

**KS3: Using Computers safely, effectively and responsibly**

<b>Name:</b>		<b>TARGET</b>					
<b>HWK Mark</b>		<b>Assessment Result:</b>	<b>SBE</b>	<b>BE</b>	<b>E</b>	<b>AE</b>	<b>SAE</b>

<b>KEYWORDS</b>			<b>Unit Description</b>			
Folder/ subfolder	cyberbullying	email provider	<p>This is a theoretical unit covering the necessary basic knowledge to use computers safely, effectively and responsibly. Pupils begin by looking at file management and security. The unit then moves on to e-safety (cyber-bullying, phishing etc.), and online profiles to give pupils a better understanding and awareness of using social media. The functionality and operation of email and search engines and how to use them effectively are covered, and a final lesson includes a multiple choice test on the contents of the unit and basic computer use.</p> <p><b>Homework</b> is given for each lesson. These consist of a mixture of short, factual questions assessing knowledge in isolation and longer questions in which students are asked to analyse a situation or justify their answer to questions.</p> <p>The <b>final assessment</b> is a multiple choice set of questions covering content from this unit of study.</p>			
root folder/directory	online profile	salutation				
Recycle bin	privacy settings	email signature				
Backup	phishing	Carbon Copy (CC)				
shortcut key	hacking	Blind Carbon copy				
backup	biometrics	Attachment				
zip	encryption	search engine				
social networking	virus	server				
<b>NATIONAL CURRICULUM LINK</b>						
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						

<b>Please Tick off Criteria that you have met during this cycle of work</b>		✓
<b>7-9</b>	describe why the information they find may not be accurate	
	use the advanced features of a search engine	
	describe guidelines for keeping their identity secure on the Internet	
<b>6 - 7</b>	manage a Contacts list efficiently for email	
	use an email signature	
	describe what is meant by identity theft and how to minimize the risks of this	
<b>5</b>	identify a probable phishing email and deal with it appropriately	
	describe how to minimize the danger of having their computer infected by a virus	
	explain the advantages and disadvantages of email as a method of communication	
	use basic file management techniques to create folders, save, copy, move, rename and delete files and folders and make backup copies of files	
	send and reply to emails, send attachments	
<b>4</b>	use a search engine to find information	
	keep their files in well organised and appropriately named folders	
	explain what constitutes a "strong" password for an online account	
	list some possible responses to cyberbullying	
	list some of the dangers and drawbacks of social networking sites	
<b>PREVIOUS LEARNING</b>		
All pupils will have a basic knowledge of using a computer, creating and managing files. They may already have email accounts and be able to send and receive emails, and will have used a search engine such as Google.		

KS3: Understanding Computers							
Name:					TARGET		
HWK Mark		Assessment Result:	SBE	BE	E	AE	SAE

KEYWORDS			Unit Description				
Input	decode	ASCII	<p>It is a theoretical unit covering the basic principles of computer architecture and use of binary. Pupils will revise some of the theory on input and output covered in previous learning and continue to look at the Input-Process-Output sequence and the Fetch-Decode-Execute cycle through practical activities. Pupils will then look at some simple binary to decimal conversion and vice versa, and learn how text characters are represented using the ASCII code. This will be followed by some simple binary addition. Pupils will learn more in depth how storage devices represent data using binary patterns and physically save these patterns. Finally, they will look at a brief history of communication devices, how new technologies and applications are emerging and the pace of change.</p> <p><b>Homework</b> is given for each lesson. These consist of a mixture of short, factual questions assessing knowledge in isolation and longer questions in which students are asked to analyse a situation or justify their answer to questions.</p> <p>The <b>final assessment</b> is an end of unit test</p>				
Process	execute	Code					
Output	binary	Pits					
Device	conversion	Lands					
Hardware	memory	Burn					
Software	RAM	Read					
Fetch	ROM	write					
Input	Denary	data					
NATIONAL CURRICULUM LINK							
<ul style="list-style-type: none"> <li>Understand the hardware and software components that make up computer systems, and how they communicate with one another and with other systems</li> <li>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; be able to convert between binary and decimal, and perform simple binary arithmetic</li> </ul>							

