 'addressing'						
	•Explain the difference between the internet, its services, and the World Wide						
	Web						
	<ul> <li>Describe how services are provided over the internet</li> <li>List some of these services and the context in which they are used</li> </ul>						
	•Explain the term 'connectivity' as the capacity for connected devices						
	('Internet of Things') to collect and share information about me with or						
	without my knowledge (including microphones, cameras, and						
	geolocation)						
	•Describe how internet-connected devices can affect me Describe components (servers, browsers, pages, HTTP and HTTPS protocols, etc.) and						
how they work together							
Procedural, Experimental	Create virtual networks using network hardware						
and Disciplinary							
Knowledge							
(Skills to develop,							
experience and practice)							
Next Steps	Year 8 Computer Systems						
Summative Assessment	Pupils will be assessed on this topic as part of their DC1, DC2						
	& DC3 formal assessments for Computer Studies. • Creating your own virtual network						
Independent Learning Tasks	Independent research						
10363	Answering comprehensive questions						
	Educational videos about the Internet architecture						
	Curriculum Hinterland						
	ontext and relevance to support the overall narrative of our core curriculum"						
"If, in certain subjects, for i	the purposes of teaching, we reduce the curriculum to just the core, we may						
	make it harder to teach, and at worst, we kill it."						
	(Edited Quote) Christine Counsell • Analysing the architecture of the internet on world maps (Geography)						
Interdisciplinary Knowledge	<ul> <li>Analysing the architecture of the internet of world maps (Geography)</li> <li>Investigating the environmental impact of the Internet (Geography)</li> </ul>						
Knowledge	Problem Solving (Mathematics)						
Real World Connections	<ul> <li>Explain the term 'connectivity' as the capacity for connected devices</li> </ul>						
and Authenticity	('internet of things') to collect and share information about me with or						
	without my knowledge (including microphones, cameras and						
geolocation).							
	Describe the impact of internet-connected devices.						
	Investigate how the internet is censored in some countries and not everyone's experience is the same.						





### HT 3: Media

Core Curriculum							
"The core is like a residue – the things that stay, the things that can be captured as proposition. Often,							
such things need to be committed to memory."							
Christine Counsell							
Builds on Information Technology and digital literacy in the Key stage 2 curriculum							
Retrieval opportunities	Retrieval opportunities						
Substantive Knowledge         • Describe the term creative commons							
Facts, figures, dates etc	<ul> <li>Explain the term credible in relation to news sources</li> </ul>						
	Acknowledge the impact of copyright and the laws that surround it						
Procedural, Experimental	<ul> <li>Select the most appropriate software to use to complete a task</li> </ul>						
and Disciplinary	<ul> <li>Identify the key features of a word processor</li> </ul>						
Knowledge	<ul> <li>Apply the key features of a word processor to format a document</li> </ul>						
(Skills to develop,	Select appropriate images for a given context						
experience and practice)	<ul> <li>Apply appropriate formatting techniques</li> <li>Demonstrate an understanding of licensing issues involving online content by</li> </ul>						
	•Applying appropriate Creative Commons licences						
	•Demonstrate the ability to credit the original source of an image						
	Construct a blog using appropriate software						
	•Create content for a blog based on credible sources						
	<ul> <li>Apply referencing techniques that credit authors appropriately</li> </ul>						
	Design the layout of the content to make it suitable for the audience						
Next Steps	•Year 8 Media						
	KS4 ICT – Referencing sources for coursework content						
Summative Assessment	Pupils will be assessed on this topic as part of their DC1, DC2						
	& DC3 formal assessments for Computer Studies.						
Independent Learning	Constructing a blog using appropriate software						
Tasks	Apply referencing techniques that credit authors appropriately     Applying appropriate Creative Commons licenses						
	<ul> <li>Applying appropriate Creative Commons licences</li> <li>Select appropriate images for a given context</li> </ul>						
	Select the most appropriate software to use to complete a task						
	Identify the key features of a word processor						
	Apply the key features of a word processor to format a document						
	Curriculum Hinterland						
"This provides essential co	ntext and relevance to support the overall narrative of our core curriculum"						
	he purposes of teaching, we reduce the curriculum to just the core, we may						
,	make it harder to teach, and at worst, we kill it."						
	(Edited Quote) Christine Counsell						
Interdisciplinary	Writing for a blog post (English)						
Knowledge							
Real World Connections	Writing a blog for a real world cause of choice						
and Authenticity	Analysing fake news and credible sources						
Personal Development	Students can research a topic linked to diversity, relationships, beliefs,						
reisonal bevelopment	inclusion, health , protected characteristics and/or fundamental British						
	values.						
	14005.						





### HT 4: Programming A

	Core Curriculum								
"The core is like a residue – the things that stay, the things that can be captured as proposition. Often,									
such things need to be committed to memory."									
	Christine Counsell								
Builds on	Programming in the Key stage 2 curriculum								
Retrieval opportunities									
•Define a variable as a name that refers to data being stored by the									
Facts, figures, dates etc	computer								
	• Recognise that computers follow the control flow of input/process/output								
	<ul> <li>Predict the outcome of a simple sequence that includes variables</li> <li>Trace the values of variables within a sequence</li> </ul>								
	<ul> <li>Trace the values of variables within a sequence</li> <li>Define a condition as an expression that will be evaluated as either true or</li> </ul>								
	false								
	<ul> <li>Identify that selection uses conditions to control the flow of a sequence</li> </ul>								
	Identify where selection statements can be used in a program								
	• Define iteration as a group of instructions that are repeatedly executed								
	Describe the need for iteration								
Procedural, Experimental	<ul> <li>Make a sequence that includes a variable</li> </ul>								
and Disciplinary	<ul> <li>Modify a program to include selection</li> </ul>								
Knowledge	<ul> <li>Create conditions that use comparison operators (&gt;,&lt;,=)</li> </ul>								
(Skills to develop,	Create conditions that use logic operators (and/or/not)								
experience and practice)	<ul> <li>Identify where selection statements can be used in a program that include comparison and logical operators</li> </ul>								
	<ul> <li>Identify where count-controlled iteration can be used in a program</li> </ul>								
	<ul> <li>Implement count-controlled iteration in a program</li> </ul>								
Detect and correct errors in a program (debugging)									
Next Steps         •Year 7 Programming B									
	•Year 8 Programming								
Year 8 App Development									
Summative Assessment	Pupils will be assessed on this topic as part of their DC1, DC2								
	& DC3 formal assessments for Computer Studies.								
Independent Learning	Independently design and apply programming constructs to solve a problem (subroutine, selection, count-controlled iteration, operators, and variables)								
Tasks	Curriculum Hinterland								
"This provides essential co	ntext and relevance to support the overall narrative of our core curriculum"								
	he purposes of teaching, we reduce the curriculum to just the core, we may								
	make it harder to teach, and at worst, we kill it."								
	(Edited Quote) Christine Counsell								
Interdisciplinary	<ul> <li>utilising their skills in maths (numeracy, arithmetic &amp; algebra)</li> </ul>								
Knowledge	<ul> <li>utilising their experiences of problem solving</li> </ul>								
Kilowicuge	utilising their expertise as an interface user (mobile apps, video games,								
	websites).								
Real World Connections	<ul> <li>All employment sectors (Payroll, Stock management, Data</li> </ul>								
and Authenticity	Collection, Validation, Verification, Commerce, Profitability, Tax								
	returns)								
	<ul> <li>Decision-making</li> </ul>								
	Automation / Artificial Intelligence								
Personal Development	The programming community is a very diverse and inclusive employment								
	sector. Programming (problem solving) is often a collaborative process at								
	all skill levels.								





### HT 5: Spreadsheets

Core Curriculum						
"The core is like a residue – the things that stay, the things that can be captured as proposition. Often,						
such things need to be committed to memory."						
	Christine Counsell					
	Builds on Key stage 2 curriculum					
Retrieval opportunities						
Substantive Knowledge	•Explain the difference between data and information					
Facts, figures, dates etc	Explain the difference between primary and secondary sources of data					
Procedural, Experimental	<ul> <li>Identify columns, rows, cells, and cell references in spreadsheet software</li> </ul>					
and Disciplinary	•Use formatting techniques in a spreadsheet					
Knowledge	Use basic formulas with cell references to perform calculations in a					
(Skills to develop,	spreadsheet (+, -, *, /) •Use the autofill tool to replicate cell data					
experience and practice)	•Collect data					
	•Analyse data					
	•Create appropriate charts in a spreadsheet					
	<ul> <li>Use the functions SUM, COUNTA, MAX, and MIN in a spreadsheet</li> </ul>					
	<ul> <li>Use a spreadsheet to sort and filter data</li> </ul>					
	<ul> <li>Use the functions AVERAGE, COUNTIF, and IF in a spreadsheet</li> </ul>					
	Use conditional formatting in a spreadsheet					
Next Steps         KS4 ICT Spreadsheet development						
Summative Assessment Pupils will be assessed on this topic as part of their DC1, DC2						
	& DC3 formal assessments for Computer Studies.					
Independent Learning	<ul> <li>Navigate spreadsheets via rows and columns</li> <li>Locate cell references and customise cells</li> </ul>					
Tasks	Locate cell referices and customise cells     Use autofill					
	Apply formulae and functions					
	Use conditional formatting					
	Curriculum Hinterland					
"This provides essential co	ntext and relevance to support the overall narrative of our core curriculum"					
· · · · · · · · · · · · · · · · · · ·	he purposes of teaching, we reduce the curriculum to just the core, we may					
,	make it harder to teach, and at worst, we kill it."					
	(Edited Quote) Christine Counsell					
Interdisciplinary	Cell references, functions and formulae (Mathematics)					
Knowledge						
Real World Connections	•Data collection and ethics.					
and Authenticity	All employment sectors (Payroll, Stock management, Data Collection,					
	Validation, Verification, Commerce, Profitability, Tax returns)					
Personal Development						





### HT 6: Programming B

	Core Curriculum						
"The core is like a residue	- the things that stay, the things that can be captured as proposition. Often,						
	such things need to be committed to memory."						
	Christine Counsell						
Builds on	<ul> <li>Programming in the Key stage 2 curriculum</li> </ul>						
Retrieval opportunities	Programming A						
Substantive Knowledge	<ul> <li>Define a subroutine as a group of instructions that will run when called by</li> </ul>						
Facts, figures, dates etc	the main program or other subroutines						
-	Define decomposition as breaking a problem down into smaller, more						
manageable subproblems							
	•Evaluate which type of iteration is required in a program						
	• Define a list as a collection of related elements that are referred to by a						
	single name						
	Describe the need for lists						
Procedural, Experimental	Identify where condition-controlled iteration can be used in a program						
and Disciplinary	•Identify how subroutines can be used for decomposition						
Knowledge	<ul> <li>Implement condition-controlled iteration in a program</li> </ul>						
(Skills to develop,	<ul> <li>Identify when lists can be used in a program</li> </ul>						
experience and practice)	•Use a list						
experience and practicely	Decompose a larger problem into smaller subproblems						
	Apply appropriate constructs to solve a problem						
Next Steps	•Year 8 Programming Year 8 App Development						
Summative Assessment	Pupils will be assessed on this topic as part of their DC1, DC2						
Sommanive Assessment	& DC3 formal assessments for Computer Studies.						
Independent Learning	Learners are given a scenario to create a translation quiz for a Modern Foreign						
Tasks	Languages teacher. The learners will decompose the problem and start to build a						
	Scratch program to meet the requirements.						
	This is a pair programming project that takes place over two lessons; pairs will						
	develop their programs to differing levels. A rubric is to be used for peer- or self- assessment to check progress. Extension activities allow learners to explore more						
	challenging aspects of the solution. In Lesson 12, learners will be given a multiple-						
	choice quiz as a formal final assessment.						
	Curriculum Hinterland						
"This provides essential co	ntext and relevance to support the overall narrative of our core curriculum"						
•	he purposes of teaching, we reduce the curriculum to just the core, we may						
	make it harder to teach, and at worst, we kill it."						
	(Edited Quote) Christine Counsell						
Interdisciplinary	<ul> <li>utilising their skills in maths (numeracy, arithmetic &amp; algebra)</li> </ul>						
Knowledge	<ul> <li>utilising their experiences of problem solving</li> </ul>						
	utilising their expertise as an interface user (mobile apps, video games,						
	websites).						
Real World Connections	<ul> <li>websites).</li> <li>All employment sectors (Payroll, Stock management, Data</li> </ul>						
Real World Connections and Authenticity	<ul> <li>All employment sectors (Payroll, Stock management, Data</li> </ul>						
Real World Connections and Authenticity	<ul> <li>All employment sectors (Payroll, Stock management, Data Collection, Validation, Verification, Commerce, Profitability, Tax</li> </ul>						
	<ul> <li>All employment sectors (Payroll, Stock management, Data Collection, Validation, Verification, Commerce, Profitability, Tax returns)</li> </ul>						
	<ul> <li>All employment sectors (Payroll, Stock management, Data Collection, Validation, Verification, Commerce, Profitability, Tax returns)</li> <li>Decision-making</li> </ul>						
	<ul> <li>All employment sectors (Payroll, Stock management, Data Collection, Validation, Verification, Commerce, Profitability, Tax returns)</li> </ul>						





# Year 7 Alternative Learning Provision (ALP)

# HT 1 : Respect

	Core Curriculum					
"The core is like a residue – the things that stay, the things that can be captured as proposition. Often,						
such things need to be committed to memory." Christine Counsell						
Builds on		Using technolo	bgy safely, respectfully a	nd responsibly		
Retrieval opportur	nities		cceptable/unacceptab			
	inics	Identifying a ro	ange of ways to report c	oncerns about content	and contact	
Substantive Knowle	edge		is Personal data?			
Facts, figures, date	s etc		t of our digital footprint			
			oncept of social meala p Computer Virus'	olatforms, posting, sharin	9	
Procedural, Experim	pental		operating system and sc	oftware skills		
and Disciplinar			ntation skills			
Knowledge	<b>`</b>	Using email				
(Skills to develop	ο,					
experience and pra						
Next Steps		•Y8 Me				
Summative Assess		Y8 Web Devel	opment ssessed on this topic as p	part of their DC1 DC2		
Summative Assessi	ment		assessments for Comput			
Independent Lear	ning	<ul> <li>Identit</li> </ul>	y physical dangers in a	computer room		
Tasks			y phishing, smishing and			
			ate the digital tootprint c rch your own digital foo	of two candidates for a ju	ob	
			esent a cyber bullying p	•		
			Curriculum Hinterland			
"This provides esse	ntial co	ntext and rele	vance to support the	overall narrative of ou	ır core curriculum"	
"If, in certain subjec	cts, for t			e the curriculum to jus	t the core, we may	
			er to teach, and at wo			
			d Quote) Christine Co	unsell		
Interdisciplinar	у	•Preser ICT Skills – usec	ntation skills (drama) Lin all subjects			
Knowledge Real World Connec	tions		the internet responsibly			
and Authenticit			Social media safely and			
	У	Using the internet responsibly				
			edia safely and			
Personal Developr	nent		ws students to work collaboratively.			
			dents learn about online dangers and how to prevent them. wws students to work collaboratively.			
			n about online dangers and how to prevent them			
#1 Visuals	#2 Or	ganisational	#3 Communication	#4 Consistency	#5 Behaviour	
		Support			Management	
Colours		ence starters	<ul> <li>speak like a</li> </ul>	Routine – Class	• Be positive.	
backgrounds: • Vocab building		champion.	Notebook / 10 fast	<ul> <li>Praise the work</li> <li>and affort</li> </ul>		
check, teach • Teach Spelling reading ruler. grammar chec			<ul> <li>Repeat instructions –</li> </ul>	<ul> <li>fingers</li> <li>MERITS / PRAISE –</li> </ul>	<ul><li>and effort.</li><li>Structured</li></ul>	
<ul> <li>Broken down</li> </ul>	9.01		check	live ClassCharts	movement breaks	
numbered			understanding.	<ul> <li>Timed tasks – keep</li> </ul>	as part of a task	
instructions.			• I do – We do – you	pace	Understand	
Reading age:     chack			do		<ul><li>triggers.</li><li>Use distraction</li></ul>	
<ul><li>check</li><li>KEY WORD FOCUS</li></ul>					<ul> <li>Use distraction and offer a way</li> </ul>	
					out	
			-			





# HT 2: Networks (KS2 Start)

IIThe core is like or							
"The core is like a r	"The core is like a residue – the things that stay, the things that can be captured as proposition. Often, such things need to be committed to memory."						
Christine Counsell							
Builds on		Respect, use	of computers and co	ommunication			
Retrieval opportur	nities	KS2 networki	ng				
Substantive Knowle			the importance of inte				
Facts, figures, date	s etc			transferred using agree			
			-	evices have addresses			
				ers use addresses to ac			
		<ul> <li>To recognise how data is transferred across the internet.</li> <li>I can identify and explain the main parts of a data packet.</li> </ul>					
			-	ansferred over the inte			
Procedural, Experim		• To explain	how sharing informati	ion online can help pe	eople to work		
and Disciplinar	у	together.					
Knowledge	~		0	ess shared files stored o			
(Skills to develop experience and pra				the internet in differen et allows different mec			
experience and pro	icheej		e different ways of wa				
			•	of working together or	nline.		
		o I can re	ecognise that working	together on the inter	net can be public or		
		private					
		<ul> <li>I can e</li> <li>Y8 Networks</li> </ul>	xplain how the interne	et enables effective c	ollaboration		
Next Steps							
Summative Assess	ment	Pupils will be assessed on this topic as part of their DC1, DC2 & DC3 formal assessments for Computer Studies.					
Independent Lear	ning		given throughout the less				
Tasks							
(( <b>T</b> ), ', , , , , , , , , , , , , , , , , ,			Curriculum Hinterland				
				overall narrative of ou e the curriculum to jus			
	C13, 101 1		er to teach, and at wo		r me core, we may		
			d Quote) Christine Co				
Interdisciplinar	у						
Knowledge							
Real World Connec		I can describe and assess the benefits and the potential risks of sharing					
and Authenticity Personal Development		<ul> <li>I can assess and justify when it is acceptable to use the work of others.</li> </ul>					
	nem			that is permitted to be			
#1 Visuals	#2 Or	ganisational	#3 Communication	#4 Consistency	#5 Behaviour		
	Support Management						
<ul> <li>Broken down numbered</li> </ul>		ence starters	<ul> <li>Speak like a shampion</li> </ul>	Routine – Class	<ul><li>Be positive.</li><li>Praise the work</li></ul>		
instructions.		ab building Spelling /	<ul><li>champion.</li><li>Repeat</li></ul>	Notebook / 10 fast fingers	<ul> <li>Praise the work and effort.</li> </ul>		
Reading age:		ar check	instructions –	MERITS / PRAISE –	Structured		
check cł			check	live ClassCharts	movement breaks		
KEY WORD FOCUS			<ul> <li>understanding.</li> <li>I do – We do – you</li> </ul>	<ul> <li>Timed tasks – keep pace</li> </ul>	<ul><li>as part of a task</li><li>Use distraction</li></ul>		
	do d						
					out		





