

## Year 13 BTEC Computing Sequence

Year	Content Taught	Reference	Essential Knowledge	Assessment	Rationale
Year 13	BTEC Computing				
KS5	Fundamentals of	Computing facts, terms,	<ul><li>Demonstrate</li></ul>	Formative	The Essential Knowledge of
	Computer Systems	standards, concepts	knowledge and	Review and recall assessment	BTEC Computing is
		and processes	understanding of	tasks on essential knowledge	concerned both with
			computing facts,	in each lesson.	computers and computer
HT1			terms, standards,	Computing Systems Activities	systems – how they work
			concepts and	Summative	and how they are designed,
			processes	Recall Tests, PPEs, exams	constructed, and used.
				Formative	
			Draws on essential	Review and recall assessment	The Essential Knowledge of
			knowledge learned in KS4	tasks on essential knowledge	Demonstrate knowledge
	IT Contains Commits			in each lesson.	and understanding of
	IT Systems Security	Understand current IT	■ Threat types eg	Summative	computing facts and terms,
	and Encryption	security threats,	viruses, Computer	Students will complete an in-	standards, concepts and
		information security and	network-based	class assessment containing	processes in
		the legal requirements	threats	the questions below:	Computing is concerned
		affecting the security of IT	<ul><li>Information security</li></ul>		both with computers and
		systems			computer systems – how
Bring it all	they work and how they				
Unit 2	are designed, constructed,				
What are t	and used. This builds upon				
Explain the	previous learning from Unit				
What are the different optical storage media?					1 in GCSE Computer
What is a r	Science (Computer				

systems), and also builds What is the difference between CISC and RISC? Unit 7 upon understanding learnt Explain the different security threats in Unit 2 of the BTEC What are different internal threats course (Fundamentals of What is social engineering Computer Systems). What are passive threats What is intellectual property The Essential Knowledge of Apply knowledge and **Fundamentals of** Formative Understand current IT HT2 Apply **Computer Systems** knowledge understanding of Students will security threats, and complete of information security and understanding retrieval computing facts, exercises each computing facts, terms, standards. the legal requirements terms, lesson to review and recall affecting the security of IT standards, concepts and concepts and knowledge from previous processes to real-life processes to real-life lessons and apply this systems, is covered by Unit knowledge alternate 1 in GCSE computer science scenarios scenarios to deepen (Computer systems), and scenarios to Unit 1 BTEC computing understanding. **IT Systems Security** Understand current IT Legal requirements e.g., (Principles of Computer and Encryption Summative Science). security threats. DPA information security and Students will complete an in-Impact of security The Essential Knowledge of, breaches and how it class assessment containing the legal requirements Select and use computing affecting the security of IT affects organisations the questions below: technologies and systems procedures to explore likely outcomes and find **Bring it all together Assessment Questions** solutions to problems in Unit 2 context, is covered by Unit List the stages of the fetch execute? 1 in GCSE computer science What is the difference between you nueman and Harvard architecture? (Computer systems), and What is cache? Unit 1 BTEC computing What bis multi-processing? (Principles of Computer What is overclocking and what is the clock speed?

Science). It is also covered

Schema

User

KS3

(Spreadsheet,

in

Unit 7

What is copyright?

What is the computer misuse act?

What are	physical threats?				Interface and database
What are the principals of confidentiality?					tasks)
What is forensic research?					The Essential Knowledge of
HT3	Fundamentals of	Select and use computing		Formative	Investigate cryptographic
	<b>Computer Systems</b>	technologies and		Students will complete	techniques and processes
		procedures to explore		retrieval exercises each	used to, is covered by Unit 1
		likely outcomes and find		lesson to review and recall	BTEC computing (Principles
		solutions to problems in		knowledge from previous	of Computer Science). It is
		context	<ul><li>Cryptographic principles</li></ul>	lessons and apply this	also covered in KS3 Schema
	IT Systems Security		Cryptographic methods	knowledge to alternate	(Esaftey unit
	and Encryption	Investigate cryptographic	Applications of	scenarios to deepen	
		techniques and processes	Cryptography e.g. 2FA,	understanding.	
		used to	Steganography		Computing is designed to
		protect data		Summative	support learners who are
				Students will complete an in-	interested in learning
				class assessment containing	about the computing
				the questions below:	sector alongside other
					fields of study, with a view
Bring it al	ll together Assessment Q	<u>uestions</u>			to progressing to a wide
Unit 2					range of higher education
What is the Kernel?					courses, not necessarily in
What is utility software?					the computing sector.
How does	s defragging work?				
What is a single user OS?					
How does OS deal with Disc access?					The core study of
What are the 3 different ways to interface with OS?					computing encompasses
Unit 7					programming languages,
What is DRM?					data structures, algorithms,
What is cryptography?					and the underlying science
How do VPN's work?					of information and
What is obfuscation?					computation. The course
How is SALTS used in password storing?					offers students access to

