

Half term	Unit title	Key knowledge/ Content to learn and retain	Essential skills to acquire (subject & generic)	Link to subject ethos and driver	Anticipated misconceptio ns	Links to previous KS	Links to future KS	Opportunity for stretch for high prior attainers	SMSC & British Values	Cultural Capital	Career Link
HT1	Getting started	Know and understand the key concepts and principles of Computing: Know the processes for logging into the academy network and Google Suite for education Know the process for sending and receiving emails Understand how to save, rename and organise files Understand how to access files stored in the cloud Understand the key principles of internet safety Understand the qualities of vector and bitmap graphics	Apply knowledge and understanding to the key concepts of Computing: Log into the academy's network and Google Education suite proficiently Send and receive emails successfully, using appropriate language and content Organise files and folders to facilitate ease of access and use Demonstrate safe practices when using the internet Be able to create and	Users are responsibl e, competent, confident and creative users of information and communic ation technology	Text talk in emails Differences between files and folders Different types of images - the difference between them What makes a good password	No prior learning is necessary, although it is expected that students will be familiar with computers and will have had some experience using email and word processing software. KS2 NC outcome: Understand computer networks, including the internet; how they can provide multiple services, such as the WWW, and the	The skills learnt during this first half-term will be necessary for a range of subjects (not just computing) where the network is used.	CC and BCC in email - what is the difference? Challenge tasks will be built into all lessons - refer to MTP	Resilience is taught through the lessons when students are pushed to achieve their best, moving out of their perceived limits at times and getting the deserved rewards as a result. Mutual respect for tolerance of those with different levels of understandin g and knowledge - peer support. Copyright - rule of law - discussed	We encourage students to read newspapers We encourage students to watch the news Current affairs are incorporated into lessons Make links to 'real life'	Any jobs working with computers will require users to work with files and folders - this will help prepare them for the world of work. NC Link: 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

			manipulate images Analyse problems in computational terms: Identify the most appropriate tools to use when editing an image Develop confident and responsible use of modern information technologies Demonstrate proficiency in using the academy's network and computing facilities Using image-editing software with confidence			opportunities they offer for communicati on and collaboration			when using images Rule of Law is taught through lesson themes as well with school rules also being adhered to and considered at all times.		know how to report concerns. Create, re-use, revise and re-purpose digital artefacts for a given audience, with attention to trustworthines s and design Understand how data of various types (including text, sounds and pictures) can be represented and manipulated digitally, in the form of binary digits.
HT2	Introduci ng Spreads heets	Understand how to write basic formulae in a spreadsheet Understand the concept of replication and the uses of relative and absolute cell referencing Understand how to name cells and ranges within a spreadsheet	Use a range of basic formulae to manipulate data Use conditional formatting Create graphs and charts to represent different types	Solving mathemati cal problems using IT Analytical skills Data representat ion	The different operators used / * (different from maths). Selecting relevant data for charts and labelling these appropriately.	Students will need to understand basic arithmetic; addition, subtraction, multiplication and division KS2 NC Link: Select, use	KS4 NC outcome: Develop and apply their analytic, problem-solvi ng, design and computationa I thinking skills	Challenge tasks will be built into all lessons, but specific functions and skills will be targeted for challenge work from the Y8 spreadsheet unit. For	Mutual respect for each other - peer reviewing and support is encouraged. Resilience is taught through the lessons	We encourage students to read newspapers We encourage students to watch the news Current	Career links: Data controller Analysts Financial jobs such as accountants. Business roles, e.g.

		a film for more stille	Mar da Illia a		and a such h	Links to both				
	Understand how to	of information	Nodelling	formulas and	and combine	Links to both	example Fiself state	wnen students are	affairs are	management
	write a range of basic	Identify the	outcomico	functions are	software	Computing	ments	pushed to	into lessons	NC Link:
	functions, including	most	Trial and	used.	(including	curriculums		achieve their		Destaur
	SUM, AVERAGE, MAX MIN COUNT	functions to	error		services) on	at K54 and 5		out of their		and evaluate
	and IF	use when	Resilient		a range of	0.		perceived	Make links	computational
		developing	learners		digital			limits at	to 'real life'	abstractions
	conditional formatting	for a particular			systems and			times and	examples	that model
	contaitional formatting	purpose			accomplish			deserved		behaviour of
	Understand how to use				given goals,			rewards as a		real-world
	to create graphs and	most			collectina.			result.		problems and physical
	charts	appropriate			analysing,ev			Rule of Law		systems
		chart of graph			aluating and			is taught		Undortako
		different types			data and			lesson		creative
		of information			information.			themes as		projects that
		Become						well with		INVOIVE
		proficient in						also being		using, and
		the use of						adhered to		combining
		to handle data						ano considered at		applications.
		in a variety of						all times.		preferably
		situations								across a
		Interpret data								devices, to
		from								achieve
		spreadsheets								challenging
										including
										collecting and
										analysing data and
										meeting the
										needs of
										KHOWH USERS