### HT 3: Media (KS2 start)

	,		Core Curriculum			
"The core is like a re	"The core is like a residue – the things that stay, the things that can be captured as proposition. Often,					
	such things need to be committed to memory."					
			Christine Counsell			
Builds on		Respect – use	of technology to comm	unicate responsibly		
Retrieval opportunit			iew an existing website a	and consider its structure	<u>`````````````````````````````````````</u>	
Substantive Knowled Facts, figures, dates	-	•10164	I can explore		5.	
rucis, liguies, uules	eic			the different types of m	edia used on websites.	
I know that websites are written in HTML.						
		•To consider the ownership and use of images (copyright)				
	<ul> <li>I can say why I should use copyright-free images.</li> <li>I can find copyright-free images.</li> </ul>					
			what is meant by the te	erm 'fair use'		
Procedural, Experime		•To plc	in the features of a web			
and Disciplinary				nise the common feature st media to include on m		
Knowledge (Skills to develop)				web page layout that :		
experience and prac		•To rec	ognise the need to prev	view pages.		
experience and prac				ontent to my own web p		
				w what my web page lo ate what my web page l		
			devices and	l suggest/make edits.		
		•To out	lline the need for a navig			
				n what a navigation patl be why navigation paths		
				multiple web pages and		
		hyperlinks.				
		<ul> <li>To recognise the implications of linking to content owned by other people.</li> <li>I can explain the implication of linking to content owned</li> </ul>				
		by others.				
				hyperlinks to link to othe	er people's work.	
		I can evaluate the user experience of a website				
Next Steps		Y8 Web Development				
Summative Assessm		Assessment through task (Rubric) as well as through DART assessment questions				
Independent Learni Tasks	ing	Independent work is throughout the unit but also as part of a mini project to test understanding				
			Curriculum Hinterland			
			vance to support the			
	15, 101 11		f teaching, we reduce er to teach, and at wo		i me core, we may	
			d Quote) Christine Co	•		
Interdisciplinary Knowledge		Writing composition: Identifying the audience for and purpose of the writing, selecting the appropriate form, and using other similar writing as models for their own				
Real World Connect	ions		relationships			
and Authenticity		• Manag	ing information online			
Personal Developm	ent	Copyrie	ght and ownership			
		ganisational upport	#3 Communication	#4 Consistency	#5 Behaviour Management	
Broken down		ence starters	• Speak like a	Routine – Class	Be positive.	
numbered		ab building	champion.	Notebook / 10 fast	<ul> <li>Praise the work</li> </ul>	
<ul><li>instructions.</li><li>Reading age:</li></ul>		h Spelling / Imar check	<ul> <li>Repeat instructions –</li> </ul>	fingers  • MERITS / PRAISE –	<ul><li>and effort.</li><li>Structured</li></ul>	
				<ul> <li>shochined movement breaks</li> </ul>		
KEY WORD FOCUS			understanding.	• Timed tasks – keep	as part of a task	
			• I do – We do – you	pace	Use distraction	
			do		and offer a way out	
L			1	•	1	





# HT 4: Programming A (KS2 start)

	Core Curriculum						
"The core is like a r	"The core is like a residue – the things that stay, the things that can be captured as proposition. Often,						
	such things need to be committed to memory."						
	Christine Counsell						
Builds on		KS2 Algorithm					
Retrieval opportur		Spreadsheet					
Substantive Knowle			variable' as something				
Facts, figures, date	es etc		, ,	nformation that is vari			
			I can explain that the way a variable changes can be defined				
		I can identify that variables can hold numbers or letters					
		To explain why a variable is used in a program					
			I can identify a program variable as a placeholder in memory for a				
		single value	avalain that a variable	la has a name and a	(alua		
			-	le has a name and a v alue of a variable can			
Procedural, Experim	ontal		ow to improve a game		be chunged		
and Disciplinar				ogram to change a v	ariable		
Knowledge	у			t in a program to set a			
(Skills to develop	n			alue of a variable can			
experience and pra		program			80 030 a 87 a		
	,		project that builds on a	a aiven example			
			choose the artwork fo				
			create algorithms for				
		• I can	explain my design ch	oices			
		To use my de	esign to create a proje	ect			
			create the artwork fo				
				identifies the role of a	variable		
			test the code that I he	ave written			
		To evaluate my project					
		I can identify ways that my game could be improved					
		<ul> <li>I can use variables to extend my game</li> <li>I can share my game with others</li> </ul>					
Next Stere		<ul> <li>I Can</li> <li>Micro:Bit progra</li> </ul>		others			
Next Steps Summative Assess	mant		-				
		Assessed as part of DC3 DART					
Independent Lear	ning	Creating a project					
Tasks			Curriculum Hinterland				
"This provides esse	ntial			overall narrative of ou	Ir core curriculum"		
-				e the curriculum to jus			
			er to teach, and at wo		The core, we may		
			d Quote) Christine Co				
Interdisciplinar	у	Logic					
Knowledge		Basic math					
Real World Connec	ctions		al world programming	concepts			
and Authenticit	у		mes students may be	-			
#1 Visuals		ganisational Support	#3 Communication	#4 Consistency	#5 Behaviour Management		
Broken down		ab building	• Speak like a	Routine – Class	Be positive.		
numbered	Teach	Spelling /	champion.	Notebook / 10 fast	Praise the work		
instructions.	gramm	ar check	Repeat	fingers	and effort.		
KEY WORD FOCUS			instructions –	MERITS / PRAISE –	Use distraction		
			check understanding.	<ul> <li>live ClassCharts</li> <li>Timed tasks –</li> </ul>	and offer a way out		
			<ul> <li>I do – We do – you</li> </ul>	<ul> <li>Innea lasks – keep pace</li> </ul>			
			do				





### HT 5: Spreadsheets (KS2 start)

"The core is like a r	residue -		Core Curriculum at stay, the things that eed to be committed		proposition. Often,	
Duilde en		KSO	Christine Counsell			
<b>Builds on</b> Retrieval opportur	aitios	KS2				
		To ovolain th	at formulas can be us	ad to produce calcul	atod data	
Substantive Knowle Facts, figures, date	-	<ul> <li>I can</li> <li>I can</li> <li>I can</li> <li>To choose su</li> <li>I can</li> <li>I can</li> </ul>	<ul> <li>I can explain which data types can be used in calculations</li> <li>I can construct a formula in a spreadsheet</li> <li>I can identify that changing inputs changes outputs</li> <li>To choose suitable ways to present data</li> <li>I can produce a chart</li> <li>I can use a chart to show the answer to a question</li> <li>I can suggest when to use a table or chart</li> </ul>			
Procedural, Experin	nental	To create a c	data set in a spreadsh	eet		
and Disciplinar			collect data			
Knowledge	•	• I can	suggest how to struct	ure my data		
(Skills to develo	-		enter data into a spre			
experience and pro	ictice)		ata set in a spreadshee			
			explain what an item choose an appropria			
			apply an appropriate			
			nulas to data			
			calculate data using			
			create a formula which	-		
			apply a formula to m		ating it	
			spreadsheet to plan a use a spreadsheet to			
			explain why data sho	-		
			apply a formula to co		ed to answer	
		questions				
Next Steps		Spreadsheet				
Summative Assess		•	oart of DAR cycle			
Independent Lear Tasks	ning	To create a s	spreadsheet			
			Curriculum Hinterland			
		he purposes o	vance to support the f teaching, we reduce er to teach, and at wo	e the curriculum to jus		
		(Edited	d Quote) Christine Co	unsell		
Interdisciplinar	У	Basic math	<b>c</b>			
Knowledge			Secondary data	ating data to build	nanicational deille	
Real World Connec and Authenticit		<ul> <li>Event plan</li> </ul>	nning focus and preser	ning aata to build org	yanısanonai skilis	
#1 Visuals	#2 Or	ganisational	#3 Communication	#4 Consistency	#5 Behaviour	
Dura la su di s		Support	Created III -	Deviting Cl	Management	
<ul> <li>Broken down numbered</li> </ul>		ence starters ab building	<ul> <li>Speak like a champion.</li> </ul>	<ul> <li>Routine – Class Notebook / 10 fast</li> </ul>	<ul><li>Be positive.</li><li>Praise the work</li></ul>	
instructions.		Spelling /	<ul><li>Repeat</li></ul>	fingers	and effort.	
Reading age:		ar check	instructions –	MERITS / PRAISE -	Structured	
<ul><li>check</li><li>KEY WORD FOCUS</li></ul>			check understanding.	live ClassCharts	movement breaks as part of a task	
			<ul> <li>I do – We do – you</li> </ul>	<ul> <li>Timed tasks – keep pace</li> </ul>	Use distraction	
			do		and offer a way	
					out	





### HT 6: Programming B (KS2 start) Micro:Bit

"The core is like a r	residue -		<b>Core Curriculum</b> at stay, the things that eed to be committed Christine Counsell		proposition. Often,
Builds on		Programming			
Retrieval opportur					
Substantive Knowle Facts, figures, date		<ul> <li>I can</li> <li>I can</li> <li>a program</li> </ul>	at selection can contr identify examples of c use a variable in an if determine the flow of	conditions in the real v , then, else statement	vorld to select the flow of
Procedural, Experin	nental		program to run on a c		
and Disciplinar Knowledge (Skills to develo experience and pro	<b>у</b> р,	<ul> <li>I can apply my knowledge of programming to a new environment</li> <li>I can test my program on an emulator</li> <li>I can transfer my program to a controllable device</li> <li>To update a variable with a user input</li> <li>I can use a condition to change a variable</li> <li>I can experiment with different physical inputs</li> <li>I can explain that checking a variable doesn't change its value</li> <li>To use an conditional statement to compare a variable to a value</li> <li>I can use an operand (e.g. &lt;&gt;=) in an if, then statement</li> <li>I can explain the importance of the order of conditions in else, if statements</li> <li>I can modify a program to achieve a different outcome</li> <li>To design a project that uses inputs and outputs on a controllable device</li> <li>I can design the algorithm for my project</li> <li>I can design the program flow for my project</li> <li>To develop a program to use inputs and outputs on a controllable device</li> <li>I can test my program to use inputs and outputs on a controllable device</li> <li>I can design the program flow for my project</li> <li>I can design the program flow for my project</li> <li>I can create a program based on my design</li> <li>I can test my program against my design</li> </ul>			
Next Steps		Programming	<u>use a range of appro</u> g Y8		
Summative Assess	ment	DART assessn	nent cycle		
Independent Lear Tasks	ning	Create a ser	ies of programs		
•	cts, for t y ctions y	ntext and rele he purposes o make it hard (Edited Sensors linkin Step counter	Curriculum Hinterland vance to support the f teaching, we reduce er to teach, and at wo d Quote) Christine Cou g to geography and s <u>- PE</u> applications for progr	e the curriculum to jus orst, we kill it." unsell cience.	
#1 Visuals	#2 Or	ganisational	#3 Communication	#4 Consistency	#5 Behaviour
<ul> <li>Broken down numbered instructions.</li> <li>Reading age: check</li> <li>KEY WORD FOCUS</li> </ul>	Sente     Voce     Teach S	ab building Spelling / ar check	<ul> <li>Speak like a champion.</li> <li>Repeat instructions – check understanding.</li> <li>I do – We do – you do</li> </ul>	<ul> <li>Routine – Class Notebook / 10 fast fingers</li> <li>MERITS / PRAISE – live ClassCharts</li> <li>Timed tasks – keep pace</li> </ul>	Management• Be positive.• Praise the work and effort.• Structured movement breaks as part of a task• Use distraction and offer a way out