HT4	Fundamentals of	Analyse and evaluate	Draws on essential	Formative	subject knowledge and
	<b>Computer Systems</b>	data, information,	knowledge learned in KS3 &	Students will complete	essential knowledge in
		technologies and	KS4	retrieval exercises each	computer science and
		procedures in order to		lesson to review and recall	computer systems,
		recommend		knowledge from previous	enabling them to progress
		and justify solutions to		lessons and apply this	to further study of the
		computing problems		knowledge to alternate	computing sector or other
				scenarios to deepen	sectors.
				understanding.	
	IT Systems Security				The Essential Knowledge of,
	and Encryption	Examine the techniques	<ul><li>Physical security, Policies</li></ul>	Summative	Make connections between
		used to protect an IT	and procedures,	Students will complete an in-	the application of
		system from	Software-based	class assessment containing	technologies, procedures,
		security threats	protection eh anti-virus,	the questions below:	outcomes and
			Firewalls		solutions to resolve
					computing problems,
Bring it al	ll together Assessment Qu	<u>iestions</u>			provides knowledge that
Unit 2					has been developed in both
How do n	etworks control security?				Unit 1 and Unit 2 of GCSE
What is th	ne difference between Ope	en source and Proprietary soft	ware?		computing (Computer
List the 6	functions of Data processi	ng?			systems and Computational
What is B	thinking, algorithms and				
How do y	ou times Binary numbers?				Programming)
Unit 7					
How do y	ou physical secure a comp	uter?			The Essential Knowledge of
How do y		Implement strategies to			
What are	protect an IT system from				
What is m	neant by the term managir	ng patches and how does this	effect security?		security threats, is covered
How does	a firewall protect a comp	uter system?			by Unit 1 BTEC computing
HT5	Fundamentals of	Make connections		Formative	(Principles of Computer
	Computer Systems	between the application		Students will complete	Science) and Unit 2 of the
		of technologies,		retrieval exercises each	BTEC course (Fundamentals
				lesson to review and recall	of Computer Systems).

	T		1			
		procedures, outcomes			knowledge from previous	
		and			lessons and apply this	
		solutions to resolve			knowledge to alternate	Students focus on
		computing problems			scenarios to deepen	knowledge, understanding
	IT Systems Security		•	Group policies, Anti-	understanding.	and essential knowledge of
	and Encryption			malware protection,		software and hardware that
				Firewall configuration,	Summative	is used within ICT in
		Implement strategies to		Wireless security, Access	Students will complete an in-	industry and across the
		protect an IT system from		control	class assessment containing	technology sector.
		security threats			the questions below:	
Bring it all 1	 together Assessment Que	estions				Principles of Computer
Unit 2						Science underpins all areas
How do you	u divide binary numbers?					of computer science. It will
What is ASC	CII code?					develop your
How are im	ages represented in binar	·y?				computational-thinking
What are th	What are the different types of compression?					essential knowledge and
What is the difference between a list, stack and array?					you will apply those	
Unit 7					essential knowledge to	
How does a	How does antivirus software protect a computer system?					solve problems.
What is use	er authentication?					
How does o	choice of OS effect the sec	curity of a system?				
How does in	ntrusion detection system	n stop a computer from being	yul	nerable?		This will lead to students
What are th	ne steps for a successful d	isaster recovery policy?				being able to gain future
HT6	Fundamentals of	Implement strategies to			Formative	employment within the
	Computer Systems	protect an IT system from	-	Testing and reviewing	Students will complete	Computing sector, study for
		security		protection applied to an	retrieval exercises each	an apprenticeship or apply
		threats		IT system, Essential	lesson to review and recall	for university.
				knowledge, knowledge	knowledge from previous	
				and behaviours	lessons and apply this	
					knowledge to alternate	
	IT Systems Security				scenarios to deepen	

understanding.

and Encryption

	Summative Students will complete an inclass assessment containing the questions below:
Bring it all together Assessment Questions	
Unit 2	
Describe an indices?	
Describe a matrix?	
What is packet switching?	
Name the protocols for data transmission?	
Name and complete truth tables for Boolean lo	
Unit 7	
What are group policies?	
What is access control?	
What is Audit and event viewer on Windows O	
What is the difference between protection and	vention when creating a policy for users?
Hat is the type of security on Wireless network	