



Computing Threshold Concepts and Progression

Computing	1	2	3	4	5	6
Connect	personal information private. Can identify where to go for help and support when there are concerns about content or contact on the internet or other on-line technologies. <b>Vocabulary</b> Private/privacy Password Username Appropriate/inappropriate Media		Can use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour,Can use technology respectfully, resp and sensitively; recognise and identify risks and know how to report them.Can identify a range of ways to report concerns about content and contact.Can understand the impact of an on-li presence and how to be positive digit		e and identify potential eport them. act of an on-line	
			Vocabulary Copyright Plagiarism Malware Spam Hackers Trolls		Vocabulary Cookies Phishing Identity theft	
	Can understand the importance of keeping information, such as usernames and passwords, private and actively demonstrate this in lessons. Ask permission from a trusted adult to use technology and let them know what you are doing online. Know where to go for help (trusted adult) and identify which	Know the implications of inappropriate online searches. Can begin to understand how things are shared electronically such as posting work to a shared area. Can develop an understanding of using email safely.	Can demonstrate the importance of having a secure password and not sharing this with anyone else and can explain the negative implications of failure to keep passwords safe and secure. Can understand the importance of staying safe and the importance of their conduct when using	Can explore and explain key concepts relating to online safety. Can help others to understand the importance of online safety. Can understand the online safety implications associated with the ways the internet can	Can confidently recognise what personal information is and can explain how this can be kept safe. Can explain in some detail how credible a webpage is and the information it contains. Has a secure knowledge of common online safety	Can demonstrate the safe and respectful use of a range of different technologies and online services. Can identify more discreet inappropriate behaviours through developing critical thinking, e.g. looking at the best way to respond.





situations require adult	Know ways of reporting	familiar	be used to provide	rules and can apply	Can recognise the
help.	inappropriate behaviours	communication tools	different methods of	this by demonstrating	value in preserving
	and content to a trusted	such as email.	communication.	the safe and respectful	their privacy when
Has understood and	adult.			use of a few different	online for their own
signed up to the Valley		They know more than	Know a range of ways	technologies and	and other people's
KS1 Acceptable Use	Understand what a	one way to report	of reporting	online services.	safety.
Agreement and	digital footprint is and	unacceptable content	inappropriate content		
understands that this	that is cannot be erased.	and contact. Become	and contact.	Can implicitly relate	Can understand how
covers the use of		familiar with where to		appropriate online	digital content, online
technology in school and	Can identify safe search	report including CEOP.		behaviour to their	behaviour and social
at home.	engines appropriate for			right to personal	media can affect self-
	children.	Know that social		privacy and mental	esteem and the
		media has age		wellbeing of	wellbeing of
		restrictions on use.		themselves and	themselves and
				others.	others.
		Can identify what			
		makes a good Digital		Can distinguish	
		Leader to help peers		between facts and	
		stay safe online.		reliable news sources	
				and fake news.	
		Has understood and			
		signed up to the Valley		Start to understand	
		KS2 Acceptable Use		the legal aspects of	
		Agreement and		online activity such as	
		understands that this		age restrictions, file	
		covers the use of		sharing and	
		technology in school		downloads.	
		and at home.			





Communication	store, manipulate and retric common uses of information school.	an use technology purposefully to create, organise, tore, manipulate and retrieve content and recognise ommon uses of information technology beyond chool. an safely retrieve digital content.		Can understand computer networks, including the internet. Can use age appropriate search technologies and know how results are selected and ranked. Can understand that not all sources are reliable.		Can understand how computer networks are set up and used and how they provide services and opportunities. Can be discerning when evaluating digital content. Can select a variety of appropriate software across digital devices to create a range of content that accomplishes specific goals.	
	Vocabulary Retrieve Input Software Hardware Cursor Device Data		Formula Services		<b>Vocabulary</b> Router Bluetooth Hub		
	Can understand what is meant by technology and can identify a variety of examples both in and out of school. Can make a distinction between objects that use modern technology and those that do not e.g. a microwave vs. a chair.	Can demonstrate an ability to organise data using, for example, a database and can retrieve specific data for conducting simple searches. Can edit more complex digital data such as music compositions.	Can list a range of ways that the internet can be used to provide different methods of communication, e.g. social media or blogs. Can use some of these methods of communication, e.g. being able to open, respond to and attach	Can recognise the main component parts of hardware which allow computers to join and form a network. Can understand the online safety implications associated with the ways the internet can	Can understand the value of computer networks but are also aware of the main dangers, e.g. viruses can spread to more users. Can recognise what personal information is and can explain how this can be kept safe.	Can understand and can explain in some depth the difference between the internet and the World Wide Web. Know what a WAN and LAN are and can describe how they access the internet in school.	
	Can sort, collate, edit and store simple digital content, e.g. children can	Can be confident when creating, naming, saving and retrieving content.	files to emails. They can describe appropriate email	be used to provide different methods of communication.	Can select the most appropriate form of		