# Year 8 Computer Studies

#### HT 1: Media

"The core is like a residue – the things that stay, the things that can be captured as proposition. Often, such things need to be committed to memory."         Builds on       V7 Media. Images, copyright         Retrieval opportunities       Explain what vector graphics are         Procedural, Experimental and Disciplinary       Draw basic shapes (rectangle, ellipse, polygon, star) with different properties (fill and stroke, shape-specific attributes)         Manipulate individual objects (select, move, resize, rotate, duplicate, flip, 2-order)       Manipulate individual objects (select, group/ungroup, align, distribute)         Combine multiple tools and techniques to create a vector graphic design       ICT Y10 Design a Logo Task         Summative Assessment       Multi Choice Questions         Create an illustration, logo or icon pack       Create an alloustration, logo or icon pack         "This provides essential context and relevance to support the overall narrative of our core curriculum"       Iff. in certain subjects, for the purposes of teaching, we reduce the curriculum to just the core, we may make it harder to teach, and at worst, we kill it."         Interdisciplinary       Union, difference, size         Ret World Connections       Create a logo and real-world logos		Core Curriculum
Christine Counsell           Builds on Retrieval opportunities         Y7 Media. Images, copyright           Substantive Knowledge Facts, figures, dates etc         Explain what vector graphics are Provide examples where using vector graphics would be appropriate           Procedural, Experimental and Disciplinary Knowledge (Skills to develop, experience and practice)         Draw basic shapes (rectangle, ellipse, polygon, star) with different properties (fill and stroke, shape- specific attributes)           Manipulate individual objects (select, move, resize, rotate, duplicate, flip, z-order) Manipulate individual objects (select, group/ungroup, align, distribute) Combine paths by applying operations (union, difference, intersection) Convert objects to paths Draw paths Edit path nodes Combine multiple tools and techniques to create a vector graphic design           Next Steps         ICT Y10 Design a Logo Task           Summative Assessment Tasks         Multi Choice Questions Create an illustration, logo or icon pack           Curriculum Hinterland         "This provides essential context and relevance to support the overall narrative of our core curriculum" "If, in certain subjects, for the purposes of teaching, we reduce the curriculum to just the core, we may make it harder to teach, and at worst, we kill it." (Edited Quote) Christine Counsell           Interdisciplinary Knowledge         Union, difference, size           Real World Connections and Authenticity         Create a logo and real-world logos	"The core is like a residue -	- the things that stay, the things that can be captured as proposition. Often,
Builds on Retrieval opportunities         Y7 Media. Images, copyright           Substantive Knowledge Facts, figures, dates etc         Explain what vector graphics are Provide examples where using vector graphics would be appropriate           Procedural, Experimental and Disciplinary Knowledge (Skills to develop, experience and practice)         Draw basic shapes (rectangle, ellipse, polygon, star) with different properties (fill and stroke, shape- specific attributes)           Manipulate individual objects (select, move, resize, rotate, duplicate, flip, z-order) Manipulate groups of objects (select, group/ungroup, align, distribute) Combine paths by applying operations (union, difference, intersection) Convert objects to paths Draw paths Edit path nodes Combine multiple tools and techniques to create a vector graphic design           Next Steps         ICT Y10 Design a Logo Task           Summative Assessment Tasks         Curriculum Hinterland           "This provides essential context and relevance to support the overall narrative of our core curriculum" "If, in certain subjects, for the purposes of feaching, we reduce the curriculum to just the core, we may make it harder to teach, and at worst, we kill it." (Edited Quote) Christine Counsell           Interdisciplinary Knowledge         Union, difference, size           Real World Connections and Authenticity         Create a logo and real-world logos		such things need to be committed to memory."
Retrieval opportunities         Explain what vector graphics are Procts, figures, dates etc           Procedural, Experimental and Disciplinary Knowledge (Skills to develop, experience and practice)         Draw basic shapes (rectangle, ellipse, polygon, star) with different properties (fill and stroke, shape- specific attributes)           Manipulate individual objects (select, move, resize, rotate, duplicate, flip, z-order) Manipulate groups of objects (select, group/ungroup, align, distribute) Combine paths by applying operations (union, difference, intersection) Convert objects to paths Draw paths Edit path nodes Combine multiple tools and techniques to create a vector graphic design           Next Steps         ICT Y10 Design a Logo Task           Summative Assessment Tasks         Multi Choice Questions Create an illustration, logo or icon pack           "This provides essential context and relevance to support the overall narrative of our core curriculum" "If, in certain subjects, for the purposes of teaching, we reduce the curriculum to just the core, we may make it harder to teach, and at worst, we kill it." [Edited Quote] Christine Counsell           Union, difference, size         Union, difference, size		Christine Counsell
Substantive Knowledge Facts, figures, dates etc         Explain what vector graphics are Provide examples where using vector graphics would be appropriate           Procedural, Experimental and Disciplinary Knowledge (Skills to develop, experience and practice)         Draw basic shapes (rectangle, ellipse, polygon, star) with different properties (fill and stroke, shape- specific attributes)           Manipulate individual objects (select, move, resize, rotate, duplicate, filip, z-order) Manipulate groups of objects (select, group/ungroup, align, distribute) Combine paths by applying operations (union, difference, intersection) Convert objects to paths Draw paths Edit path nodes Combine multiple tools and techniques to create a vector graphic design           Next Steps         ICT Y10 Design a Logo Task           Summative Assessment Tasks         Multi Choice Questions Create an illustration, logo or icon pack           "This provides essential context and relevance to support the overall narrative of our core curriculum" "If, in certain subjects, for the purposes of teaching, we reduce the curriculum to just the core, we may make it harder to teach, and at worst, we kill it." [Edited Quote] Christine Counsell           Interdisciplinary Knowledge         Union, difference, size           Real World Connections and Authenticity         Create a logo and real-world logos	Builds on	Y7 Media. Images, copyright
Facts, figures, dates etc.       Provide examples where using vector graphics would be appropriate         Procedural, Experimental and Disciplinary Knowledge       Draw basic shapes (rectangle, ellipse, polygon, star) with different properties (fill and stroke, shape-specific attributes)         Manipulate individual objects (select, move, resize, rotate, duplicate, flip, z-order)         Manipulate groups of objects (select, group/ungroup, align, distribute)         Convert objects to paths       Draw paths         Edit path nodes       Convert objects to paths         Summative Assessment       Multi Choice Questions         Multi Choice Questions       Create an illustration, logo or icon pack         "This provides essential context and relevance to support the overall narrative of our core curriculum"       "Icatific Quote)       Will difference, size         Interdisciplinary       Union, difference, size       Union, difference, size       Weill it."         Read World Connections and Authenticity       Create a logo and real-world logos       Create a logo and real-world logos	Retrieval opportunities	
Procedural, Experimental and Disciplinary Knowledge (Skills to develop, experience and practice)       Draw basic shapes (rectangle, ellipse, polygon, star) with different properties (fill and stroke, shape- specific attributes)         Manipulate individual objects (select, move, resize, rotate, duplicate, filip, z-order) Manipulate groups of objects (select, group/ungroup, align, distribute)         Combine paths by applying operations (union, difference, intersection)         Convert objects to paths         Draw paths         Edit path nodes         Combine multiple tools and techniques to create a vector graphic design         ICT Y10 Design a Logo Task         Summative Assessment         Multi Choice Questions         Create an illustration, logo or icon pack         Create shapes and complete project         "This provides essential context and relevance to support the overall narrative of our core curriculum"         "If, in certain subjects, for the purposes of feaching, we reduce the curriculum to just the core, we may make it harder to teach, and at worst, we kill it." (Edited Quote) Christine Counsell         Union, difference, size         Real World Connections and Authenticity       Create a logo and real-world logos	Substantive Knowledge	Explain what vector graphics are
and Disciplinary Knowledge (Skills to develop, experience and practice)specific attributes) Manipulate individual objects (select, move, resize, rotate, duplicate, flip, z-order) Manipulate groups of objects (select, group/ungroup, align, distribute) Combine paths by applying operations (union, difference, intersection) Convert objects to paths Draw paths Edit path nodes Combine multiple tools and techniques to create a vector graphic designNext StepsICT Y10 Design a Logo TaskSummative AssessmentMulti Choice Questions Create an illustration, logo or icon packIndependent Learning TasksCurriculum Hinterland"This provides essential context and relevance to support the overall narrative of our core curriculum" "If, in certain subjects, for the purposes of teaching, we reduce the curriculum to just the core, we may make it harder to teach, and at worst, we kill it." (Edited Quote) Christine CounsellInterdisciplinary KnowledgeUnion, difference, sizeReal World Connections and AuthenticityCreate a logo and real-world logos	Facts, figures, dates etc	Provide examples where using vector graphics would be appropriate
KnowledgeManipulate individual objects (select, move, resize, rotate, duplicate, flip, z-order) Manipulate groups of objects (select, group/ungroup, align, distribute) Combine paths by applying operations (union, difference, intersection) Convert objects to paths Draw paths Edit path nodes Combine multiple tools and techniques to create a vector graphic designNext StepsICT Y10 Design a Logo TaskSummative Assessment TasksMulti Choice Questions Create an illustration, logo or icon packIndependent Learning TasksCurriculum Hinterland"This provides essential context and relevance to support the overall narrative of our core curriculum" (Edited Quote) Christine CounsellInterdisciplinary KnowledgeUnion, difference, sizeInterdisciplinary KnowledgeUnion, difference, size	Procedural, Experimental	Draw basic shapes (rectangle, ellipse, polygon, star) with different properties (fill and stroke, shape-
Knowledge       Manipulate groups of objects (select, group/ungroup, align, distribute)         (Skills to develop, experience and practice)       Combine paths by applying operations (union, difference, intersection)         Convert objects to paths       Draw paths         Edit path nodes       Combine multiple tools and techniques to create a vector graphic design         Next Steps       ICT Y10 Design a Logo Task         Summative Assessment       Multi Choice Questions Create an illustration, logo or icon pack         Independent Learning Tasks       Create shapes and complete project         "This provides essential context and relevance to support the overall narrative of our core curriculum" "If, in certain subjects, for the purposes of teaching, we reduce the curriculum to just the core, we may make it harder to teach, and at worst, we kill it." (Edited Quote) Christine Counsell         Interdisciplinary Knowledge       Union, difference, size         Real World Connections and Authenticity       Create a logo and real-world logos	and Disciplinary	, , , , , , , , , , , , , , , , , , , ,
(Skills to develop, experience and practice)Manipulate groups of objects (select, group/ungroup, align, distribute) Combine paths by applying operations (union, difference, intersection) Combine paths by applying operations (union, difference, intersection) Draw paths Edit path nodes Combine multiple tools and techniques to create a vector graphic designNext StepsICT Y10 Design a Logo TaskSummative Assessment Independent Learning TasksMulti Choice Questions Create an illustration, logo or icon packCurriculum Hinterland "This provides essential context and relevance to support the overall narrative of our core curriculum" "If, in certain subjects, for the purposes of teaching, we reduce the curriculum to just the core, we may IEdited Quote] Christine CounsellInterdisciplinary KnowledgeUnion, difference, sizeReal World Connections and AuthenticityCreate a logo and real-world logos	Knowledge	
experience and practice) combine paths by applying operations (union, difference, intersection) convert objects to paths Draw paths Edit path nodes combine multiple tools and techniques to create a vector graphic design Next Steps ICT Y10 Design a Logo Task Summative Assessment Nulti Choice Questions Create an illustration, logo or icon pack Create an illustration, logo or icon pack Create shapes and complete project Create shapes and complete project Create shapes of teaching, we reduce the curriculum to just the core, we may make it harder to teach, and at worst, we kill it." (Edited Quote) Christine Counsell Interdisciplinary Knowledge Real World Connections and Authenticity Create a logo and real-world logos		
Convert objects to paths         Draw paths         Edit path nodes         Combine multiple tools and techniques to create a vector graphic design         Next Steps         ICT Y10 Design a Logo Task         Summative Assessment         Multi Choice Questions         Create an illustration, logo or icon pack         Independent Learning         Tasks         Create shapes and complete project         Create shapes and complete project         "This provides essential context and relevance to support the overall narrative of our core curriculum"         "If, in certain subjects, for the purposes of teaching, we reduce the curriculum to just the core, we may make it harder to teach, and at worst, we kill it."         (Edited Quote) Christine Counsell         Interdisciplinary       Union, difference, size         Knowledge       Create a logo and real-world logos	•	
Edit path nodes Combine multiple tools and techniques to create a vector graphic design         Next Steps       ICT Y10 Design a Logo Task         Summative Assessment       Multi Choice Questions Create an illustration, logo or icon pack         Independent Learning Tasks       Create shapes and complete project         "This provides essential context and relevance to support the overall narrative of our core curriculum" "If, in certain subjects, for the purposes of teaching, we reduce the curriculum to just the core, we may make it harder to teach, and at worst, we kill it." (Edited Quote) Christine Counsell         Interdisciplinary Knowledge       Union, difference, size         Real World Connections and Authenticity       Create a logo and real-world logos		
Combine multiple tools and techniques to create a vector graphic designNext StepsICT Y10 Design a Logo TaskSummative AssessmentMulti Choice Questions Create an illustration, logo or icon packIndependent Learning TasksCreate shapes and complete project"This provides essential context and relevance to support the overall narrative of our core curriculum" "If, in certain subjects, for the purposes of teaching, we reduce the curriculum to just the core, we may make it harder to teach, and at worst, we kill it." (Edited Quote) Christine CounsellInterdisciplinary KnowledgeUnion, difference, sizeReal World Connections and AuthenticityCreate a logo and real-world logos		
Next Steps       ICT Y10 Design a Logo Task         Summative Assessment       Multi Choice Questions Create an illustration, logo or icon pack         Independent Learning Tasks       Create shapes and complete project         "This provides essential context and relevance to support the overall narrative of our core curriculum" "If, in certain subjects, for the purposes of teaching, we reduce the curriculum to just the core, we may make it harder to teach, and at worst, we kill it." (Edited Quote) Christine Counsell         Interdisciplinary Knowledge       Union, difference, size         Real World Connections and Authenticity       Create a logo and real-world logos		·
Summative Assessment       Multi Choice Questions Create an illustration, logo or icon pack         Independent Learning Tasks       Create shapes and complete project         Curriculum Hinterland         "This provides essential context and relevance to support the overall narrative of our core curriculum"         "If, in certain subjects, for the purposes of teaching, we reduce the curriculum to just the core, we may make it harder to teach, and at worst, we kill it." (Edited Quote) Christine Counsell         Interdisciplinary Knowledge       Union, difference, size         Real World Connections and Authenticity       Create a logo and real-world logos		
Create an illustration, logo or icon pack         Independent Learning Tasks       Create shapes and complete project         Curriculum Hinterland         "This provides essential context and relevance to support the overall narrative of our core curriculum"         "If, in certain subjects, for the purposes of teaching, we reduce the curriculum to just the core, we may make it harder to teach, and at worst, we kill it." (Edited Quote) Christine Counsell         Interdisciplinary Knowledge       Union, difference, size         Real World Connections and Authenticity       Create a logo and real-world logos	· · · · · · · · · · · · · · · · · · ·	
Independent Learning Tasks       Create shapes and complete project         Curriculum Hinterland         "This provides essential context and relevance to support the overall narrative of our core curriculum"         "If, in certain subjects, for the purposes of teaching, we reduce the curriculum to just the core, we may make it harder to teach, and at worst, we kill it." (Edited Quote) Christine Counsell         Interdisciplinary Knowledge       Union, difference, size         Real World Connections and Authenticity       Create a logo and real-world logos	Summative Assessment	
Tasks       Curriculum Hinterland         "This provides essential context and relevance to support the overall narrative of our core curriculum"         "If, in certain subjects, for the purposes of teaching, we reduce the curriculum to just the core, we may make it harder to teach, and at worst, we kill it." (Edited Quote) Christine Counsell         Interdisciplinary Knowledge       Union, difference, size         Real World Connections and Authenticity       Create a logo and real-world logos		
Curriculum Hinterland         "This provides essential context and relevance to support the overall narrative of our core curriculum"         "If, in certain subjects, for the purposes of teaching, we reduce the curriculum to just the core, we may make it harder to teach, and at worst, we kill it." (Edited Quote) Christine Counsell         Interdisciplinary Knowledge       Union, difference, size         Real World Connections and Authenticity       Create a logo and real-world logos		Create shapes and complete project
"This provides essential context and relevance to support the overall narrative of our core curriculum" "If, in certain subjects, for the purposes of teaching, we reduce the curriculum to just the core, we may make it harder to teach, and at worst, we kill it." (Edited Quote) Christine Counsell Union, difference, size Real World Connections and Authenticity Create a logo and real-world logos	Tasks	
"If, in certain subjects, for the purposes of teaching, we reduce the curriculum to just the core, we may make it harder to teach, and at worst, we kill it." (Edited Quote) Christine Counsell         Interdisciplinary Knowledge       Union, difference, size         Real World Connections and Authenticity       Create a logo and real-world logos		Curriculum Hinterland
Interdisciplinary       (Edited Quote) Christine Counsell         Interdisciplinary       Union, difference, size         Knowledge       Create a logo and real-world logos	"This provides essential co	ntext and relevance to support the overall narrative of our core curriculum"
(Edited Quote) Christine Counsell         Interdisciplinary       Union, difference, size         Knowledge       Create a logo and real-world logos         Real World Connections       Create a logo and real-world logos	"If, in certain subjects, for t	he purposes of teaching, we reduce the curriculum to just the core, we may
Interdisciplinary       Union, difference, size         Knowledge       Create a logo and real-world logos         Real World Connections       Create a logo and real-world logos		make it harder to teach, and at worst, we kill it."
Interdisciplinary       Union, difference, size         Knowledge       Create a logo and real-world logos         Real World Connections       Create a logo and real-world logos		(Edited Quote) Christine Counsell
Knowledge       Real World Connections and Authenticity     Create a logo and real-world logos	Interdisciplinary	
and Authenticity		
and Authenticity	Real World Connections	Create a logo and real-world logos
Personal Development	and Authenticity	
	Personal Development	



#### HT 2: Computer Systems



HT 2: Computer Systems	
	Core Curriculum
"The core is like a residue	- the things that stay, the things that can be captured as proposition. Often,
	such things need to be committed to memory."
	Christine Counsell
Builds on	Programming – Boolean Logic
Retrieval opportunities	Spreadsheets – Data and Date Types
· ·	Networks – Communicating using binary
Substantive Knowledge	Recall that a general-purpose computing system is a device for executing programs
Facts, figures, dates etc	Recall that a program is a sequence of instructions that specify operations that are to be performed on data
	Explain the difference between a general-purpose computing system and a purpose-built device Describe the function of the hardware components used in computing systems
	Describe how the hardware components used in computing systems work together in order to
	execute programs
	Recall that all computing systems, regardless of form, have a similar structure ('architecture')
	Analyse how the hardware components used in computing systems work together in order to execute programs
	Define what an operating system is, and recall its role in controlling program execution
	Describe the NOT, AND, and OR logical operators, and how they are used to form logical expressions
	Describe how hardware is built out of increasingly complex logic circuits
	Recall that, since hardware is built out of logic circuits, data and instructions alike need to be
	represented using binary digits
	Provide broad definitions of 'artificial intelligence' and 'machine learning'
	Identify examples of artificial intelligence and machine learning in the real world
	Describe the steps involved in training machines to perform tasks (gathering data, training, testing)
	Describe how machine learning differs from traditional programming
	Associate the use of artificial intelligence with moral dilemmas
	Explain the implications of sharing program code
Procedural, Experimental	Use logic gates to construct logic circuits, and associate these with logical operators and expressions
and Disciplinary	
Knowledge	
(Skills to develop,	
experience and practice)	
	Ve Web Development - Realizer Lagia
Next Steps	Y8 Web Development - Boolean Logic Y8 Representations – Binary, Boolean Logic
Summative Assessment	Y8 App development – Boolean Logic Multi choice Questions
Independent Learning	Lesson Tasks
Tasks	
	Curriculum Hinterland
"This provides essential co	ontext and relevance to support the overall narrative of our core curriculum"
"If, in certain subjects, for	the purposes of teaching, we reduce the curriculum to just the core, we may
,,,,,	make it harder to teach, and at worst, we kill it."
	(Edited Quote) Christine Counsell
Interdisciplinary	
	Maths – boolean Logic – Venn Diagrams
Knowledge	PSHE – Moral dilemmas in Al
Real World Connections	Link out to AI industry and computer hardware industry
and Authenticity	
	Moral dilemmas around Al

Page **15** 





#### HT 3: Web Development

	Core Curriculum
"The core is like a residue	- the things that stay, the things that can be captured as proposition. Often,
	such things need to be committed to memory."
	Christine Counsell
Builds on	Y7 Programming
Retrieval opportunities	Y7 Respect
	Y7 Networks
	Y8 Media
Substantive Knowledge	Describe what HTML is
Facts, figures, dates etc	Describe what CSS is
<u> </u>	Assess the benefits of using CSS to style pages instead of in-line formatting
	Describe what a search engine is
	Explain how search engines 'crawl' through the World Wide Web and how they select and rank
	results
	Analyse how search engines select and rank results when searches are made
	Discuss the impact of search technologies and the issues that arise by the way they function and the
Procedural, Experimental	way they are used Use HTML to structure static web pages
	Modify HTML tags using inline styling to improve the appearance of web pages
and Disciplinary	Display images within a web page
Knowledge	Apply HTML tags to construct a web page structure from a provided design
(Skills to develop,	Use CSS to style static web pages
experience and practice)	Use search technologies effectively
	Create hyperlinks to allow users to navigate between multiple web pages
	Implement navigation to complete a functioning website
Next Steps	Y8 App Development
Summative Assessment	Multi Choice Questions
Independent Learning	Creating Websites
Tasks	Searching the web
	Curriculum Hinterland
"This provides essential co	ntext and relevance to support the overall narrative of our core curriculum"
	he purposes of teaching, we reduce the curriculum to just the core, we may
	make it harder to teach, and at worst, we kill it."
	(Edited Quote) Christine Counsell
Interdisciplinary	
Knowledge Real World Connections	Links to real world website development
	בוווגל נס ופמו שטוום שפטלונפ מפיפוסףווופוונ
and Authenticity	
Personal Development	Ability to critically search the web





#### HT 4: Representations

			Core Curriculum		
"The core is like a r	residue -		at stay, the things that		proposition. Often,
		such things ne	eed to be committed	to memory."	
			Christine Counsell		
Builds on		Y8 Computer S	Systems		
Retrieval opportur					
Substantive Knowle		List examples of	•		
Facts, figures, date	es etc		sentations are used to store,		
			s of how different representa		
			cters can be represented as s	equences of symbols and list	examples of character
		coding schemes	s of how symbols are carried	on physical modia	
			ary digits (bits) are, in terms o		gits or letters
			tural numbers are represente		
			s of the different ways that bi		
Procedural, Experim	nental		gth of a representation as the		
and Disciplinar			or length of a sequence of bi		
Knowledge	,	Convert a decima	al number to binary and vice v	versa	-
(Skills to develop	n	Convert betweer	different units and multiples	of representation size	
experience and pra	-				
Next Steps		Y9 Representa	tions		
Summative Assess	ment	Multi Choice C	Questions		
Independent Lear	ning				
Tasks	illing				
			Curriculum Hinterland		
"This provides esse	ential co	ntext and rele	vance to support the o	overall narrative of ou	ır core curriculum"
			f teaching, we reduce		
			er to teach, and at wo		· · · · · · · · · · · · · · · · · · ·
		(Edited	d Quote) Christine Cou	unsell	
Interdisciplinar	'y	Maths – Deci	mal and binary numb	er systems	
Knowledge					
Real World Connec	ctions	Real world link	to computer scienctists		
and Authenticit	y		•		
Personal Developr	•				
#1 Visuals	#2 Or	ganisational	#3 Communication	#4 Consistency	#5 Behaviour
	5	Support			Management





### HT 5: App Development

	Core Curriculum
"The core is like a residue	- the things that stay, the things that can be captured as proposition. Often,
	such things need to be committed to memory."
	Christine Counsell
Builds on	Y7 Programming
Retrieval opportunities	Y8 Web Development
Substantive Knowledge	Decomposition
Facts, figures, dates etc	Variables
Procedural, Experimental	Identify when a problem needs to be broken down
and Disciplinary	Implement and customise GUI elements to meet the needs of the user
Knowledge	Recognise that events can control the flow of a program
(Skills to develop,	Use user input in an event-driven programming environment Use variables in an event-driven programming environment
experience and practice)	Develop a partially complete application to include additional functionality
	Identify and fix common coding errors
	Pass the value of a variable into an object
	Establish user needs when completing a creative project
	Apply decomposition to break down a large problem into more manageable steps
	Use user input in a block-based programming language
	Use a block-based programming language to create a sequence
	Use variables in a block-based programming language
	Use a block-based programming language to include sequencing and selection
	Use user input in a block-based programming language Use variables in a block-based programming language
	Reflect and react to user feedback
	Use a block-based programming language to include sequencing and selection
	Use user input in a block-based programming language
	Use variables in a block-based programming language
	Evaluate the success of the programming project
Next Steps	Y8 Programming
	Y9 Programming
	Y9 Physical computing
Summative Assessment	Multi choice Questions
Independent Learning Tasks	Programming
103K3	Curriculum Hinterland
"This provides essential co	ntext and relevance to support the overall narrative of our core curriculum"
•	he purposes of teaching, we reduce the curriculum to just the core, we may
	make it harder to teach, and at worst, we kill it."
	(Edited Quote) Christine Counsell
Interdisciplinary	Problem Solving
Knowledge	
Real World Connections	Connection to App Development on their phones
and Authenticity	
Personal Development	Problem Solving





