

HIAS Moodle+ resource



Year 7	Computer Science			Digita	l Literacy	IT	
	Algorithms	Programming and Development	Data and data representation	Hardware and Processing	Communication and Networks	IT Independently	Computational Thinking
Developing	Understand what an algorithm is and how it can express simple linear algorithms symbolically. Understand that computers need precise instructions Pay attention to detail to avoid making mistakes. Design simple algorithms	Use graphical based programming and robots to demonstrate a simple program Understand that programs execute by following precise instructions Detect and correct simple errors - debug	Understands the difference between data and information. Recognises different types of data including text and number Identifying that programs can use different types of data Understand how to use tables in programs	Range of digital devices can be considered a computer Identify different input and output devices Understand how programs provide instructions for a computer Understand that computers are only as good as the program	Navigating the network and simple searches Use a web browser to collect information as well as more complex searches Understand how search engines work including the use of 'web crawler programs' Safe use of computers including reporting unacceptable content and unwanted	Independently organise digital content Understand the importance of the quality of digital content Use a variety of software to manipulate and present digital content Understand the impact of technology outside the home Talk about, annotate and make improvements to solutions based on	Algorithmic thinking Use instructions for specific outcomes Use instructions in a given order



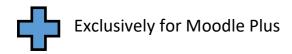
				Recognise that all software executed on digital devices is programmed	contact Understand the importance of safe and respectful communication online Understand reporting procedures in online applications	feedback Collect, organise and present data and information in digital content	
Emerging	Understand that algorithms can be implemented as programs	Use logical reasoning to predict the behaviour of programs Using	Recognise that digital content can be represented in many forms	Know that computers collect data from various input devices, including	Understand the difference between the internet and internet services e.g WWW	Create digital content to achieve a given goal through combining software	Using arithmetic and logical operations Using loops and iteration
	Predict outcomes Use loops and	execute, check and changes in a program	Distinguish between these forms and ways in	sensors and application software.	Show an awareness and range of	packages and internet service to communicate	Generalisation Identify patterns and
	selection	Understand	which they can	Understand the	internet services	with a wider audience	commonalities
	Debug	the difference	communicate information	difference between	including VOIP.	Making	



	Identifying what tasks can best be completed by humans or computers	between different statements like if and if, then and else statements. Use variable and relational operators within a loop	Knowing why sorting data in a flat file can improve searching information Uses filters or can perform single criteria searches for information	hardware and application software and their roles within the computer system		appropriate improvements to solutions based on feedback and can comment on the success of the solution.	
Secure	Designing solutions by	Understand that	Perform more complex	Understand why and	Understand how search	Make judgements	Sequence instructions
	decomposing a problem and	programming bridges the	searches for information	when computers	engines rank search results	about digital content when	that store, move and
	creating a	gap between	using Boolean	are used	3caron results	evaluating and	manipulate
	sub-solutions	algorithms	and relational		Understand	repurposing it	data
		and	operators	Understand	how to	for a given	
	Recognising	computers.		the main	construct static	audience	Write
	that there are	Decige weits	Analyse and	functions of	web pages	l lo do roto o d	instructions
	different solutions to	Design, write and debug	evaluate data and	an operating system	using HTML and CSS	Understand collaboration	that allow selection
	the same	modular	information	System	and Coo	when	2010011011
	problem	programs	and recognise	Understand	Understand	computers are	Decomposition
		and	that poor data	the	data	networked	Break down
		procedures	leads to	difference	transmission		the problem
			unreliable	between	between	Use criteria to	into different
		Understand	results	physical wifi	computers over	evaluate the	parts to make



		how a procedure can hide detail and provide efficiency Select appropriate data types	Define data types, real numbers, Boolean algebra and queries on one table using a typical query language Know that digital computers use binary to represent and transfer data Know that computers transfer data in binary	and mobile networks	networks including IP addresses and packet switching material	quality of solutions and identify improvements. Recognise ethical issues surrounding the application of IT beyond school	them easier to work with Adapt solutions or parts of solutions so that they apply wo a whole class of similar problems. Abstraction Make a problem more understandable by hiding unwanted detail.
Mastered	Understanding that different algorithms exist for the same problem Using notation	Use a range of operators and expressions including Boolean and apply them in	Understand how bit patterns represent numbers and images	Recognise and understand the function of basic computer architecture	Using technologies and online services securely and know how to identify and	Design criteria to critically evaluate the quality of solutions and use the criteria to	Group and name instructions to improve efficiency Breaking down





to represent	the context of	Understand		report	identify	a problem into
solutions	a program	the	Understand	inappropriate	improvements	simpler
Understanding		relationship	the concepts	material	and make	versions of the
iteration and	Has practical	between file	behind the		appropriate	same problem
repetition in as	experience of	size and	fetch-		refinements	that can be
process in a	a high-level	binary.	execute			solved in the
loop	textual		cycle		Justify the	same way
	language.				choice of and	
Recognising			Know that		independently	Transfer ideas
that some	Uses nested		there is a		combine and	and solutions
problems	functions		range of		use multiple	from one
share the	Understands		operating		digital	problem area
same	the need for,		systems and		devices,	into another
characteristics	and writes		application		internet	
and can use	custom		software for		services and	
the same	functions		the same		application	
algorithm to	including		hardware.		software to	
solve both	using				achieve given	
	parameters.				goals.	