Please Tick off Criteria that you have met during this cycle of work		✓
7-9	Use an ASCII reference chart to convert a character into binary and its decimal equivalent	
	Explain how characters are encoded using the ASCII system	
	Identify input and output devices for more complex scenarios	
6 - 7	Perform simple binary arithmetic	
	Describe briefly how data is stored on a CD	
	Explain the impact of future technologies	
5	State strengths and weaknesses of different storage devices	
	Distinguish between hardware and software	
	Suggest appropriate input and output devices for a simple scenario	
	Show how numbers and text can be represented in binary	
	Give examples of computer hardware and software	
4	Explain what RAM and ROM are used for	
	Name different types of permanent storage device	
	Draw a block diagram showing CPU, input, output and storage devices	
PREVIOUS LEARNING		
No previous learning is necessary with this unit. Many pupils may have a basic understanding of binary and its use to represent text and images from previous years. They may also have an understanding of input and output devices and their role in the Input – Process – Output sequence.		

KS3: Spreadsheet Modelling							
Name:					TARGET		
HWK Mark		Assessment Result:	SBE	BE	E	AE	SAE

KEYWORDS			Unit Description
Model	Format	relative reference	<p>This unit is a practical, skills-based unit covering the principles of creating and formatting basic spreadsheets to produce and use simple computer models. It is suitable for pupils who have a basic knowledge of spreadsheets including cell references, simple formulae and formatting, although these topics are revised in the first lesson, making it also suitable for pupils new to spreadsheets. The unit is centred on creating a financial model for a TV show. Pupils start by looking at different types of model and then use basic spreadsheet techniques to create and format a simple financial model to calculate the expected income from viewers' voting. The model is then extended to include sales from merchandising, with the introduction of "what if" scenarios. Finally the pupils create a seating plan, book seats and calculate income from seat sales. Spreadsheet features covered include SUM, MAX, IF and COUNTIF functions, cell naming for absolute referencing, conditional formatting, validation, charting and simple macros.</p> <p><b>Homework</b> is given for each lesson. These consist of a mixture of short, factual questions assessing knowledge in isolation and longer questions in which students are asked to analyse a situation or justify their answer to questions.</p> <p>Pupils will create an <b>Assessment</b> Portfolio showing their final spreadsheet. They will also answer questions on spreadsheet modelling and complete a self-assessment.</p>
Simulation	Decimal	absolute reference	
Cell	Integer	validation	
Row	Currency	macro	
Column	Formula	Pie chart	
NATIONAL CURRICULUM LINK			
Design, use and evaluate computational abstractions that model the state and behaviour of real-world problems and physical systems.			

Please Tick off Criteria that you have met during this cycle of work		✓
7-9	Evaluate the effectiveness of a computer model	
	Customise a chart to present information effectively	
	Create a macro and assign it to a button on the spreadsheet	
6 - 7	Present information from a spreadsheet model in a variety of formats	
	Justify the formatting they have used in a spreadsheet model	
	Use a spreadsheet model to predict and test the outcomes for different scenarios	
5	Use conditional formatting	
	Use conditional functions in calculations	
	Format, construct and manipulate a simple spreadsheet model using formulae	
	Explain the advantages of naming cells in a spreadsheet model	
	Use a simple spreadsheet model to explore different "what if" scenarios	
4	Create a basic pie chart to display results	
	Use simple formulae and functions	
	Give examples of how computer models are used in the real world	
	Format a simple spreadsheet model	

**PREVIOUS LEARNING**

*The tasks in this unit assume that most pupils will have some experience of creating basic spreadsheets from Key Stage 2.*

KS3: First Steps in Small Basic								
Name:					TARGET			
HWK Mark		Assessment Result:	SBE	BE	E	AE	SAE	