				also being adhered to and considered at all times.	s, design and usability
				Liberty – It is important to have students understand their freedoms as	
				well as knowing how these fit in with the school ethos. Students will know their rights as	
				and will know both what to expect and what is expected of them.	
				Mutual respect for tolerance of those with different faiths and beliefs, and for those without faith is important	
				Resilience is taught through the lessons when students are	

									pushed to achieve their best, moving out of their perceived limits at times and getting the deserved rewards as a result.		
HT5	Scratch	Understand the concepts of sequencing, selection and iteration	Develop working programs in Scratch Analyse the requirements of a program Identify the processes needed to solve a problem, Design programs in Scratch to solve specific problems Use Scratch confidently to solve a range of problems.	Logical reasoning Computati onal thinking can analyse problems in computatio nal terms, and have repeated practical experience of writing computer programs in order to solve such problems	Misconceptio ns alongside what different blocks of code are used for and the difference between different angles when making shapes and things such as forever and repeat loops.	There is no requirement for students to have used Scratch before, although prior knowledge of Scratch may be useful. Students will be performing calculations in scratch to an understandin g of basic arithmetic operators (addition, subtraction, multiplication and division is needed). KS2: use sequence, selection, and repetition in programs; work with variables and	Programming links to the KS4 computing curriculum. NC outcomes: develop and apply their analytic, problem-solvi ng, design, and computationa I thinking skills develop their capability, creativity and knowledge in computer science, digital media and information technology	Challenge tasks will be built into lessons - refer to MTP, In this unit, students will be encouraged to show additional skills when they develop their code.	Rule of Law is taught through lesson themes as well with school rules also being adhered to and considered at all times. Individual Liberty – It is important to have students understand their freedoms as well as knowing how these fit in with the school ethos. Students will know their rights as individuals and will know both what to expect and what is expected of	We encourage students to read newspapers We encourage students to watch the news Current affairs are incorporated into lessons Make links to 'real life' examples	Career links: Software developer roles Programmers Mathematicia ns NC Links: use two 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

						various forms of input and output Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems, solve problems by decomposing them into smaller parts.			them. Mutual respect for tolerance of those with different faiths and beliefs, and for those without faith is important Resilience is taught through the lessons when students are pushed to achieve their best, moving out of their perceived limits at times and getting the deserved rewards as a result.		use procedures or functions Design, use and evaluate computational abstractions that model the state and behaviour or real-world problems and physical systems
HT6	Computi ng compone nts	Know about and understand the function of a range of input and output devices Know about and understand different types of memory and storage and their use	Identify the correct input and output devices to use in a range of different situations.	Evaluation skills Analysis skills Literacy skills Presentatio n skills Technical knowledge	Devices that are 'all in one' and how these can be classified. Storage sizes and calculations of these.	There is no requirement for students to have had any prior learning about computer components. However, they will need basic arithmetic to convert between different	Links to KS4 IT and Computing curriculums.	Challenge work will be built into all lessons - refer to MTP. In particular students may start to look in more depth at what devices are used for and how technology is emerging so	From an environment al standpoint students are encouraged to understand the ways that computer systems and parts can be recycled, reused and have extended lives. The	We encourage students to read newspapers We encourage students to watch the news Current affairs are incorporated into lessons	Career links: Computer technicians Network managers NC Links: understand the hardware and software components that make up computer

			storage units and basic spreadsheet skills to create a graph.	devices are often a mixture of input and output.	understandin g of environment al impacts is taught through lesson themes. Rule of Law is taught through lesson themes as well with school rules also being adhered to and considered at all times. Individual Liberty – It is important to have students understand their freedoms as well as knowing how these fit in with the school ethos. Students will know their rights as individuals and will know both what to expect and what is expected of them.	Make links to 'real life' examples	systems, and how they communicate with one another and with other systems Understand how instructions are stored and executed within a computer system Understand a range of ways to use technology safely, respectfully and responsibly, including protecting their online identity and privacy
					Resilience is		

				taught through the lessons when students are pushed to achieve their best, moving out of their perceived limits at times and getting the deserved rewards as a roou!t	
				result.	

## Skills developed throughout the programme

## Cognitive skills

- Non-routine problem solving expert thinking, metacognition, creativity.
- Systems thinking decision making and reasoning.
- Critical thinking definitions of critical thinking are broad and usually involve general cognitive skills such as analysing, synthesising and reasoning skills.
- ICT literacy access, manage, integrate, evaluate, construct and communicate.

## Interpersonal skills

- Communication active listening, oral communication, written communication, assertive communication and non-verbal communication.
- Relationship-building skills teamwork, trust, intercultural sensitivity, service orientation, self-presentation, social influence, conflict resolution and negotiation.
- Collaborative problem solving establishing and maintaining shared understanding, taking appropriate action, establishing and maintaining team organisation.

## Intrapersonal skills

• Adaptability – ability and willingness to cope with the uncertain, handling work stress, adapting to different personalities, communication styles and cultures, and physical adaptability to various indoor and outdoor work environments.

• Self-management and self-development – ability to work remotely in virtual teams, work autonomously, be self-motivating and self-monitoring, willing and able to acquire new information and skills related to work.