name, save and retrieve		conventions when		online	Can readily apply
own work and follow	Can use a range of media	communicating in this	Children understand	communications	filters when searching
simple instructions to	in digital content	way.	the function, features	contingent on	for digital content.
access online resources.	including photos, text		and layout of a search	audience and digital	
	and sound.	Can carry out simple	engine. They can	content.	Can explain in detail
Can take ownership of		searches to retrieve	appraise selected		how credible a
work and save this in a	Can effectively retrieve	digital content. They	webpages for	Can search with	webpage is and the
designated space.	relevant, purposeful	understand that to do	credibility and	greater complexity for	information it
	digital content using a	this, they are	information at a basic	digital content when	contains. Can compare
	search engine, can apply	connecting to the	level, e.g. check the	using a search engine.	a range of digital
	this learning of effective	internet and using a	URL, check who wrote		content sources and
	searching beyond the	search engines.	the information,	Can explain in some	can rate them in terms
	classroom and can share		double check with	detail how credible a	of content quality and
	this knowledge.	Can collect, analyse,	other sources.	webpage is and the	accuracy. Can use
		evaluate and present		information it	critical thinking skills
	Can make links between	data and information	Can make	contains.	in everyday use of
	technology they see	using a selection of	improvements to		online
	around them, coding and	software, e.g. creating	digital solutions based	Can make appropriate	communication.
	multimedia work they do	graphs or branching	on feedback.	improvements to	
	in school e.g. animations,	databases.		digital solutions based	Can make clear
	interactive code and		Can make informed	on feedback received	connections to the
	programs.	Can consider what	software choices when	and can confidently	audience when
		software is most	presenting	comment on the	designing and creating
		appropriate for a given	information and data.	success of the	digital content.
		task. They can create		solution.	
		purposeful content to	Can create linked		Can design and create
		attach to emails.	content using a range	Can objectively review	their own blogs to
			of software (e.g. add	solutions from others.	become a content
			sound effects to a		creator on the
			video) and share	Can collaboratively	internet.
			digital content within	create content and	
			their community, i.e.	solutions using digital	Can use criteria to
			using virtual display	features within	evaluate the quality of
			boards.	software such as	digital solutions and
				collaborative mode.	are able to identify





			They are able to use	improvements,
			several ways of	making some
			sharing digital	refinements.
			content, e.g. email,	
			blogs.	
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Coding	programs execute by follow unambiguous instructions. Can create and debug simp	Can understand what algorithms are and that programs execute by following precise and unambiguous instructions. Can create and debug simple programmes and use logical reasoning to predict the behaviour of simple programs.		programs that accomplish ng controlling or simulating y decomposing intoCan design, write, debug and refine that accomplish specific goals. Can use sequence, selection and re programs including variables and in outputs.y decomposing intoCan use logical reasoning and complianguage to explain how algorithms their impact on the running of a pro- programs including variables.		goals. tion and repetition in ables and inputs or g and computational algorithms work and	
	Vocabulary Sequence Algorithm Predict Debug/bug Code Loop	Sequence Algorithm Predict Debug/bug Code		algorithms work. Vocabulary Developer Abstraction Function Variable Composition/decomposition		Vocabulary Refine Initialisation Parameter Array/index	
	Can understand that an algorithm is a set of instructions used to solve a problem or achieve an objective. Know that an algorithm written for a computer is called a program. Can read code one line at a time and make good attempts to envision,	Can explain that an algorithm is a set of instructions to complete a task. Can show an awareness of the need to be precise with algorithms so that they can be successfully converted into code.	Can turn a simple real- life situation into an algorithm for a program by deconstructing it into manageable parts. Their design shows that they are thinking of the desired task and how this translates into code.	When turning a real- life situation into an algorithm, the design shows consideration of the required task and how to accomplish this in code using coding structures for selection and repetition.	Can attempt to turn more complex real-life situations into algorithms for a program by deconstructing it into manageable parts. Can test and debug own programs as they go and can use logical methods to identify the approximate cause	Can turn a more complex programming task into an algorithm by identifying the important aspects of the task (abstraction) and then decomposing them in a logical way using their knowledge of possible coding structures and applying skills from previous programs	





bigger picture of the overall effect of the program.program that achieves a specific purpose.within their program that prevents it that prevents it that prevents it that prevents it algorithm and then fai the steps are out of order.oned some support indentify and corred algorithm and then fai where to check first.oned some support identifying the specific line of code.owe program as they go and use logical methods to identify the cause of bugs, account algorithm and then fai adjorithm when the steps are out of order.owe program as they identify and corred algorithm and then fai bug in their program.oned some support identify ing the specific line of code.owe program as they identify the cause of bugs, systematic approach to try to identify a adjorithm add then fai adjorithm add then fai adjorithm stat are specific attempts to a program that especific attempts to a program that especific attempts to a program that respond to specific events and initiate specific attempts to a program that respond to specific events and initiate specific attempts to selection and the order and bin the difference in the a repeat command a repeat			-		-	
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while a program is executing.executing, children can use and manipulate the value of variables.debug and interpret the code later, e.g. the outputs such as sound and movement, inputs from the user of the programs show that they are thinking ofdebug and interpret can use and use of tabs to organise of variables.variables in coding, outputs such as sound and movement, inputs program such as button clicks and the			variables can be used	to store information	their code structure in	improving
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they are thinking of Can make use of user button clicks and the			Designs for their	of variables.	code and the naming	from the user of the
they are thinking of Can make use of user button clicks and the			programs show that		of variables.	program such as
				Can make use of user		button clicks and the
			the structure of a	inputs and outputs		value of functions.





program in logical,	such as 'print to	
achievable steps and	screen'.	Can interpret a
absorbing some new		program in parts and
knowledge of coding	Children's designs for	can make logical
structures. For	their programs show	attempts to put the
example, 'if'	that they are thinking	separate parts of a
statements, repetition	of the structure of a	complex algorithm
and variables.	program in logical,	together to explain
	achievable steps and	the program as a
Can make good	absorbing some new	whole.
attempts to 'step	knowledge of coding	
through' more	structures. For	
complex code in order	example, 'if'	
to identify errors in	statements, repetition	
algorithms and can	and variables.	
correct this.		
	Can trace code and	
Can 'read' programs	use step through	
with several steps and	methods to identify	
predict the outcome	errors in code and	
accurately.	make logical attempts	
	to correct this.	
	Can 'read' programs	
	with several steps and	
	predict the outcome	
	accurately.	