# HT 6: Python Programming

	Core Curriculum
"The core is like a residue	- the things that stay, the things that can be captured as proposition. Often,
	such things need to be committed to memory."
	Christine Counsell
Builds on	Scratch
Retrieval opportunities	
Substantive Knowledge	Describe what algorithms and programs are and how they differ
Facts, figures, dates etc	Recall that a program written in a programming language needs to be translated in order to
	be executed by a machine
	Describe the semantics of assignment statements
	Describe how iteration (while statements) controls the flow of program execution
Procedural, Experimental	Write simple Python programs that display messages, assign values to variables, and receive
and Disciplinary	keyboard input
Knowledge	Locate and correct common syntax errors
(Skills to develop,	Use simple arithmetic expressions in assignment statements to calculate values
experience and practice)	Receive input from the keyboard and convert it to a numerical value
,	Use relational operators to form logical expressions Use binary selection (if, else statements) to control the flow of program execution
	Generate and use random integers
	Use multi-branch selection (if, elif, else statements) to control the flow of program execution
	Use iteration (while loops) to control the flow of program execution
	Use variables as counters in iterative programs
	Combine iteration and selection to control the flow of program execution
	Use Boolean variables as flags
Next Steps	Y9 Programming
	Y9 Physical Computing
Summative Assessment	Multi Choice Questions
Independent Learning	Programming
Tasks	
	Curriculum Hinterland
"This provides essential co	ntext and relevance to support the overall narrative of our core curriculum"
	the purposes of teaching, we reduce the curriculum to just the core, we may
,,,,,	make it harder to teach, and at worst, we kill it."
	(Edited Quote) Christine Counsell
Interdisciplinary	Integer data type, Logic, Place Value
Knowledge	
Real World Connections	Connection to programming jobs
and Authenticity	
Personal Development	Problem Solving
i chonai perciopineni	riobioiniocining





# Year 8 Alternative Learning Provision (ALP)

### HT 1: Media

"The core is like a r	residue ·	– the things the	Core Curriculum at stay, the things that	<sup>+</sup> can be captured as	proposition. Often.	
	00.000	such things need to be committed to memory."				
		Ū.	Christine Counsell			
Builds on		Y7 Media. Ima	ges, copyright			
Retrieval opportur						
Substantive Knowle		Explain what vec	• ·			
Facts, figures, date		-	s where using vector graphic			
Procedural, Experim			es (rectangle, ellipse, polygon	n, star) with different proper	ties (fill and stroke, shape-	
and Disciplinar	У	specific attribute	s) idual objects (select, move, r	esize rotate dunlicate flin	z-order)	
Knowledge			ps of objects (select, move, r		2-01001)	
(Skills to develo experience and pro			y applying operations (union			
experience and pro	iciice)	Convert objects t	o paths			
		Draw paths				
		Edit path nodes	e tools and techniques to cre	ate a vector graphic design		
Next Steps		ICT Y10 Design				
Summative Assess	ment	Multi Choice C	Questions			
		Create an illustration, logo or icon pack				
Independent Lear	ning	Create shapes and complete project				
Tasks						
IIThis provides and	ntial or		Curriculum Hinterland	averall parrative of a		
			vance to support the f teaching, we reduce			
	C13, 101 1		er to teach, and at wo		si me core, we muy	
			d Quote) Christine Co			
Interdisciplinar	v	Union, differe				
Knowledge	<b>^</b>					
Real World Connec	ctions	Create a logo and real-world logos				
and Authenticit	y					
Personal Developr						
#1 Visuals		ganisational	#3 Communication	#4 Consistency	#5 Behaviour	
		Support			Management	
Use of visual		support	Repeat	Routines: Class	Praise the work	
diagrams and		al in an	instructions – check	Notebook, open	and the effort!	
support		sed way to	understanding.	Inkscape		
documents to		students to	l do – We do – you			
show tasks		eir own way h their tasks	do			
	•	h meir tasks how what				
	comes					
	Como.			I	1	





# HT 2: Networks (Y7 start)

"The core is like core	idua #	o things that st	Core Curriculum	o conturod co propositi	on Often auch this	
"The core is like a res	sidue – fr		ay, the things that can b to be committed to mer		on. Offen, such things	
		need	Christine Counsell			
Builds on		Computer syst	tems and networks in the	e Key stage 2 computing	g curriculum	
Retrieval opportun						
Substantive Knowle			e what a computer netw		data is transmitted	
Facts, figures, dates	setc		een computers across ne			
			e 'protocol' and provide			
			amples of the hardware pare wired to wireless co			
			ologies currently used to			
			e 'bandwidth', using the			
			n data is transmitted, and			
		impor				
			e the Internet			
			n how data travels betw			
			ibe key words such as 'p			
		<ul> <li>Explai</li> <li>Web</li> </ul>	n the difference betwee	en me internet, ils service	es, and the world wide	
			ibe how services are pro	wided over the internet		
			me of these services and		ney are used	
		<ul> <li>Explai</li> </ul>	n the term 'connectivity	' as the capacity for co	nnected devices	
			met of Things') to collect			
			ut my knowledge (incluc			
			ibe how internet-connec			
		how they work	ponents (servers, browse < together	ers, pages, mir ana mi	rs protocois, etc.) and	
Procedural, Experimen	tal and		networks using network	hardware		
Disciplinary Knowle						
(Skills to develop, expe	erience					
and practice)						
Next Steps		Year 8 Compu				
Summative Assessn	nent		assessed on this topic as a			
Independent Learning	Tasks	DC3 formal assessments for Computer Studies.     Creating your own virtual network				
	, rasks	<ul> <li>Creating your own virtual network</li> <li>Independent research</li> </ul>				
		<ul> <li>Answering comprehensive questions</li> </ul>				
		Educational vi	ideos about the Internet	architecture		
// <del></del> / • • •			Curriculum Hinterland			
			evance to support the c			
ni, în certain subjec	lis, ior in		eaching, we reduce the to teach, and at worst, w	· · · · · · · · · · · · · · · · · · ·	bre, we may make it	
			ed Quote) Christine Cou			
Interdisciplinary Know	/ledge		sing the architecture of		aps (Geography)	
		,	igating the environment			
			ng (Mathematics)			
Real World Connectio	ns and		n the term 'connectivity			
Authenticity			net of things') to collect			
			ut my knowledge (incluc ibe the impact of interne		eras ana geolocalion).	
			w the internet is censore		d not evervone's	
		experience is				
		Analysa how	the Internet is censored	in different countries ac	ross the world	
Personal Developm	nent	Analyse now				
Personal Developm #1 Visuals	#2 OI	ganisational	#3 Communication	#4 Consistency	#5 Behaviour	
#1 Visuals	#2 OI	rganisational Support	#3 Communication	#4 Consistency	#5 Behaviour Management	
#1 Visuals	<b>#2 O</b>	ganisational Support class	<ul><li>#3 Communication</li><li>Repeat</li></ul>	#4 Consistency Routines: Class	#5 Behaviour Management Praise the effort!	
<b>#1 Visuals</b> Network topics visually represented	#2 Or Use of a notebo	rganisational Support class bok to allow	<ul> <li>#3 Communication</li> <li>Repeat instructions –</li> </ul>	#4 Consistency	#5 Behaviour Management Praise the effort! Praise the thinking	
<u> </u>	#2 Or Use of a notebo	rganisational Support class bok to allow ts to see tasks	#3 Communication • Repeat instructions – check	#4 Consistency Routines: Class	#5 Behaviour Management Praise the effort! Praise the thinking and contributions	
<b>#1 Visuals</b> Network topics visually represented	#2 Or Use of a notebo	rganisational Support class bok to allow ts to see tasks	<ul> <li>#3 Communication</li> <li>Repeat instructions –</li> </ul>	#4 Consistency Routines: Class	#5 Behaviour Management Praise the effort! Praise the thinking	





### HT 3: Web Development

			Core Curriculum			
"The core is like a res	sidue – th		ay, the things that can b		on. Often, such things	
		neea	to be committed to mer Christine Counsell	nory."		
Builds on		Y7 Programmi				
Retrieval opportun	ities	Y7 Respect	19			
		Y7 Networks				
		Y8 Media				
Substantive Knowle	edge	Describe what H	TML is			
Facts, figures, dates	s etc	Describe what CS				
			its of using CSS to style page	s instead of in-line formattin	g	
		Describe what a				
		•	ch engines 'crawl' through th	he World Wide Web and how	v they select and rank	
		results	rch engines select and rank r	oculto whon coarchoc are m	ada	
			ct of search technologies and			
		way they are use	_	a the issues that anse by the	way they function and the	
Procedural, Experimen	tal and		icture static web pages			
Disciplinary Knowle			s using inline styling to impr	ove the appearance of web	pages	
(Skills to develop, expe			vithin a web page		-	
and practice)			to construct a web page stru	ucture from a provided desig	<i>s</i> n	
		Use CSS to style static web pages				
		Use search technologies effectively				
		Create hyperlinks to allow users to navigate between multiple web pages Implement navigation to complete a functioning website				
Next Steps		Y8 App Develo		ing website		
Summative Assessn		Multi Choice (				
Independent Learning	g Tasks	Creating Web				
		Searching the				
"This provides	occontial	contaxt and rai	<b>Curriculum Hinterland</b> evance to support the c	worall parrative of our o	oro ourriculum"	
			evance to support the c eaching, we reduce the			
			to teach, and at worst, v		ore, we may make n	
			ed Quote) Christine Cou			
Interdisciplinary Know	vledge					
Real World Connectio	ns and	Links to real world website development				
Authenticity						
Personal Developm			ally search the web			
#1 Visuals		ganisational	#3 Communication	#4 Consistency	#5 Behaviour	
Use of visual to		Support Repl to allow	I Do – We Do – You	Routines: Class	Management	
compare input to		s to know	do	Notebook, open		
effect on the output		they are	Repeat instructions	Repl		
		ed to be	Parrot back	1-		





# HT 4: Programming A (Y7 start)

			hT 4:Core Curriculum		
"The core is like a r			at stay, the things that		proposition. Often,
		such things ne	eed to be committed	to memory."	
			Christine Counsell		
Builds on		Programming	in the Key stage 2 curric	ulum	
Retrieval opportur					
Substantive Knowle	edge		e a variable as a name t	hat refers to data being	stored by the
Facts, figures, date	s etc	comp			., ,
			nise that computers foll		
			t the outcome of a simp the values of variables w		
			e a condition as an expre	•	ated as either true or
		false			
		<ul> <li>Identit</li> </ul>	y that selection uses cor	nditions to control the flo	ow of a sequence
			y where selection stater		
			e iteration as a group of i	instructions that are repe	eatedly executed
			eed for iteration		
Procedural, Experim			a sequence that include		
and Disciplinar	У		y a program to include s		_1
Knowledge			e conditions that use con		
(Skills to develop			e conditions that use log y where selection stater		
experience and pra	ictice)		arison and logical operc		
			y where count-controlle		in a program
			nent count-controlled it		
			prrect errors in a program	n (debugging)	
Next Steps			Programming B		
			Programming		
		Year 8 App De			
Summative Assessr	ment		ssessed on this topic as p		
Independent Lear	ning		assessments for Compute design and apply prog		olve a problem
Tasks	illing		lection, count-controlled		
TUSK5			Curriculum Hinterland		
"This provides esse	ential co		vance to support the	overall parrative of ou	ır core curriculum"
			f teaching, we reduce		
	013, 101 11		er to teach, and at wo	-	
				orst. we kill it "	,
		(Edited			,
Interdisciplinar	v		d Quote) Christine Cou	unsell	
Interdisciplinary Knowledge	у	<ul> <li>utilisir</li> </ul>	<mark>d Quote) Christine Cou</mark> g their skills in maths (r	unsell numeracy, arithmetic	
Interdisciplinary Knowledge	у	<ul><li>utilisir</li><li>utilisir</li></ul>	<mark>d Quote) Christine Cou</mark> g their skills in maths (r g their experiences of	unsell numeracy, arithmetic <sup>r</sup> problem solving	& algebra)
	у	<ul> <li>utilisin</li> <li>utilisin</li> <li>utilising their</li> </ul>	<mark>d Quote) Christine Cou</mark> g their skills in maths (r	unsell numeracy, arithmetic <sup>r</sup> problem solving	& algebra)
Knowledge		<ul> <li>utilisin</li> <li>utilisin</li> <li>utilising their</li> <li>websites).</li> </ul>	d Quote) Christine Cou g their skills in maths (r g their experiences of expertise as an interfa	unsell numeracy, arithmetic problem solving ce user (mobile apps,	& algebra) , video games,
Knowledge Real World Connec	ctions	<ul> <li>utilisin</li> <li>utilising</li> <li>utilising their</li> <li>websites).</li> <li>All en</li> </ul>	d Quote) Christine Cou g their skills in maths (r g their experiences of expertise as an interfa pployment sectors (Pa	Unsell numeracy, arithmetic problem solving ce user (mobile apps, yroll, Stock managem	& algebra) , video games, nent, Data
Knowledge	ctions	<ul> <li>utilisin</li> <li>utilising their</li> <li>websites).</li> <li>All en</li> <li>Colle</li> </ul>	d Quote) Christine Cou g their skills in maths (r g their experiences of expertise as an interfa ployment sectors (Pa ction, Validation, Verif	Unsell numeracy, arithmetic problem solving ce user (mobile apps, yroll, Stock managem	& algebra) , video games, nent, Data
Knowledge Real World Connec	ctions	<ul> <li>utilisin</li> <li>utilising their</li> <li>websites).</li> <li>All en</li> <li>Colle</li> <li>return</li> </ul>	d Quote) Christine Cou g their skills in maths (r g their experiences of expertise as an interfa ployment sectors (Pa ction, Validation, Verif s)	Unsell numeracy, arithmetic problem solving ce user (mobile apps, yroll, Stock managem	& algebra) , video games, nent, Data
Knowledge Real World Connec	ctions	<ul> <li>utilisin</li> <li>utilising their</li> <li>websites).</li> <li>All en</li> <li>Colle</li> <li>return</li> <li>Decis</li> </ul>	d Quote) Christine Cou g their skills in maths (r g their experiences of expertise as an interfa nployment sectors (Pa ction, Validation, Verif is) ion-making	Unsell numeracy, arithmetic problem solving ce user (mobile apps, yroll, Stock managem	& algebra) , video games, nent, Data
Knowledge Real World Connec and Authenticity	ctions y	<ul> <li>utilisin</li> <li>utilisin</li> <li>utilising their</li> <li>websites).</li> <li>All en</li> <li>Colle</li> <li>return</li> <li>Decis</li> <li>Automation</li> </ul>	d Quote) Christine Cou g their skills in maths (r g their experiences of expertise as an interfa nployment sectors (Pa ction, Validation, Verif s) ion-making (Artificial Intelligence	Unsell numeracy, arithmetic problem solving ce user (mobile apps, yroll, Stock managem ication, Commerce, I	& algebra) , video games, nent, Data Profitability, Tax
Knowledge Real World Connec	ctions y	<ul> <li>utilisin</li> <li>utilising their</li> <li>websites).</li> <li>All en</li> <li>Colle</li> <li>return</li> <li>Deciss</li> <li>Automation ,</li> </ul>	d Quote) Christine Cou g their skills in maths (r g their experiences of expertise as an interfa nployment sectors (Pa ction, Validation, Verif is) ion-making ( Artificial Intelligence ming community is a v	Unsell numeracy, arithmetic problem solving ce user (mobile apps, yroll, Stock managem ication, Commerce, I very diverse and inclu	& algebra) , video games, nent, Data Profitability, Tax sive employment
Knowledge Real World Connec and Authenticity	ctions y	<ul> <li>utilisin</li> <li>utilising their</li> <li>websites).</li> <li>All en</li> <li>Colle</li> <li>return</li> <li>Decis</li> <li>Automation ,</li> <li>The program</li> <li>sector. Program</li> </ul>	d Quote) Christine Cou g their skills in maths (r g their experiences of expertise as an interfa nployment sectors (Pa ction, Validation, Verif s) ion-making (Artificial Intelligence	Unsell numeracy, arithmetic problem solving ce user (mobile apps, yroll, Stock managem ication, Commerce, I very diverse and inclu	& algebra) , video games, nent, Data Profitability, Tax sive employment
Knowledge Real World Connec and Authenticity Personal Developm	ctions y nent	<ul> <li>utilisin</li> <li>utilising their</li> <li>websites).</li> <li>All en Colle return</li> <li>Deciss</li> <li>Automation ,</li> <li>The program sector. Progra</li> <li>all skill levels.</li> </ul>	d Quote) Christine Cou g their skills in maths (r g their experiences of expertise as an interfa ployment sectors (Pa ction, Validation, Verif s) ion-making (Artificial Intelligence ming community is a amming (problem solv	Unsell numeracy, arithmetic problem solving ce user (mobile apps, yroll, Stock managem ication, Commerce, I very diverse and inclu ving) is often a collabo	& algebra) , video games, nent, Data Profitability, Tax sive employment prative process at
Knowledge Real World Connec and Authenticity	nent	<ul> <li>utilisin</li> <li>utilising their</li> <li>websites).</li> <li>All en</li> <li>Colle</li> <li>return</li> <li>Decis</li> <li>Automation ,</li> <li>The program</li> <li>sector. Program</li> </ul>	d Quote) Christine Cou g their skills in maths (r g their experiences of expertise as an interfa nployment sectors (Pa ction, Validation, Verif is) ion-making ( Artificial Intelligence ming community is a v	Unsell numeracy, arithmetic problem solving ce user (mobile apps, yroll, Stock managem ication, Commerce, I very diverse and inclu	& algebra) , video games, nent, Data Profitability, Tax sive employment





### HT 5: Spreadsheets (Y7 start)

			Core Curriculum			
"The core is like a residue – the things that stay, the things that can be captured as proposition. Often,						
such things need to be committed to memory."						
Christine Counsell						
Builds on		Key stage 2 cu	urriculum			
Retrieval opportur						
Substantive Knowle	-		Explain the difference between data and information			
Facts, figures, date			ference between primar			
Procedural, Experim	nental		fy columns, rows, cells, a		eadsheet software	
and Disciplinar	'Y		rmatting techniques in c			
Knowledge			asic formulas with cell ref	erences to perform cal	culations in a	
(Skills to develop			dsheet (+, -, *, /) e autofill tool to replicate	e cell data		
experience and pra	ictice)		ct data			
			se data			
		,	e appropriate charts in c	a spreadsheet		
		<ul> <li>Use th</li> </ul>	e functions SUM, COUNT	A, MAX, and MIN in a sp	preadsheet	
			spreadsheet to sort and			
			e functions AVERAGE, C		adsheet	
			al formatting in a spread	sheet		
Next Steps		-	dsheet development			
Summative Assess	mmative Assessment Pupils will be assessed on this topic as part of their DC1, DC2					
			& DC3 formal assessments for Computer Studies.			
Independent Lear Tasks	ning	<ul> <li>Navigate spreadsheets via rows and columns</li> <li>Locate cell references and customise cells</li> </ul>				
IOSKS		<ul> <li>Use autofill</li> </ul>				
		Apply formulae and functions				
		Use conditional formatting				
			Curriculum Hinterland			
			vance to support the			
"If, in certain subjec	cts, for t		f teaching, we reduce		t the core, we may	
		make it harde	er to teach, and at wo	orst, we kill it."		
			d Quote) Christine Cou			
Interdisciplinar	у	Cell referenc	es, functions and form	nulae (Mathematics)		
Knowledge						
Real World Connections • Da			collection and ethics.			
and Authenticit	у	• •	ent sectors (Payroll, Sto			
	Validation, Verification, Commerce, Profitability, Tax returns)					
Personal Developr	nent	Opportunity <sup>-</sup>	to develop students u	nderstanding of ethic	S	
#1 Visuals	#2 Or	ganisational	#3 Communication	#4 Consistency	#5 Behaviour	
	5	Support			Management	