KEYWORDS		Unit Description
Syntax	variable	<p>This unit is an introduction to programming in a textual language designed to make programming easy and approachable for beginners. It starts by introducing Turtle graphics, leading to the use of variables and <b>For...EndFor</b> loops. Simple programs using the Text window are used to introduce input, output and selection. Pupils will get used to these programming statements while having fun producing coloured graphics and making a simple screensaver. They will learn the importance of writing statements accurately, documenting their programs and finding out for themselves in a very visual way how different program statements work.</p> <p><b>Homework</b> is given for each lesson. These consist of a mixture of short, factual questions assessing knowledge in isolation and longer questions in which students are asked to analyse a situation or justify their answer to questions.</p> <p>Pupils will complete an <b>assessment portfolio</b> at the end of the Unit. They will amend an existing program to create a screensaver, paste in evidence of their finished program and complete a brief self-assessment.</p>
programming environment	loop	
Intellisense	selection	
graphics window	random number	
NATIONAL CURRICULUM LINK		
Use two or more programming languages, one of which is textual, to solve a variety of computational problems; make appropriate use of data structures; design and develop modular programs that use procedures and functions.		

Please Tick off Criteria that you have met during this cycle of work		✓
7-9	Create an effective screensaver which runs until the user stops it	
	Add scoring to their quiz game	
6 - 7	Use variables effectively to create repeating patterns	
	Use the graphics window to draw different shapes in random colours	
5	Find and correct logic errors in a program	
	Use a While...EndWhile loop in a program	
4	Identify and correct syntax errors in a program	
	Create a simple quiz game	
	Write and run programs in Small Basic using For...EndFor loops, variables, input output and selection statements	
PREVIOUS LEARNING		
<i>No previous knowledge of programming is required</i>		

KS3: Introduction to Python							
Name:					TARGET		
HWK Mark		Assessment Result:	SBE	BE	E	AE	SAE

KEYWORDS			Unit Description				
data type	logic error	IDLE	<p>The unit is an introduction to Python, a powerful but easy-to-use high-level programming language. Although Python is an object-oriented language, at this level the object-oriented features of the language are barely in evidence and do not need to be discussed. The focus is on getting pupils to understand the process of developing programs, the importance of writing correct syntax, being able to formulate algorithms for simple programs and debugging their programs. The pupils' final programs are put into a learning portfolio with evidence of correct running, for assessment purposes.</p> <p><b>Homework</b> is given for each lesson. These consist of a mixture of short, factual questions assessing knowledge in isolation and longer questions in which students are asked to analyse a situation or justify their answer to questions.</p> <p>For the <b>assessment</b> Pupils will write and run a program and submit the code and screenshots of the program running in a learning Portfolio.</p>				
integer	debug	interactive mode					
float	binary search	Script mode					
round	Variable	String					
BIDMAS	Syntax	Sequence					
Selection	Iteration	syntax error					
NATIONAL CURRICULUM LINK							
<ul style="list-style-type: none"> <li>Use two or more programming languages, one of which is textual, to solve a variety of computational problems; make appropriate use of data structures; design and develop modular programs that use procedures and functions</li> <li>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.</li> </ul>							

Please Tick off Criteria that you have met during this cycle of work		✓
7-9	Devise their own algorithms to solve reasonably complex problems, e.g. a binary search	
	Test and debug their programs, and correct both syntax and logic errors	
	Make allowances in their programs for user input errors, ensuring that the program still runs to a successful conclusion – which may include printing an error message and stopping the run	
6 - 7	Write an error-free, well-documented program involving selection and iteration	
	Explain the advantages of a binary search over a linear search for an ordered list	
	Distinguish between syntax and logic errors and be able to find and correct both types of error	
	Use relational operators to control the order in which program statements are executed and in what order (if and while statements)	
5	Describe how a binary search is carried out	
	Correctly use different variable types (e.g. integer and floating point), assignment statements, arithmetic operators	
	Write pseudocode to outline the steps in an algorithm prior to coding	
4	Write programs using different types of data (e.g. strings and integers)	
	Use comments to document their programs and explain how they work	
	Run simple Python programs in Interactive and Script mode	

**PREVIOUS LEARNING**

*No previous learning is necessary with this unit. Pupils may have had some experience of using variables and with a variety of relational operators such as **If** and **Repeat** in graphical block-based languages such as Scratch. Applying this knowledge will help their understanding of a text-based language such as Python.*