# HT 6: Programming B (Y7 start)

			Core Curriculum			
"The core is like a r			at stay, the things that		proposition. Often,	
		such things ne	eed to be committed	to memory."		
			Christine Counsell			
Builds on			amming in the Key stage	2 curriculum		
Retrieval opportur		Programming A				
Substantive Knowle	-	Define a subroutine as a group of instructions that will run when called by				
Facts, figures, date	etc	the m	ain program or other sub	proutines		
		<ul> <li>Define</li> </ul>	e decomposition as brea	iking a problem down ir	nto smaller, more	
		mana	geable subproblems			
		<ul> <li>Evalue</li> </ul>	ate which type of iteration	on is required in a progra	m	
		• Define a list as a collection of related elements that are referred to by a				
		single	name			
		Describe the r	need for lists			
Procedural, Experim	nental	<ul> <li>Identi</li> </ul>	fy where condition-contr	olled iteration can be u	sed in a program	
and Disciplinar			fy how subroutines can b			
Knowledge			ment condition-controlle		1	
(Skills to develo	p,		fy when lists can be used	l in a program		
experience and pro		Use a		into an allor autoroblom		
			mpose a larger problem riate constructs to solve		15	
Next Steps			Programming			
Next Steps		Year 8 App De				
Summative Assess	ment		ssessed on this topic as p	part of their DC1, DC2		
	inem	& DC3 formal assessments for Computer Studies.				
Independent Lear	ning	Learners are given a scenario to create a translation quiz for a Modern Foreign				
Tasks	- T	Languages te	acher. The learners will d	ecompose the problem	and start to build a	
		Scratch progra	am to meet the requirem	nents.		
		<b></b>				
		This is a pair programming project that takes place over two lessons; pairs will				
		develop their programs to differing levels. A rubric is to be used for peer- or self- assessment to check progress. Extension activities allow learners to explore more				
		challenging aspects of the solution. In Lesson 12, learners will be given a multiple-				
choice quiz as a formal final assessment.					o given a monple	
			Curriculum Hinterland			
"This provides esse	ential cor		vance to support the	overall narrative of ou	ır core curriculum"	
			f teaching, we reduce			
,			er to teach, and at wo	-		
			d Quote) Christine Cou			
Interdisciplinar	v		ig their skills in maths (r		& alaebra)	
Knowledge	,	<ul> <li>utilising their experiences of problem solving</li> </ul>				
		utilising their expertise as an interface user (mobile apps, video games,				
		websites).			,	
Real World Connec	ctions		nployment sectors (Pa	vroll. Stock manager	nent. Data	
and Authenticity		Collection, Validation, Verification, Commerce, Profitability, Tax				
		returns)				
		<ul> <li>Decision-making</li> </ul>				
			/ Artificial Intelligence			
Personal DevelopmentThe programming community is a very diverse and inclusive employment sector.				molovment sector		
reisonal Developi	nem		(problem solving) is ofter			
			11			
#1 Visuals	#2 Oro	anisational	#3 Communication	#4 Consistency	#5 Behaviour	
#1 Visuals		janisational upport	#3 Communication	#4 Consistency	#5 Behaviour Management	





# Year 9 Computer Studies

# HT 1: Python Programming

"The core is like a residue – the things that stay, the things that can be captured as proposition. Often, such things need to be committed to memory."					
	Christine Counsell				
Builds on	Various KS2 programming topics, Year 7 Topics 'Programming Essentials' (Scratch)				
Retrieval opportunities	and 'Programming Projects' (Scratch), Year 8 Topics 'Web Development' (HTML), 'App				
Kennever opporternites	Development' (App Lab) and 'Programming' (Python).				
Substantive Knowledge	Pupils will be aware of:				
Facts, figures, dates etc	<ul> <li>Three Programming Constructs (Sequence, Selection, Iteration)</li> </ul>				
	Input > Process > Output				
	<ul> <li>Variables as a location to store data</li> </ul>				
	<ul> <li>If Statements' for decision-making</li> </ul>				
Procedural, Experimental	Sub-Routines Pupils will need to:				
	<ul> <li>accurately type commands, compare syntax, debug syntax errors</li> </ul>				
and Disciplinary	<ul> <li>Think computationally: abstract, decompose, recognise patterns &amp;</li> </ul>				
Knowledge	algorithms				
(Skills to develop,	make predictions				
experience and practice)	Have an appreciation of logic/binary choices				
Next Steps	Pupils engaging with this topic will be equipped to tackle Component 2 of OCR's				
	GCSE Computer Science. This topic may also be a springboard for extra-				
	curricular/hobby programming.				
Summative Assessment	Pupils will be assessed on this topic as part of their DC1, DC2 & DC3 formal assessments for Computer Studies.				
Independent Learning	Pupils will frequently be required to predict or attempt a programming solution				
Tasks	independently, before any paired or class collaboration. Attempting to solve				
TUSKS	problems and recall syntax independently develops computational thinking.				
	Curriculum Hinterland				
"This provides essential co	ntext and relevance to support the overall narrative of our core curriculum"				
	he purposes of teaching, we reduce the curriculum to just the core, we may				
	make it harder to teach, and at worst, we kill it."				
	(Edited Quote) Christine Counsell				
Interdisciplinary	Pupils will be at an advantage in this topic:				
Knowledge	<ul> <li>utilising their skills in maths (numeracy, arithmetic &amp; algebra)</li> </ul>				
-	<ul> <li>utilising their experiences of problem solving</li> </ul>				
	utilising their expertise as an interface user (mobile apps, video games, websites).				
Real World Connections	<ul> <li>All employment sectors (Payroll, Stock management, Data Collection, Validation, Varification, Commerce, Profitability, Tay rature)</li> </ul>				
and Authenticity	Validation, Verification, Commerce, Profitability, Tax returns) •Decision-making				
	Automation / Artificial Intelligence				
Personal Development	The programming community is a very diverse and inclusive employment sector.				
	Programming (problem solving) is often a collaborative process at all skill levels.				





#### HT 2: Blender Animation

	Core Curriculum					
"The core is like a residue – the things that stay, the things that can be captured as proposition. Often,						
such things need to be committed to memory."						
	Christine Counsell					
Builds on	Various KS2 programming topics, Year 7 Topics 'Programming Essentials' (Scratch),					
Retrieval opportunities	'Programming Projects' (Scratch) and 'Image Editing' (Photoshop), Year 8 Topics					
••	'Media' (InkScape).					
Substantive Knowledge	Pupils will be aware of:					
Facts, figures, dates etc	X & Y planes, 3D environments, 3D animation, Panning, Orbiting					
	<ul> <li>Mass, volume, perspective</li> </ul>					
	•Selection & text tools					
	Textures, organic objects, spotlights					
Procedural, Experimental	Pupils will need to:					
and Disciplinary	<ul> <li>be able to judge proportion, compare a worked example with their own work</li> </ul>					
Knowledge	<ul> <li>follow video tutorials closely, listening to narrated instruction</li> </ul>					
(Skills to develop,	<ul> <li>Manipulate 3D shapes in a virtual environment</li> </ul>					
experience and practice)	<ul> <li>Understand the concept of 'rendering', object mode &amp; edit mode</li> </ul>					
	Understand the facets of 3D shapes: 'vertex', 'edge' and 'face'					
Next Steps	Pupils engaging with this topic will be equipped to tackle basic character, object					
	(product) and environment modelling. These skills develop problem-					
	solving/algorithm skills for Component 2 of GCSE Computer Science. This topic may					
	also be a springboard for extra-curricular/hobby animation, modelling, product					
	design, particularly as the Blender software is freeware.					
Summative Assessment	Pupils will be assessed on this topic as part of their DC1, DC2 & DC3					
Independent Learning	formal assessments for Computer Studies. Pupils are encouraged to add to or customise base models, where they must take					
Tasks	the learned skills from the video tutorials and apply them independently. Creating					
TUSKS	new or adapting models without explicit instructions promotes recall and develops					
	problem-solving skills.					
	Curriculum Hinterland					
"This provides essential co	ntext and relevance to support the overall narrative of our core curriculum"					
"If, in certain subjects, for t	he purposes of teaching, we reduce the curriculum to just the core, we may					
	make it harder to teach, and at worst, we kill it."					
	(Edited Quote) Christine Counsell					
Interdisciplinary	Pupils will be at an advantage in this topic:					
Knowledge	<ul> <li>utilising their skills in algebra, volume, mass, X &amp; Y co-ordinates (Maths)</li> </ul>					
	<ul> <li>utilising their experiences of 3D environments (Design Technology,</li> </ul>					
	<ul> <li>Utilising their experiences of perspective &amp; depth (Art &amp; Design)</li> <li>Utilising their experiences of problem solving</li> </ul>					
	•utilising their experiences of problem solving					
Real World Connections	utilising their expertise as an interface user (mobile apps, video games, websites). •All employment sectors (Payroll, Stock management, Data					
and Authenticity	Collection, Validation, Verification, Commerce, Profitability, Tax returns)					
and Aumennicity	<ul> <li>Decision-making</li> </ul>					
	Automation / Artificial Intelligence					
Personal Development	The 3D Animation, Modelling, Product Prototyping community is a very diverse and					
	inclusive employment sector. Programming (problem solving) is often a collaborative					
	process at all skill levels.					





#### HT 3: Data Science

"The core is like a residue – the things that stay, the things that can be captured as proposition. Often,					
such things need to be committed to memory."					
Christine Counsell					
oll,					
5'.					
av					
uy					
,					
c					
า"					
ay					
ze					
lata.					
ole).					
5					
of					





#### HT 4: Representation

	Core Curriculum					
"The core is like a residue – the things that stay, the things that can be captured as proposition. Often,						
	such things need to be committed to memory."					
	Christine Counsell					
Builds on	Year 7 Topics 'Spreadsheets' (bitmap simulation), Year 8 Topic 'InkScape' (Colour					
Retrieval opportunities	Picker), 'Representations', and prior interests in sound recording, pixel art editing					
Kelleval opportunities	images.					
Substantive Knowledge	Pupils will be aware of:					
Facts, figures, dates etc	<ul> <li>Digital images</li> </ul>					
racis, ligores, dates ere	<ul> <li>Binary values (bit, byte)</li> </ul>					
	<ul> <li>Mixing colours (additive colour)</li> </ul>					
	<ul> <li>Vibrations, sound waves</li> </ul>					
	'Photoshopping'					
Procedural, Experimental	Pupils will need to:					
and Disciplinary	<ul> <li>learn what is meant by a 'bitmap'.</li> </ul>					
Knowledge	Iearn the relationship between pixels, resolution and image quality/size.					
(Skills to develop,	Iearn relationship between bit depth (bits per pixel) and colour depth.					
	<ul> <li>understand how primary colours are split between the available bits.</li> </ul>					
experience and practice)	learn how to use specific Photoshop tools (magic wand, clone					
	stamp, lasso)					
	learn audio terms such as: sample rate, sample depth, compression.					
Next Steps	Pupils engaging with this topic will be equipped to tackle the Representations topics					
	within Component 1 of GCSE Computer Science and the vocational EDUCAS Digital					
	Imaging. They will also be able to attempt editing tasks in Photoshop and similar					
	software. This topic may also be a springboard for extra-curricular/hobby/careers					
	interest in photo-retouching, graphic design, sound recording, audio					
	mixing/production and digital illustrating.					
Summative Assessment	Pupils will be assessed on this topic as part of their DC1, DC2 &					
	DC3 formal assessments for Computer Studies.					
Independent Learning	Pupils must create their own monochrome and colour bitmaps, they must determine					
Tasks	the colour depth of images, create custom colours, manipulate photographs using					
industry-based methods, compress image files and assess. Curriculum Hinterland						
<i>"_</i> ,						
	ntext and relevance to support the overall narrative of our core curriculum"					
"If, in certain subjects, for t	he purposes of teaching, we reduce the curriculum to just the core, we may					
	make it harder to teach, and at worst, we kill it."					
	(Edited Quote) Christine Counsell					
Interdisciplinary	Pupils will be at an advantage in this topic:					
Knowledge	<ul> <li>utilising their skills in numeracy (bit depth, calculating file sizes)</li> </ul>					
	<ul> <li>utilising their prior knowledge from the Year 8 'Representations' unit.</li> </ul>					
	<ul> <li>utilising their skills in numeracy.</li> </ul>					
	<ul> <li>utilising their skills in assessing (comparing) and selecting values.</li> </ul>					
	utilising their skills in Microsoft Excel (cell-shading, entering values etc)					
Real World Connections	<ul> <li>Sectors: web &amp; graphic design, audio editing &amp; production etc</li> </ul>					
and Authenticity	Physics and the natural world (sound, light, vision, vibration, air					
	waves, colour)					
	<ul> <li>Commercial imaging, social media pressures, 'Photoshopping', 'Deep Fakes'</li> </ul>					
	Digital media versus analogue media.					
Personal Development	A recognition that the images and sounds we consume are constructed by humans					
	and are often motivated by commercial interests or to influence our beliefs.					





### HT 5: Cyber Security

	Core Curriculum					
"The core is like a residue	- the things that stay, the things that can be captured as proposition. Often,					
	such things need to be committed to memory."					
	Christine Counsell					
Builds on	Year 7 Topics 'Online Safety' & 'Networks' and Year 8 Topic 'Computer Systems'.					
Retrieval opportunities						
Substantive Knowledge	Pupils will be aware of:					
Facts, figures, dates etc	Personal data					
	<ul> <li>Social media platforms, posting</li> </ul>					
	■The idea of a 'Virus'					
	<ul> <li>Customer</li> </ul>					
	Email, Text Message					
Procedural, Experimental	Pupils will need to:					
and Disciplinary	<ul> <li>learn what the three common cyber threats are.</li> </ul>					
Knowledge	<ul> <li>learn about the business of selling our data.</li> </ul>					
(Skills to develop,	<ul> <li>determine the difference between types of social engineering scams.</li> </ul>					
experience and practice)	explore what is meant by the following terms: ethical, permission, authorisation					
Next Steps	Pupils engaging with this topic will be equipped to tackle Component 1 topics: 1.3					
	Networks & Protocols & 1.4 Network Security of the GCSE Computer Science. This					
	topic may also be a springboard for extra-curricular interest in Problem Solving,					
	Cryptography, Cyber Security, Cyber Crime.					
Summative Assessment	Pupils will be assessed on this topic as part of their DC1, DC2 &					
<u> </u>	DC3 formal assessments for Computer Studies.					
Independent Learning	Pupils will read about the Data Protection Act 2018 and how Data Subjects are					
Tasks	protected. Pupils will carry out independent research on six types of Malware (Virus, Trojan Horse, Ransomware, Adware, Bot, Worm)					
	Curriculum Hinterland					
"This provides essential es	ontext and relevance to support the overall narrative of our core curriculum"					
	the purposes of teaching, we reduce the curriculum to just the core, we may make it harder to teach, and at worst, we kill it."					
	(Edited Quote) Christine Counsell					
Interdisciplinary	Pupils will be at an advantage in this topic:					
Knowledge	<ul> <li>utilising any prior experience they have with working collaboratively.</li> </ul>					
Kilowiedge	<ul> <li>utilising any prior experience of gathering information online.</li> </ul>					
	utilising any prior experience they have creating and delivering a presentation.					
Real World Connections	Pupils will read about the four types of data collected about them on Social Media					
and Authenticity	(personal, content, user behaviour and data about others)					
Personal Development	Financial security, online fraud, social engineering scams (phishing, smishing,					
	pharming, blagging)					
	Peer assessment, constructive criticism.					





### HT 6: Physical Programming

	Core Curriculum					
"The core is like a residue – the things that stay, the things that can be captured as proposition. Often,						
such things need to be committed to memory."						
	Christine Counsell					
Builds on	Potential KS2 block programming topics, Year 7 Topics 'Programming Essentials'					
Retrieval opportunities	(Scratch) and 'Programming Projects' (Scratch), Year 8 Topics 'Web Development'					
Kenneven opperternites	(HTML), 'App Development' (App Lab) and 'Programming' (Python). Tear 9 Topics					
	'Programming' (Python).					
Substantive Knowledge	Pupils will be aware of:					
Facts, figures, dates etc	<ul> <li>Block Programming' via Scratch</li> </ul>					
	<ul> <li>'Textual Programming' via Python</li> </ul>					
	<ul> <li>Command, Input &gt; Process &gt; Output</li> </ul>					
	<ul> <li>LED's (Light Emitting Diode)</li> </ul>					
	Robotic buggies					
Procedural, Experimental	Pupils will need to:					
and Disciplinary	<ul> <li>accurately type commands, compare syntax, debug syntax errors</li> </ul>					
Knowledge	<ul> <li>Think computationally: abstract, decompose, recognise patterns &amp;</li> </ul>					
(Skills to develop,	algorithms					
experience and practice)	make predictions					
,	•Have an appreciation of logic/binary choices					
Next Stene	learn the following terms: accelerometer, magnetometer, illuminance (Lux) Pupils engaging with this topic will be equipped to tackle Component 1 of OCR's					
Next Steps	GCSE Computer Science, developing their computational thinking and debugging					
	skills. This topic may also be a springboard for extra-curricular/hobby programming,					
	maker projects.					
Summative Assessment	Pupils will be assessed on this topic as part of their DC1, DC2 & DC3 formal					
Johnnanve Assessmenn	assessments for Computer Studies.					
Independent Learning	Pupils will frequently be required to predict or attempt a programming solution					
Tasks	independently, before any paired or class collaboration. Attempting to solve					
i dono	problems and recall syntax independently develops computational thinking.					
	Curriculum Hinterland					
"This provides essential co	ntext and relevance to support the overall narrative of our core curriculum"					
	he purposes of teaching, we reduce the curriculum to just the core, we may					
,,,,,,,,,,,,,,.	make it harder to teach, and at worst, we kill it."					
	(Edited Quote) Christine Counsell					
Interdisciplinary	Pupils will be at an advantage in this topic:					
Knowledge	<ul> <li>utilising their skills in maths (numeracy, arithmetic &amp; algebra)</li> </ul>					
kilowicuge	<ul> <li>utilising their experiences of problem solving</li> </ul>					
	utilising their expertise as an interface user (mobile apps, video games, websites).					
Real World Connections	•Software development.					
and Authenticity	<ul> <li>Understanding of the technology around us.</li> </ul>					
	<ul> <li>All employment sectors (Payroll, Stock management, Data Collection,</li> </ul>					
	Validation, Verification, Commerce, Profitability, Tax returns)					
	■Decision-making					
	Automation / Artificial Intelligence					
Personal Development	The programming community is a very diverse and inclusive employment sector.					
	Programming (problem solving) is often a collaborative process at all skill levels.					





# Year 9 Alternative Learning Provision (ALP)

# HT 1: Representations (Y8 start)

" <b>T</b> he second is l'iter and	Core Curriculum					
"The core is like a residue – the things that stay, the things that can be captured as proposition. Often,						
such things need to be committed to memory."						
			Christine Counsell			
Builds on		Y8 Computer S	Systems			
Retrieval opportuni						
Substantive Knowled	-	List examples of	•		<b>6</b>	
Facts, figures, dates	etc	•	Recall that representations are used to store, communicate, and process information Provide examples of how different representations are appropriate for different tasks			
		•	cters can be represented as s			
		coding schemes	clers can be represented as s	equences of symbols and its	l examples of character	
		-	s of how symbols are carried	on physical media		
			ary digits (bits) are, in terms of		igits or letters	
			tural numbers are represente			
		Provide example:	s of the different ways that b	inary digits are physically rep	presented in digital devices	
Procedural, Experime	ental		gth of a representation as the			
and Disciplinary	,		or length of a sequence of b		ligits that it contains	
Knowledge			al number to binary and vice			
(Skills to develop)	,	Convert betweer	different units and multiples	s of representation size		
experience and prac	ctice)					
Next Steps		Y9 Representations				
Summative Assessm	nent	Multi Choice Questions				
Independent Learn	Independent Learning					
Tasks						
Curriculum Hinterland						
			vance to support the			
"If, in certain subject	ts, for t		f teaching, we reduce		t the core, we may	
			er to teach, and at wo			
		(Edited	d Quote) Christine Cou	unsell		
Interdisciplinary		Maths – Deci	imal and binary numb	er systems		
Knowledge						
Real World Connections         Real world link to computer scientists						
	and Authenticity					
Personal Developm						
#1 Visuals #2 Organisational #3 Communication #4 Consistency #5 Behavi					#5 Behaviour	
	Support Management					





#### HT 2: Blender Animation

			Core Curriculum			
"The core is like a r	residue -	- the things the	at stay, the things that	can be captured as	proposition. Often,	
such things need to be committed to memory."						
		-	Christine Counsell			
Builds on		Various KS2 pr	ogramming topics, Year	7 Topics 'Programming I	Essentials' (Scratch),	
Retrieval opportun	nities		'Programming Projects' (Scratch) and 'Image Editing' (Photoshop), Year 8 Topics			
Kenne var opperior	'Media' (InkScape).					
Substantive Knowle	edae	Pupils will be aware of:				
Facts, figures, date	-		planes, 3D environments	, 3D animation, Panning	a, Orbiting	
	<ul> <li>Mass, volume, perspective</li> </ul>					
			ion & text tools			
		Textures, orga	Textures, organic objects, spotlights			
Procedural, Experim	nental	Pupils will need				
and Disciplinary		<ul> <li>be ab</li> </ul>	le to judge proportion, c	ompare a worked exar	nple with their own	
Knowledge	,	work				
(Skills to develop	n	<ul> <li>follow</li> </ul>	video tutorials closely, lis	tening to narrated instru	Jction	
experience and pra			oulate 3D shapes in a virt			
experience and pro-	iclicej	<ul> <li>Under</li> </ul>	stand the concept of 're	ndering', object mode	& edit mode	
		Understand th	e facets of 3D shapes: 'v	ertex', 'edge' and 'face'		
Next Steps			ig with this topic will be e			
			environment modelling.			
			hm skills for Component			
			gboard for extra-curricu		odelling, product	
			ularly as the Blender softw			
Summative Assessr	ment					
		formal assessments for Computer Studies.				
Independent Lear	ning					
Tasks	Tasks         the learned skills from the video tutorials and apply them independently. Creating					
new or adapting models without explicit instructions promotes recall and develops problem-solving skills.				recall and develops		
Curriculum Hinterland						
((T)) · · · · · · · · · · · · · · · · · ·						
			vance to support the			
"If, in certain subjec	cts, for fi		f teaching, we reduce		it the core, we may	
			er to teach, and at wo			
			d Quote) Christine Cou			
Interdisciplinary	у		t an advantage in this to			
Knowledge		<ul> <li>utilising their skills in algebra, volume, mass, X &amp; Y co-ordinates (Maths)</li> <li>utilising their experiences of 2D environments (Design Technology)</li> </ul>				
		<ul> <li>utilising their experiences of 3D environments (Design Technology, Environments)</li> </ul>				
		Engineering				
		<ul> <li>Utilising their experiences of perspective &amp; depth (Art &amp; Design)</li> <li>utilising their experiences of problem solving</li> </ul>				
Pogl World Connec	Real World Connections         • All employment sectors (Payroll, Stock management, Data					
		<ul> <li>All employment sectors (Payroll, Stock management, Data Collection, Validation, Verification, Commerce, Profitability, Tax returns)</li> </ul>				
and Authenticity		<ul> <li>Decision-making</li> </ul>				
		Automation / Artificial Intelligence				
Personal Developn	nent			Prototypina community	is a very diverse and	
		The 3D Animation, Modelling, Product Prototyping community is a very diverse and inclusive employment sector. Programming (problem solving) is often a collaborative				
		process at all s		<b>U</b> (1- 1- 1- 1- 1- 1- 1- 1- 1- 1- 1- 1- 1- 1		
#1 Visuals	#2 Or	ganisational	#3 Communication	#4 Consistency	#5 Behaviour	
		upport			Management	
	1					





# HT 3: Python Programming (Y8 start)

	Core Curriculum						
"The core is like a residue – the things that stay, the things that can be captured as proposition. Often,							
such things need to be committed to memory."							
			Christine Counsell				
Builds on		Scratch					
Retrieval opportur	nities						
Substantive Knowle	edge	Describe what alg	Describe what algorithms and programs are and how they differ				
Facts, figures, date	es etc		ecall that a program written in a programming language needs to be translated in order to				
		,	e executed by a machine				
			antics of assignment stateme				
Design design for a star			ration (whilestatements) con				
Procedural, Experim		keyboard input	hon programs that display me	essages, assign values to vari	ables, and receive		
and Disciplinar	У		ct common syntax errors				
Knowledge			netic expressions in assignme	ent statements to calculate v	alues		
(Skills to develop			m the keyboard and convert				
experience and pra	ictice)	Use relational op	erators to form logical expres	ssions			
		Use binary select	ion (if, elsestatements) to co	ntrol the flow of program exe	ecution		
			e random integers				
			selection (if, elif, elsestatem		program execution		
		•	ileloops) to control the flow				
			counters in iterative program				
		Combine iteration and selection to control the flow of program execution Use Boolean variables as flags					
Next Steps			Y9 Programming				
		Y9 Physical Computing					
Summative Assess	ment	Multi Choice G	Questions				
Independent Lear	Independent Learning Programming						
Tasks							
			Curriculum Hinterland				
"This provides esse	ential co	ntext and rele	vance to support the	overall narrative of ou	r core curriculum"		
"If, in certain subject	cts, for t	he purposes o	f teaching, we reduce	e the curriculum to just	t the core, we may		
		make it harde	er to teach, and at wo	orst, we kill it."			
		(Edited	d Quote) Christine Cou	unsell			
-	Integer data type, Logic, Place Value						
Knowledge	Knowledge						
Real World Connec		Connection to p	programming jobs				
	and Authenticity						
Personal Developr	nent	Problem Solv	ing				
#1 Visuals		ganisational	#3 Communication	#4 Consistency	#5 Behaviour		
	S	Support			Management		





#### HT 4: Representations

Core Curriculum					
"The core is like a residue – the things that stay, the things that can be captured as proposition. Often,					
such things need to be committed to memory."					
Christine Counsell					
Builds on		Year 7 Topics '	Spreadsheets' (bitmap si	mulation) Year 8 Topic	'InkScape' (Colour
	::::		sentations', and prior inte		
Retrieval opportur	mes	images.			g, pixel all calling
Substantive Knowle	adara	Pupils will be a	ware of:		
Substantive Knowle	-		l images		
Facts, figures, date	esetc		values (bit, byte)		
			colours (additive colou	rl	
			ions, sound waves	1)	
Due e e demail. Francesia		'Photoshoppin			
Procedural, Experim		Pupils will need		an'	
and Disciplinar	у		what is meant by a 'bitm		
Knowledge			the relationship betweer		
(Skills to develop	р,		relationship between bit		
experience and pra	ictice)		stand how primary colou		
	,		how to use specific Phot	osnop ioois (magic war	id, cione
			), lasso)		
			rms such as: sample rate		
Next Steps			ig with this topic will be e		
			nent 1 of GCSE Compute		
		00,	will also be able to atter		•
			opic may also be a sprir		
			to-retouching, graphic c		audio
			tion and digital illustratin		
Summative Assess	ment		ssessed on this topic as p		
	•		sessments for Computer		
Independent Lear	ning		eate their own monochro		
Tasks			oth of images, create cu		e photographs using
			l methods, compress ima	age mes and assess.	
			Curriculum Hinterland		
			vance to support the		
"If, in certain subjects, for the purposes of teaching, we reduce the curriculum to just the core, we may					
make it harder to teach, and at worst, we kill it."					
		(Edited	d Quote) Christine Cou	unsell	
Interdisciplinar	y		t an advantage in this to		
			ilising their skills in numeracy (bit depth, calculating file sizes)		
			Itilising their prior knowledge from the Year 8 'Representations' unit.		
			ng their skills in numeracy.		
			g their skills in assessing (		ng values.
		utilising their sk	ills in Microsoft Excel (ce	II-shading, entering valu	es etc)
Real World Connections    Secto		rs: web & graphic desigr	n, audio editing & produ	ction etc	
and Authenticity			s and the natural world		
		waves	s, colour)		
		<ul> <li>Comn</li> </ul>	nercial imaging, social m	nedia pressures, 'Photosh	nopping', 'Deep Fakes'
		versus analogue media.		·	
		that the images and sou			
		and are often	motivated by commerc	ial interests or to influence	ce our beliefs.
#1 Visuals	#2 Or	ganisational	#3 Communication	#4 Consistency	#5 Behaviour
		Support			Management
L	L				1





### HT 5: Cyber Security

#1 Visuals	#2 Organisational Support	#3 Communication	#4 Consistency	#5 Behaviour Management
Personal Developn	pharming, blo Peer assessm	ent, constructive criticism	·	
		d about the four types of ntent, user behaviour and	d data about others)	
Interdisciplinary KnowledgePupils will be at an advantage in this topic: utilising any prior experience they have with working collaborative utilising any prior experience of gathering information online. utilising any prior experience they have creating and delivering a presented		online. a presentation.		
make it harder to teach, and at worst, we kill it." (Edited Quote) Christine Counsell				
"This provides essential context and relevance to support the overall narrative of our core curriculum" "If, in certain subjects, for the purposes of teaching, we reduce the curriculum to just the core, we may				
Curriculum Hinterland				
Independent Learı Tasks	protected. Pu	protected. Pupils will carry out independent research on six types of Malware (Virus, Trojan Horse, Ransomware, Adware, Bot, Worm)		
Summative Assessr	DC3 formal a	Pupils will be assessed on this topic as part of their DC1, DC2 & DC3 formal assessments for Computer Studies. Pupils will read about the Data Protection Act 2018 and how Data Subjects are		
Next Steps	Networks & P topic may als Cryptograph	ing with this topic will be e rotocols & 1.4 Network Se so be a springboard for e y, Cyber Security, Cyber (	curity of the GCSE Comp tra-curricular interest in F Crime.	outer Science. This
Procedural, Experim and Disciplinary Knowledge (Skills to develop experience and pra	, learn learn dete explore what	what the three common about the business of sell rmine the difference betw is meant by the following	ling our data. veen types of social eng terms: ethical, permissio	on, authorisation
Substantive Knowle Facts, figures, date	dge setc Pupils will be Perso Socio The id Custo Email, Text Mo	onal data al media platforms, postin dea of a 'Virus' omer essage	g	
<b>Builds on</b> Retrieval opportun		'Online Safety' & 'Networl	<s' 'cor<="" 8="" and="" th="" topic="" year=""><th>nputer Systems'.</th></s'>	nputer Systems'.
such things need to be committed to memory." Christine Counsell				
<b>Core Curriculum</b> "The core is like a residue – the things that stay, the things that can be captured as proposition. Often,				





## HT 6: Physical Computing

Core Curriculum				
"The core is like a residue – the things that stay, the things that can be captured as proposition. Often,				
such things need to be committed to memory."				
Christine Counsell				
Builds on	Potential KS2	olock programming topic	s. Year 7 Topics 'Program	nmina Essentials'
Retrieval opportur		'Programming Projects' (		
kellieval opportor		Development' (App Lab)		
	'Programming			iony: real 7 ropies
Substantive Knowle				
		Programming' via Scrato	~h	
Facts, figures, date		al Programming' via Pyth		
		mand, Input > Process > (		
		(Light Emitting Diode)	501001	
Provide the second second second	Robotic bugg			
Procedural, Experim				
and Disciplinar		rately type commands, c		
Knowledge		computationally: abstrac	ct, decompose, recognis	se patterns &
(Skills to develo	o, algor			
experience and pra		predictions	"	
		an appreciation of logic		
		wing terms: accelerome		
Next Steps		ng with this topic will be e		
		ter Science, developing		
		may also be a springbo	ard for extra-curricular/h	obby programming,
	maker projec			
Summative Assess		assessed on this topic as p	part of their DC1, DC2 &	DC3 formal
		or Computer Studies.		
Independent Lear		uently be required to pre		
Tasks		y, before any paired or c		
	problems and	recall syntax independe	ently develops computat	ional thinking.
		<b>Curriculum Hinterland</b>		
"This provides esse	ntial context and rele	vance to support the	overall narrative of ou	r core curriculum"
"If, in certain subjects, for the purposes of teaching, we reduce the curriculum to just the core, we may				
make it harder to teach, and at worst, we kill it."				
		d Quote) Christine Co		
Interdiscipling		at an advantage in this to		
Interdisciplinar		g their skills in maths (nur		ebral
Knowledge		g their experiences of pr		coluj
		xpertise as an interface (		aames websitas
Pogl World Course				James, wensiesj.
Real World Connec		<ul> <li>Software development.</li> <li>Understanding of the technology ground us.</li> </ul>		
and Authenticit		Understanding of the technology around us.		
		<ul> <li>All employment sectors (Payroll, Stock management, Data Collection, Validation, Verification, Commerce, Profitability, Tax returns)</li> </ul>		
			leice, Floilidbilly, lux le	norrisj
Decision-making     Automation / Artificial Intel				
Demonst Devel			diverse and inclusive	aployment costor
Personal Developr		ning community is a very		
#1 \/		(problem solving) is often		
#1 Visuals	#2 Organisational	#3 Communication	#4 Consistency	#5 Behaviour
	Support			Management





## OCR GCSE Computer Science J277

## 1. Computer Systems

### 1. Systems Architecture

	Core Curriculum	
"The core is like a residue – the things that stay, the things that can be captured as proposition. Often,		
such things need to be committed to memory."		
	Christine Counsell	
Builds on	Y8 Computer Systems	
Retrieval opportunities		
Substantive Knowledge	1. Architecture of the CPU - The purpose of the CPU: The fetch-execute cycle (What actions occur	
Facts, figures, dates etc	at each stage of the fetch-execute cycle)	
	Common CPU components and their function: ALU (Arithmetic Logic Unit), CU (Control Unit), Cache, Registers (The role/purpose of each component and what it manages, stores, or controls during the	
	fetch-execute cycle)	
	Von Neumann architecture: MAR (Memory Address Register), MDR (Memory Data Register), Program	
	Counter, Accumulator (The purpose of each register, what it stores (data or address), The difference between storing data and an address)	
	3. Embedded Systems - The purpose and characteristics of embedded systems (What embedded	
	systems are, Typical characteristics of embedded systems)	
Procedural, Experimental	2. CPU Performance - How common characteristics of CPUs affect their performance: clock speed, cache size, number of cores (Understanding of each characteristic as listed) (The effects of changing	
and Disciplinary	any of the common characteristics on system performance, either individually or in combination)	
	3. Embedded Systems - Give examples of embedded systems (Familiarity with a range of different	
(Skills to develop,	embedded systems)	
experience and practice)	Mamony and starsage (how CDU works with DAAA)	
Next Steps	Memory and storage (how CPU works with RAM)	
Summative Assessment	End of unit assessment – DART assessment	
Independent Learning	Research and revision document creation.	
Tasks		
Curriculum Hinterland		
"This provides essential context and relevance to support the overall narrative of our core curriculum"		
"If, in certain subjects, for the purposes of teaching, we reduce the curriculum to just the core, we may		
make it harder to teach, and at worst, we kill it."		
	(Edited Quote) Christine Counsell	
Interdisciplinary	Maths – CPU Performance	
Knowledge		
Real World Connections	Links to gaming industry and hardware jobs (ARM)	
and Authenticity		
Personal Development		





## 2. Memory & Storage

	Core Curriculum	
"The core is like a residue – the things that stay, the things that can be captured as proposition. Often,		
such things need to be committed to memory."		
Builds on	Christine Counsell	
Retrieval opportunities	Y8 Computer Systems Systems Architecture	
Kellieval opportorilles	Representation	
Substantive Knowledge	<b>1. Primary Storage -</b> The need for primary storage (Why computers have primary storage, How this	
Substantive Knowledge Facts, figures, dates etc Procedural, Experimental and Disciplinary	<ol> <li>Primary Storage - The need for primary storage (Why computers have primary storage, How this usually consists of RAM and ROM), The difference between RAM and ROM (Key characteristics of RAM and ROM), The purpose of ROM in a computer system, The purpose of RAM in a computer system, Virtual memory (Why virtual memory may be needed in a system: How virtual memory works, Transfer of data between RAM and HDD when RAM is filled)</li> <li>Secondary Storage - The need for secondary storage (Why computers have secondary storage), Common types of storage: Optical, Magnetic, Solid state (Recognise a range of secondary storage devices/media, Differences between each type of storage device/medium).</li> <li>Units - The units of data storage (Why data must be stored in binary format): Bit, Nibble (4 bits), Byte (8 bits), Kilobyte (1,024 bytes or 1 KB), Megabyte (1,024 KB), Gigabyte (1,024 MB), Terabyte (1,024 GB), Petabyte (1,024 TB)</li> <li>Data Storage - Characters - The use of binary codes to represent characters. The term 'character set'. The relationship between the number of bits per character in a character set, and the number of characters which can be represented as a series of pixels, represented in binary. Metadata. The effect of colour depth and resolution on: The quality of the image, The size of an image file Sound - How sound can be sampled and stored in digital form. The effect of sample rate, duration, and bit depth on: The playback quality, The size of a sound file</li> <li>Compression - The need for compression. Types of compression: Lossy, Lossless</li> <li>Secondary Storage - Compare advantages/disadvantages for each storage device, be able to apply their knowledge in context within scenarios</li> <li>Units - Familiarity with data units and moving between each. Data capacity and calculation of data</li> </ol>	
Knowledge	<b>3. Units -</b> Familiarity with data units and moving between each. Data capacity and calculation of data capacity requirements (Calculate capacity of devices. Calculate required capacity for a given set of	
(Skills to develop, experience and practice)	<ul> <li>files. Calculate file sizes of sound, images, and text files: sound file size = sample rate x duration (s) x bit depth, image file size = colour depth x image height (px) x image width (px), text file size = bits per character x number of characters)</li> <li><b>4. Data Storage - Numbers</b> - How to convert positive denary whole numbers to binary numbers (up to and including 8 bits) and vice versa. How to add two binary integers together (up to and including 8 bits) and explain overflow errors which may occur. How to convert positive denary whole numbers into 2-digit hexadecimal numbers and vice versa. How to convert binary integers to their hexadecimal equivalents and vice versa. Binary shifts</li> </ul>	
Next Steps	File Handling – Programming	
	Bololean Logic	
Summative Assessment	End of unit assessment – DART assessment	
Independent Learning Tasks	Research and revision document completion	
<b>Curriculum Hinterland</b> "This provides essential context and relevance to support the overall narrative of our core curriculum" "If, in certain subjects, for the purposes of teaching, we reduce the curriculum to just the core, we may make it harder to teach, and at worst, we kill it."		
	(Edited Quote) Christine Counsell	
Interdisciplinary Knowledge	Maths – Calculation of RAM size Whole unit is based on maths, relating to metre to km conversions and capacity calculations as well as place value. There are also many T3 vocabulary words, mentioned above.	
Real World Connections and Authenticity	Buying a computer – why is more RAM better?	
Personal Development	Students will aim high and show GRIT to understand all the abstract concepts in this unit. We will link it to industry and home computing	



Г



#### 3. Networks and Protocols

Core Curriculum		
"The core is like a residue – the things that stay, the things that can be captured as proposition. Often,		
such things need to be committed to memory."		
	Christine Counsell	
Builds on	Y7 Networks	
Retrieval opportunities		
<b>Substantive Knowledge</b> Facts, figures, dates etc	<ol> <li>Networks and Topologies - Types of network: LAN (Local Area Network), WAN (Wide Area Network). Factors that affect the performance of networks. The different roles of computers in a client- server and a peer-to-peer network. The hardware needed to connect stand-alone computers into a Local Area Network: Wireless access points, Routers, Switches, NIC (Network Interface Controller/Card), Transmission media. The Internet as a worldwide collection of computer networks: DNS (Domain Name Server), Hosting, The Cloud, Web servers and clients. Star and Mesh network topologies.</li> <li>Wired and wireless Networks, protocols, and layers - Modes of connection: Wired, Ethernet, Wireless. Wi-Fi, Bluetooth. Encryption. IP addressing and MAC addressing. Standards. Common protocols including: TCP/IP (Transmission Control Protocol/Internet Protocol), HTTP (Hyper Text Transfer Protocol), HTTPS (Hyper Text Transfer Protocol Secure), FTP (File Transfer Protocol), POP (Post Office Protocol), IMAP (Internet Message Access Protocol), SMTP (Simple Mail Transfer Protocol), The concept of layers.</li> </ol>	
Procedural, Experimental		
and Disciplinary		
Knowledge		
(Skills to develop,		
experience and practice)		
Next Steps	Cyber Security	
Summative Assessment	End of unit assessment – DART assessment	
Independent Learning Tasks	Networking Tasks, research	
Curriculum Hinterland		
"This provides essential context and relevance to support the overall narrative of our core curriculum"		
"If, in certain subjects, for t	he purposes of teaching, we reduce the curriculum to just the core, we may	
	make it harder to teach, and at worst, we kill it."	
	(Edited Quote) Christine Counsell	
Interdisciplinary		
Knowledge		
Real World Connections	Discussion of real world networks, WWW and Internet	
and Authenticity		
Personal Development		





### 4. Network Security

Core Curriculum		
"The core is like a residue – the things that stay, the things that can be captured as proposition. Often,		
such things need to be committed to memory."		
	Christine Counsell	
Builds on	Y9 Cyber Security, Networks	
Retrieval opportunities		
Substantive Knowledge	<b>1. Threats to computer systems and networks</b> Forms of attack: Malware, Social engineering, e.g. phishing, people as the 'weak point', Brute-force	
Facts, figures, dates etc	attacks, Denial of service attacks, Data interception and theft, The concept of SQL injection	
	2. Identifying and preventing vulnerabilities	
	Common prevention methods: Penetration testing, Anti-malware software, Firewalls, User access levels, Passwords, Encryption, Physical security	
Procedural, Experimental		
and Disciplinary		
Knowledge		
(Skills to develop,		
experience and practice)		
Next Steps	System Software, A Level, BTEC	
Summative Assessment	End of unit assessment – DART assessment	
Independent Learning	Working through Class Notebook tasks	
Tasks		
	Curriculum Hinterland	
"This provides essential co	ntext and relevance to support the overall narrative of our core curriculum"	
"If, in certain subjects, for t	he purposes of teaching, we reduce the curriculum to just the core, we may	
	make it harder to teach, and at worst, we kill it."	
	(Edited Quote) Christine Counsell	
Interdisciplinary	Key English vocabulary used to describe key threats	
Knowledge		
Real World Connections	Real world link to hacking and protection as well as their own lived	
and Authenticity	experience	
Personal Development	Learning to protect themselves from online harms	





## 5. System Software

	Core Curriculum		
"The core is like a residue	- the things that stay, the things that can be captured as proposition. Often,		
such things need to be committed to memory."			
	Christine Counsell		
Builds on	Y8 Computer systems		
Retrieval opportunities			
Substantive Knowledge Facts, figures, dates etc	<ol> <li>Operating Systems - The purpose and functionality of operating systems: User interface, Memory management and multitasking, Peripheral management and drivers, User management, File management</li> <li>Utility Software - The purpose and functionality of utility software. Utility system software:</li> </ol>		
Procedural Experimental	Encryption software, Defragmentation, Data compression		
Procedural, Experimental and Disciplinary			
Knowledge			
(Skills to develop,			
experience and practice)			
Next Steps	Impact of Digital Technology, Programming, A Level and BTEC		
Summative Assessment	End of unit assessment – DART assessment		
Independent Learning	Class Notebook tasks		
Tasks			
	Curriculum Hinterland		
"This provides essential co	ntext and relevance to support the overall narrative of our core curriculum"		
"If, in certain subjects, for t	he purposes of teaching, we reduce the curriculum to just the core, we may		
make it harder to teach, and at worst, we kill it."			
	(Edited Quote) Christine Counsell		
Interdisciplinary			
Knowledge			
Real World Connections	Connection to personal devices and uses		
and Authenticity			
Personal Development			





### 6. Impact of Digital Technology

Core Curriculum		
"The core is like a residue – the things that stay, the things that can be captured as proposition. Often,		
such things need to be committed to memory."		
	Christine Counsell	
Builds on	Respect, Media	
Retrieval opportunities		
Substantive Knowledge Facts, figures, dates etc	Impacts of digital technology on wider society including: Ethical issues, Legal issues, Cultural issues, Environmental issues, Privacy issues. Legislation relevant to Computer Science: The Data Protection Act 2018, Computer Misuse Act 1990, Copyright Designs and Patents Act 1988, Software licences (i.e. open source and proprietary)	
Procedural, Experimental	Recommend a type of licence for a given scenario including benefits and drawbacks	
and Disciplinary		
Knowledge		
(Skills to develop,		
experience and practice)		
Next Steps	A Level, BTEC	
Summative Assessment	End of unit assessment – DART assessment	
Independent Learning	Discussion questioning	
Tasks		
Curriculum Hinterland		
"This provides essential context and relevance to support the overall narrative of our core curriculum" "If, in certain subjects, for the purposes of teaching, we reduce the curriculum to just the core, we may make it harder to teach, and at worst, we kill it." (Edited Quote) Christine Counsell		
Interdisciplinary	Morals, ethics, environmental issues (geography, science), laws	
Knowledge	Morals, ennies, enniorimernarisses (geography, science), idws	
Real World Connections and Authenticity	Real world scenarios, stories, knowledge to support discussions	
Personal Development	Rule of law, cultural differences	





### 2. Computational Thinking, Algorithms and Programming

## 1. Algorithms

Core Curriculum			
"The core is like a residue – the things that stay, the things that can be captured as proposition. Often,			
	such things need to be committed to memory."		
	Christine Counsell		
Builds on	KS3 Programming, App Development, Web Developement		
Retrieval opportunities			
Substantive Knowledge	Understand main steps of each algorithm and their prerequisites. Understanding of these principles and how they are used to define and refine problems		
Facts, figures, dates etc			
Procedural, Experimental	<ol> <li>Computational Thinking - Principles of computational thinking: Abstraction, Decomposition, Algorithmic thinking</li> </ol>		
and Disciplinary	<b>2. Designing, creating, and refining algorithms -</b> Identify the inputs, processes, and		
<b>Knowledge</b> (Skills to develop,	outputs for a problem. Structure diagrams. Create, interpret, correct, complete, and refine		
experience and practice)	algorithms using: Pseudocode, Flowcharts, Reference language/high-level programming		
experience and practice)	language. Identify common errors. Trace tables.		
	<b>3. Searching and sorting algorithms</b> - Standard searching algorithms: Binary search, Linear search. Standard sorting algorithms: Bubble sort, Merge sort, Insertion sort.		
	Lineal search. Standard Solung algonantis. Dubble solt, merge solt, insertion solt.		
	Apply algorithm to dataset.		
Next Steps	Programming Techniques, Robust Programs		
Summative Assessment	DART Assessment		
Independent Learning	Class Notebook tasks		
Tasks			
	Curriculum Hinterland		
	ntext and relevance to support the overall narrative of our core curriculum"		
"If, in certain subjects, for the purposes of teaching, we reduce the curriculum to just the core, we may			
	make it harder to teach, and at worst, we kill it."		
	(Edited Quote) Christine Counsell		
Interdisciplinary	Sorting, searching, problem solving		
Knowledge			
Real World Connections	Real world problems and solutions		
and Authenticity	Ducklass ach 's s		
Personal Development	Problem solving		





# 2. Programming Techniques

Core Curriculum		
"The core is like a residue – the things that stay, the things that can be captured as proposition. Often,		
such things need to be committed to memory."		
	Christine Counsell	
Builds on	Algorithms, KS3 Programming	
Retrieval opportunities		
Substantive Knowledge Facts, figures, dates etc	Understanding of each technique. Recognise the use of ==, !=. <, <=, >, >=, +, -, *, /, MOD, DIV, ^	
Procedural, Experimental and Disciplinary Knowledge (Skills to develop, experience and practice)	<ol> <li>Programming fundamentals - The use of variables, constants, operators, inputs, outputs and Assignments. The use of the three basic programming constructs used to control the flow of a program: Sequence, Selection, Iteration (count- and condition-controlled loops). The common arithmetic operators. The common Boolean operators AND, OR and NOT.</li> <li>Data Types - The use of data types: Integer, Real, Boolean, Character and string, Casting</li> <li>Additional techniques - The use of basic string manipulation. The use of basic file handling operations: Open, Read, Write, Close. The use of records to store data. The use of SQL to search for data. The use of arrays (or equivalent) when solving problems, including both one-dimensional and two-dimensional arrays. How to use sub programs (functions and procedures) to produce structured code. Random number generation</li> </ol>	
Next Steps	Robust Programs	
Summative Assessment	DART Assessment	
Independent Learning Tasks	Many programming challenges	
Curriculum Hinterland "This provides essential context and relevance to support the overall narrative of our core curriculum" "If, in certain subjects, for the purposes of teaching, we reduce the curriculum to just the core, we may make it harder to teach, and at worst, we kill it." (Edited Quote) Christine Counsell		
Interdisciplinary Knowledge	Maths operators	
Real World Connections and Authenticity	Programming job links	
Personal Development		





## 3. Robust Programs

Core Curriculum		
"The core is like a residue – the things that stay, the things that can be captured as proposition. Often,		
	such things need to be committed to memory."	
	Christine Counsell	
Builds on	Programming techniques	
Retrieval opportunities		
Substantive Knowledge	<b>2. Testing -</b> The purpose of testing. Types of testing: Iterative, Final/terminal.	
Facts, figures, dates etc		
Procedural, Experimental	1. Defensive design - Defensive design considerations: Anticipating misuse,	
and Disciplinary	Authentication. Input validation. Maintainability: Use of sub programs, Naming conventions,	
Knowledge	Indentation, Commenting <b>2. Testing</b> - Identify syntax and logic errors. Selecting and using suitable test data: Normal,	
(Skills to develop,	Boundary, Invalid, Erroneous, Refining algorithms	
experience and practice)		
Next Steps	A Level, BTEC	
Summative Assessment	Programming Project, DART Assessment	
Independent Learning	Creating their own programs through waterfall methadology	
Tasks		
	Curriculum Hinterland	
"This provides essential co	ntext and relevance to support the overall narrative of our core curriculum"	
"If, in certain subjects, for t	he purposes of teaching, we reduce the curriculum to just the core, we may	
	make it harder to teach, and at worst, we kill it."	
	(Edited Quote) Christine Counsell	
Interdisciplinary	Testing, evaluating, validation, verification	
Knowledge		
Real World Connections	Real world programming experience	
and Authenticity		
Personal Development	Understanding the need to test	





#### 4. Boolean Logic

Core Curriculum	
"The core is like a residue – the things that stay, the things that can be captured as proposition. Often,	
	such things need to be committed to memory."
	Christine Counsell
Builds on	Y8 Computer Systems
Retrieval opportunities	
Substantive Knowledge	Knowledge of the truth tables for each logic gate. Recognition of each gate symbol
Facts, figures, dates etc	
Procedural, Experimental	Simple logic diagrams using the operators AND, OR and NOT. Truth tables. Combining
and Disciplinary	Boolean operators using AND, OR and NOT. Applying logical operators in truth tables to
Knowledge	solve problems. Understanding of how to create, complete or edit logic diagrams and truth tables for given
(Skills to develop,	scenarios. Ability to work with more than one gate in a logic diagram
experience and practice)	
Next Steps	Programming Techniques
Summative Assessment	DART Assessment
Independent Learning	Creating/completing Truth tables, logic diagrams and statements
Tasks	
	Curriculum Hinterland
"This provides essential co	ntext and relevance to support the overall narrative of our core curriculum"
"If, in certain subjects, for t	he purposes of teaching, we reduce the curriculum to just the core, we may
make it harder to teach, and at worst, we kill it."	
(Edited Quote) Christine Counsell	
Interdisciplinary	Core logical operators
Knowledge	
Real World Connections	Use of basic words in a structured and clear format
and Authenticity	
Personal Development	Understanding basic logic





## 5. IDEs and Languages

	Core Curriculum	
"The core is like a residue – the things that stay, the things that can be captured as proposition. Often,		
	such things need to be committed to memory."	
	Christine Counsell	
Builds on	Programming (All years)	
Retrieval opportunities		
Substantive Knowledge	<b>1. Languages -</b> Characteristics and purpose of different levels of programming language:	
Facts, figures, dates etc	High-level languages, Low-level languages. The purpose of translators. The characteristics	
	of a compiler and an interpreter.	
	<b>2. The IDE -</b> Common tools and facilities available in an Integrated Development Environment (IDE): Editors, Error diagnostics, Run-time environment, Translators	
Procedural, Experimental	Practical experience of using a range of these tools within at least one IDE	
and Disciplinary		
Knowledge		
(Skills to develop,		
experience and practice)		
Next Steps	A Level, BTEC, Programming Techniques	
Summative Assessment	DART Assessment	
Independent Learning	Class Notebook tasks	
Tasks		
TUSKS	Curriculum Hinterland	
"This provides essential co	ntext and relevance to support the overall narrative of our core curriculum"	
	he purposes of teaching, we reduce the curriculum to just the core, we may	
	make it harder to teach, and at worst, we kill it."	
Interdicciplinam.	(Edited Quote) Christine Counsell	
Interdisciplinary		
Knowledge		
Real World Connections	Real world programming applications and their benefits	
and Authenticity		
Personal Development		





## Eduqas Vocational Award in ICT

## Unit 1 – ICT in Society

### Chapter 1: How IT can be used to fulfil the needs of organisations and individuals

	Core Curriculum	
"The sere is like a residue	"The core is like a residue – the things that stay, the things that can be captured as proposition. Often,	
	such things need to be committed to memory."	
	Christine Counsell	
Builds on	All four coursework units completed in Year 10. (Word processing, spreadsheet	
Retrieval opportunities	development, database development and image manipulation)	
	Key stage 3 topics:	
	<ul> <li>Input, output and storage devices</li> </ul>	
	<ul> <li>Basic internal components of a computing device</li> </ul>	
	•CPU Architecture	
	•Computer Peripherals	
	•System software	
	Application software	
	• Utility software	
	•IT Services	
	•Online safety	
	Cloud computing and storage	
Substantive Knowledge	Learners should know and understand types of:	
Facts, figures, dates etc	computing devices	
racis, ligures, dales elc	input devices	
	output devices	
	storage devices	
	basic internal components	
	• ports.	
	Learners should know and understand:	
	system software	
	applications software	
	• utility software	
	• specialist software	
	information handling software	
	open source software	
	• communication software.	
	Learners should be aware of how each service improves efficiency/productivity for	
	businesses and/or individual users:	
	• Smart TV	
	• gaming	
	<ul> <li>image capture and manipulation</li> </ul>	
	webcam services	
	social networking: information needed to create accounts; services available	
	• music and sound including downloading from the Internet and related issues	
	mobile phones	
	• banking	
	• E-commerce systems	
	• payroll	
	modern mail handling methods	
	<ul> <li>control processes (feedback)</li> </ul>	
	robotics and bionics	
	artificial intelligence (AI) and expert systems	
	<ul> <li>online shopping and searching for products on websites</li> </ul>	
	booking online	
	management information systems	
	• weather forecasting systems	
	remote storage technologies	
	online education and blended learning	
	security systems	
	accessibility	
	virtual reality and augmented reality	
	• 3D Printing	
	wearable technologies	
	cloud computing	
	close componing	





	disabled accessibility
	emerging technologies.
Procedural, Experimental	
and Disciplinary	
Knowledge	
(Skills to develop,	
experience and practice)	
Next Steps	Chapter 2: How data and information is used and transferred
	•A-Level ICT
	•A-Level Computer Science
	<ul> <li>T Level Digital production, design and development</li> </ul>
	BTEC Level 3 in ICT
Summative Assessment	Pupils will be assessed on this topic as part of their mock exams in October and
	January. There will also be end of chapter assessments.
Independent Learning	<ul> <li>Independent research</li> </ul>
Tasks	Answering comprehensive questions
	Mock exam questions
	Educational videos Curriculum Hinterland
"This provides essential es	
-	ntext and relevance to support the overall narrative of our core curriculum"
TIT, IN CEITAIN SUDJECTS, TOP 1	he purposes of teaching, we reduce the curriculum to just the core, we may
	make it harder to teach, and at worst, we kill it."
- · · · · ·	(Edited Quote) Christine Counsell
Interdisciplinary	Payroll and e-commerce (Enterprise)
Knowledge	• 3D printing and robotics (Engineering)
	Image capture and manipulation (Photography)     Wearable technologies (Physical education)
	Wearable technologies (Physical education) Weather forecasting systems (Geography)
Real World Connections	•How IT can be used to fulfil the needs of organisations and individuals
and Authenticity	•Automation / Artificial Intelligence in the workplace
and Admenticity	Links to year 10 coursework scenario
Personal Development	Opportunities to explore artificial intelligence and explore the ethical constraints.
	Students will be given the opportunity to express their opinions and respect each
	others input.





### Chapter 2: How data and information is used and transferred

Core Curriculum	
"The core is like a residue ·	- the things that stay, the things that can be captured as proposition. Often, such things need to be committed to memory."
	Christine Counsell
<b>Builds on</b> Retrieval opportunities	All four coursework units completed in Year 10. (Word processing, spreadsheet development, database development and image manipulation) <b>Key stage 3 topics:</b> • Data, information and knowledge • Data loss • Physical security • File storage and properties • Data capture • Computer Networks • Protocols • Network Topologies • Internet, extranet and intranet • Network devices • Malware • External threats • Types of connectivity
Substantive Knowledge	Learners should know and understand:
Substantive Knowledge Facts, figures, dates etc	Learners should know and understand: • that data consists of raw facts and figures • that information is data which has been processed by the computer • that knowledge is derived from information by applying rules to it • the need for good quality data • the potential benefits of encoding data and the reasons for doing it • improvements in speed of access to data and increased storage • advantages and disadvantages of using information and communication technology for storing data • file types • data compression • file properties. Learners should know and understand: • data capture methods • methods used for validation and verification and where they are appropriate • possible sources of error which could exist • techniques used to overcome these errors. Learners should know and understand: • the differences between local (LAN) and wide area (WAN) networks • the purpose of protocols • computer network operation • network topologies including bus, star and ring • internet/extranet/intranet
	<ul> <li>devices within a network</li> <li>how data is transferred over a network</li> <li>potential threats to data transfer (e.g., packet sniffing)</li> <li>cloud computing vs in-house servers</li> </ul>
	emerging technologies
	Learners should know and understand: • connection methods
	<ul> <li>short range wireless connection (802.11 Bluetooth), near-field communication</li> </ul>
	(NFC) and radio-frequency Identification (RFID)
	<ul> <li>medium range wireless connection (3G/4G/5G)</li> <li>long range wireless connection (microwave, satellite)</li> </ul>
	ethernet, USB, micro USB and USB C
	emerging technologies.
Procedural, Experimental	
and Disciplinary	
Knowledge	
(Skills to develop,	
experience and practice)	





Next Steps	•Chapter 3: Legal, moral, ethical, cultural and environmental impacts of IT
	and the need for cybersecurity
	•A-Level ICT
	•A-Level Computer Science
	<ul> <li>T Level Digital production, design and development</li> </ul>
	BTEC Level 3 in ICT
Summative Assessment	Pupils will be assessed on this topic as part of their mock exams in October and
	January. There will also be end of chapter assessments.
Independent Learning	<ul> <li>Independent research</li> </ul>
Tasks	<ul> <li>Answering comprehensive questions</li> </ul>
	<ul> <li>Mock exam guestions</li> </ul>
	Educational videos
	Curriculum Hinterland
"This provides essential co	ntext and relevance to support the overall narrative of our core curriculum"
-	he purposes of teaching, we reduce the curriculum to just the core, we may
make it harder to teach, and at worst, we kill it."	
	(Edited Quote) Christine Counsell
Interdisciplinary	•Ethics of data collection(PSHCE)
Knowledge	Geography of the internet (Geography)
Real World Connections	<ul> <li>Threats to data</li> </ul>
and Authenticity	•Cyber attacks
	Identity theft prevention
Personal Development	Opportunities to explore the ethical constraints of data collection. Students will be
	given the opportunity to express their opinions and respect each others input.





	Core Curriculum
"The core is like a residue	- the things that stay, the things that can be captured as proposition. Often
	such things need to be committed to memory."
	Christine Counsell
Builds on	All four coursework units completed in Year 10. (Word processing, spreadsheet
Retrieval opportunities	development, database development and image manipulation)
	Key stage 3 topics: • GDPR
	GDFK     Computer Misuse Act
	Computer Misose Act     Communications Act
	Copyright Designs and Patents Act
	<ul> <li>Health and Safety Legislation</li> </ul>
	E-Waste
	Digital Footprint
Substantive Knowledge	Learners should know and understand:
acts, figures, dates etc	accidental damage
	<ul> <li>unintended disclosure by incorrectly assigned access levels</li> </ul>
	<ul> <li>malicious software including viruses, worms, Trojan Horses, spyware,</li> </ul>
	ransomware, DDoS and key logging
	<ul> <li>hacking (e.g., white, black and grey hat)</li> </ul>
	<ul> <li>social engineering</li> </ul>
	<ul> <li>emerging threats.</li> </ul>
	Learners should know and understand:
	<ul> <li>financial implications</li> </ul>
	moral and legal implications (including competitor advantage, breaking
	GDPR/DPA, open to blackmail)
	data manipulation
	loss of service
	loss of intellectual property
	loss of reputation.
	Learners should know and understand:
	logical protection including access levels, authentication, firewalls, anti-
	<ul><li>malware applications, password protection and encryption</li><li>physical protection including locks, biometrics, location of hardware,</li></ul>
	backup systems and security staff
	<ul> <li>security policies including disaster recovery, staff responsibilities, acceptate</li> </ul>
	use policy and staff training
	emerging technologies.
	Learners should know and understand:
	<ul> <li>privacy and security</li> </ul>
	<ul> <li>cookies and data collection by multinational companies</li> </ul>
	<ul> <li>monitoring of individuals</li> </ul>
	<ul> <li>impact of data loss or damage.</li> </ul>
	Learners should know:
	<ul> <li>General data protection regulation (GDPR) 2018</li> </ul>
	<ul> <li>Data protection act (DPA) 1998</li> </ul>
	Computer misuse act 1990
	Communications act 2003
	<ul> <li>Regulation of investigatory powers act 2016</li> </ul>
	<ul> <li>Copyright, designs and patents act 1988</li> </ul>
	<ul> <li>Health and safety legislation.</li> </ul>
	Learners should be aware of:
	employment patterns
	• retraining
	<ul> <li>changes in working practices (e.g., collaboration, hot desking)</li> </ul>
	• teleworking
	homeworking
	videoconferencing
	effect on transport
	effect on traditional media
	drones     groop II and non-groop II
	• green IT and non-green IT
	e-waste     rare earth element mining

• rare earth element mining





	a global production lines
	global production lines
	<ul> <li>the digital divide – local and global</li> </ul>
	<ul> <li>social media including cyberbullying and Fake News</li> </ul>
	<ul> <li>net neutrality</li> </ul>
	<ul> <li>addiction</li> </ul>
	• mental health
	emerging technologies.
	Learners should know and understand the potential effects of:
	<ul> <li>digital footprint – passive and active</li> </ul>
	• posts on social media
	online identity
	• identity theft
	<ul> <li>the risks of inappropriate images.</li> </ul>
Procodural Exporimontal	
Procedural, Experimental	
and Disciplinary	
Knowledge	
(Skills to develop,	
experience and practice)	
Next Steps	•A-Level ICT
	• A-Level Computer Science
	<ul> <li>T Level Digital production, design and development</li> </ul>
	BTEC Level 3 in ICT
Summative Assessment	Pupils will be assessed on this topic as part of their mock exams in October and
Johnnanve Assessmenn	January. There will also be end of chapter assessments.
Independent Learning	Independent research
Tasks	Answering comprehensive questions
TUSKS	Mock exam questions
	Educational videos
	Curriculum Hinterland
"This provides essential es	
	ontext and relevance to support the overall narrative of our core curriculum"
"If, in certain subjects, for t	the purposes of teaching, we reduce the curriculum to just the core, we may
	make it harder to teach, and at worst, we kill it."
	(Edited Quote) Christine Counsell
Interdisciplinary	•E-Waste(Geography)
Knowledge	•Rare element mining (Geography)
	•Digital divide (PSHCE)
	Copyright Designs and Patents Act (Business)
Real World Connections	•Legal implications in the workplace
and Authenticity	•Environmental impacts of technology
and Admenticity	•Cybersecurity
	•Mental health
	Addiction
	•E-Waste
	•Green IT
	Rare Element mining
Portonal Development	Students can research a topic linked to diversity, relationships, beliefs, inclusion,
Personal Development	health , protected characteristics and/or fundamental British values.
	neaim, protectea charactenstics ana/or fundamental Bhish values.





### Unit 2 – ICT in Context

## Task 1: Planning, creating, modifying, and using databases

Core Curriculum	
"The core is like a residue – the things that stay, the things that can be captured as proposition. Often, such things	
need to be committed to memory." Christine Counsell	
Builds on	Y7 Spreadsheets, Y8 Computer Systems, Image Task
Retrieval opportunities	17 spreddsheers, 18 Comporer Systems, imdge rusk
Procedural, Experimental and	Learners should be able to:
Disciplinary Knowledge	analyse requirements to a specified client brief
(Skills to develop, experience	identify success criteria
and practice)	identify the different entities within a specified client brief
	design a database structure including tables, relationships, forms,
	queries, reports, fields, primary and foreign keys, data types, field
	properties, validation rules minimising data redundancy
	give detailed justification for field types used
	• justify their choice of validation rules applied to field types.
	Learners should be able to:
	create and add tables
	add fields
	create a primary key
	assign appropriate data types
	apply effective validation rules and error messages
	<ul> <li>link tables using key fields and relationships</li> </ul>
	• import data from a given CSV file
	add, edit and delete records
	<ul> <li>check and test data to ensure it is error-free</li> </ul>
	<ul> <li>check and test the database to ensure it functions correctly.</li> </ul>
	Learners should be able to:
	<ul> <li>create select queries, using a query builder including single</li> </ul>
	table/single criteria; multiple tables/multiple criteria; wildcard;
	parameter, calculations
	<ul> <li>produce reports from queries, with at least one report showing</li> </ul>
	customisation for fitness of purpose.
	Learners should be able to:
	<ul> <li>create effective data entry forms that simplify data entry and</li> </ul>
	navigation, include relevant fields and accept data and validation
	<ul> <li>enhance layout of the form to include an image for business</li> </ul>
	purposes
	<ul> <li>add features and controls that make the system user friendly and</li> </ul>
	allow the user to navigate records, forms, queries and reports
	easily, visual basic (VB) and/or macro.
	<ul> <li>provide a test plan and select a range of test data including valid,</li> </ul>
	extreme and erroneous data
	give detailed reasons for all testing methods
	give evidence for the testing carried out to test plan including
	evidence of test pass/fail
	<ul> <li>evaluate the testing successes and failures and identify</li> </ul>
	improvements
Next Steps	Spreadsheet
Summative Assessment	Coursework unit
Independent Learning Tasks	Create a database
	Curriculum Hinterland
	context and relevance to support the overall narrative of our core curriculum"
	ne purposes of teaching, we reduce the curriculum to just the core, we may make it
	harder to teach, and at worst, we kill it."
	(Edited Quote) Christine Counsell
Interdisciplinary Knowledge	Data/Information. Primary/Secondary sources
Real World Connections and	Real world business scenario
Authenticity	
Personal Development	Understanding of a running business and it's requirements





## Task 2: Planning, creating, modifying, and using spreadsheets

"The core is like a residue – the things that stay, the things that can be captured as proposition. Often, such things	
need to be committed to memory."	
Builds on	Christine Counsell Y7 Spreadsheets, Databases, programming
Retrieval opportunities	Tr spieddsneeis, Daidbases, piogramming
Procedural, Experimental and	Learners should be able to:
Disciplinary Knowledge	<ul> <li>analyse requirements to a specified client brief</li> </ul>
(Skills to develop, experience	identify success criteria
and practice)	<ul> <li>design a spreadsheet structure including worksheets, navigation,</li> </ul>
	formulae, tools and techniques to be applied.
	Learners should be able to:
	<ul> <li>import data from a CSV file and generate content of their own</li> <li>enhance layout and format of the spreadsheet including font</li> </ul>
	style; font size; enhanced grids/borders; titles; colours; merged
	cells; cell alignment; text wrap; headers or footers; forms;
	worksheet tab
	<ul> <li>facilitate data entry through use of form controls, e.g., buttons,</li> </ul>
	check box, drop-down lists, combo boxes, spinners, scroll bar
	define a print area in order to present a customer-friendly output
	create a navigation menu in order to customise and simplify the
	client's use of the workbook. Learners should be able to use:
	<ul> <li>data formatting, (e.g., currency, %, decimal places)</li> </ul>
	conditional formatting
	use of date/time function
	<ul> <li>facilitate data entry through use of validation form controls, e.g.,</li> </ul>
	drop-down lists, combo boxes, spinners, scroll bar
	validation checks, e.g., range, type, presence, format
	validation messages.
	Learners should be able to use: formula with single operator (+ + * ())
	<ul> <li>formula with single operator (+, -, *,/)</li> <li>brackets to prioritise calculation</li> </ul>
	<ul> <li>simple function SUM, AVERAGE, MAX, MIN, RAND, COUNT,</li> </ul>
	COUNTA, COUNTIF, INT/ MOD
	relative and absolute referencing
	<ul> <li>complex functions e.g., IF, nested IF, IF(OR), IF(AND), SUMIF,</li> </ul>
	AVERAGEIF, VLOOKUP, COUNTIF, goal seek, pivot tables
	macros to link native function.
	Learners should be able to:
	<ul> <li>use sorting on single items</li> <li>use sorting on multiple items</li> </ul>
	• use filters
	<ul> <li>create a chart/graph with appropriate title legend axis labels and</li> </ul>
	formatting.
	Learners should be able to use:
	<ul> <li>'what if' investigations to change data</li> </ul>
	'what if' investigations to change formula.
	Learners should be able to:
	provide a test plan and select a range of test data including valid,     avtrame and erroneous data
	extreme and erroneous data • use a test table, based on the success criteria
	<ul> <li>give detailed reasons for all testing methods</li> </ul>
	give evidence for the testing carried out
	evaluate the testing successes and failures and identify
	improvements
	suggest how to implement these improvements
Next Steps	Automated Document, BTEC, A Level
Summative Assessment	Coursework Unit
Independent Learning Tasks	Create a spreadsheet
	Curriculum Hinterland
"This provides essential	context and relevance to support the overall narrative of our core curriculum"





"If, in certain subjects, for the purposes of teaching, we reduce the curriculum to just the core, we may make it		
	harder to teach, and at worst, we kill it."	
(Edited Quote) Christine Counsell		
Interdisciplinary Knowledge	Data/information, invoicing	
Real World Connections and	Invoicing business scenario	
Authenticity		
Personal Development	Finance knowledge	





#### Task 3: Planning, creating, and modifying an automated document

<b>Core Curriculum</b> "The core is like a residue – the things that stay, the things that can be captured as proposition. Often,	
such things need to be committed to memory."	
	Christine Counsell
Builds on	Y7 Media, Spreadsheets
Retrieval opportunities	Tr Media, spreadsheets
Substantive Knowledge	
Facts, figures, dates etc	
Procedural, Experimental	Learners should be able to:
and Disciplinary	analyse requirements to a specified client brief
Knowledge	identify success criteria
(Skills to develop,	• design a standard document including location of place holders,
experience and practice)	formatting and features to be used.
	Learners should be able to:
	<ul> <li>create a standard document</li> </ul>
	create a source document
	<ul> <li>create appropriately divided fields</li> </ul>
	<ul> <li>create appropriate data within the fields</li> </ul>
	<ul> <li>create a link between the data source and standard document.</li> </ul>
	Learners should be able to:
	<ul> <li>insert appropriate fields: address line; subject; salutation/</li> </ul>
	valediction; personalised content within document
	check accuracy: spelling; grammar; proofread
	<ul> <li>add appropriate formatting and features: letterhead;</li> </ul>
	watermark; autodate; alignment; set line spacing; justification;
	indexing; automatic fields; bullets; appropriate layout.
	Learners should be able to:
	complete the merge and check accuracy     accuracy
	<ul> <li>check formatting following insertion of merged data</li> <li>output merged documents</li> </ul>
	<ul> <li>evaluate the document and identify improvements</li> </ul>
Next Steps	BTEC, A Level
Summative Assessment	Coursework Unit
Independent Learning	Create an automated document
Tasks	Curriculum Hinterland
"This provides essential co	ntext and relevance to support the overall narrative of our core curriculum"
	the purposes of teaching, we reduce the curriculum to just the core, we may
	make it harder to teach, and at worst, we kill it."
	(Edited Quote) Christine Counsell
Interdisciplinary	Writing to an audience, Marketing
Knowledge	
Real World Connections	Marketing links to real world scenario
and Authenticity	
Personal Development	Ethical discussion of the need to message customers in this way.





# Task 4: Planning, creating, manipulating, and storing images

Core Curriculum	
"The core is like a residue – the things that stay, the things that can be captured as proposition. Often,	
	such things need to be committed to memory."
Christine Counsell	
Builds on	Y8 Media
Retrieval opportunities	
Substantive Knowledge	
Facts, figures, dates etc	
Procedural, Experimental	Learners should be able to:
and Disciplinary	<ul> <li>analyse requirements to a specified brief</li> <li>identify success criteria</li> </ul>
Knowledge	<ul> <li>plan design (sketches and layouts) with annotations</li> </ul>
(Skills to develop,	<ul> <li>identify and select image source self-taken (camera/scanner)</li> </ul>
experience and practice)	images from 3rd party: images from internet or another
	secondary source
	<ul> <li>identify key qualities of image (e.g., size, format) and limitations</li> </ul>
	to editing
	<ul> <li>identify any copyright or intellectual property rights and reference source.</li> </ul>
	Learners should be able to:
	<ul> <li>compare file types (png, tiff, jpeg) and fitness for purpose (size,</li> </ul>
	resolution, scalability)
	select software according to image type (vector/raster)
	<ul> <li>select image properties (RGB/CMYK) and canvas size based on output requirements</li> </ul>
	<ul> <li>import image/create image using tools/create hybrid image</li> </ul>
	<ul> <li>use standard and advanced tools to create and modify image</li> </ul>
	Standard:
	Select marquees, lassos, cut, copy, crop, move, group, rotate,
	distort, enlarge/shrink, magic wand, bring to front/send to back,
	brushes/pencil, adjust line thickness/style, simple lines, shapes,
	curves (freehand and auto), fill, add text, edit text Advanced:
	Blur, blend, smudge, sharpen, colour mode, brightness, contrast,
	layers, merge layers, masking/mask layer, change alpha, cloning,
	background eraser, airbrush, gradient.
	Learners should be able to:
	store image(s) using version control
	<ul> <li>store images using appropriate file type (vector or raster)</li> <li>output final version in optimised format</li> </ul>
	<ul> <li>test the file types electronically and digitally for fitness for</li> </ul>
	purpose
	• evaluate final product against success criteria, identifying possible
	improvements
Next Steps	Database, Spreadsheet, automated letter
Summative Assessment	Coursework Unit
Independent Learning	Create a business logo
Tasks	
Curriculum Hinterland	
"This provides essential context and relevance to support the overall narrative of our core curriculum"	
"If, in certain subjects, for the purposes of teaching, we reduce the curriculum to just the core, we may make it harder to teach, and at worst, we kill it."	
(Edited Quote) Christine Counsell	
Interdisciplinary	Image creation, copyright
Knowledge	
Real World Connections	An investigation and discussion of what a real world logo looks like and why
and Authenticity	
Personal Development	Online safety: Copyright issues
	a