



UKS2 Markland Hill Computing Curriculum – Upper Key Stage 2 YEAR A

Key Stage 2 National Curriculum Objectives Significant people in computing: Alan Turing		
Computer Science	Information Technology	Digital Literacy
<i>(How computers and computer systems work and how they are designed and programmed)</i>	<i>(the purposeful use of existing programs to develop products and solutions)</i>	<i>(the skills, knowledge and understanding needed in order to participate fully and safely in an increasingly digital world)</i>
A - design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts		
B - use sequence, selection, and repetition in programs; work with variables and various forms of input and output		
C - use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs		
D - understand computer networks, including the internet; how they can provide multiple services, such as the World Wide Web, and the opportunities they offer for communication and collaboration		
E - use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content		
F - select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information		
G - use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact		

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Computer Science	<u>Computer Systems and Networks</u> Sharing Information Code it Resources – how a network works and Teach Computing 5.1		<u>Programming A</u> Selection in Physical Computing Teach Computing 5.3			<u>Programming A</u> Variables in Games Teach Computing 6.3
IT		<u>Creating Media</u> Composing digital music		<u>Data and information</u> Fact File Databases Teach Computing 5.4	<u>Creating Media</u> Vector Drawing Teach Computing 5.5	
NC objectives	ABDFG	F	ABDF	EF	FG	ABDFG
Lesson Objectives	- I can explain that computers can be connected together to form systems -I can recognise the role of computer systems in our lives - I can identify how to use a search engine -I can describe how search engines select results -I can explain how search results are ranked -I can recognise why the order of results is important, and to whom	- I can explain what digital music is - I can explore programs that create digital music - I can identify the features of music creation: the tempo, length, instruments and range in digital music creation software -I can create digital music following a worked example - I can review how effective my composition is - I can consider the impact of the choices made when composing a piece of digital music	-I can control a simple circuit connected to a computer -I can write a program that includes count-controlled loops - I can explain that a loop can stop when a condition is met - I can explain that a loop can be used to repeatedly check whether a condition has been met - I can design a physical project that includes selection - I can create a program that controls a physical computing project	-I can use a form to record information - I can compare paper and computer-based databases - I can outline how you can answer questions by grouping and then sorting data - I can explain that tools can be used to select specific data - I can explain that computer programs can be used to compare data visually - I can use a real-world database to answer questions	- I can identify that drawing tools can be used to produce different outcomes -I can create a vector drawing by combining shapes - I can use tools to achieve a desired effect - I can recognise that vector drawings consist of layers - I can group objects to make them easier to work with - I can apply what I have learned about vector drawings	-I can define a 'variable' as something that is changeable - I can explain why a variable is used in a program - I can choose how to improve a game by using variables - I can design a project that builds on a given example - I can use my design to create a project - I can evaluate my project
Key Vocabulary	System, connection, , input, process, output, Protocol, address, packet	Variable, change, name, value, set, design, algorithm, retrieve, fanfare, tempo, instrument, range, pitch,	Microcontroller, Crumble controller, components, LED, Sparkle, crocodile clips, connect, battery box, program, repetition,	Database, data, information, record, field, sort, order, group value, search, criteria	Vector, drawing tools, shapes, object, icons, toolbar	Variable, change, name, value, set, change, design, event, algorithm, code, task, artwork,

	Chat, explore, slide deck Reuse, remix, collaboration	length, beat, improve, evaluate, share, modify. Compose, listening, triad, scale, bpm	infinite loop, output devices, motor, switch, motor, condition, true, false, input, selection, condition, action, task, design, algorithm, program, debug, evaluate	graph, chart, axis, compare, filter, presentation	Vector drawing, move, resize, colour, rotate, duplicate/copy Organise, zoom, select, rotate, alignment grid, handles, consistency, modify Layers, object, front, back, order Copy, paste, group, ungroup, duplicate, reuse Improvement, evaluate, alternatives,	program, project, code, test, debug Improve, evaluate, share
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Computing End Points for KS2

- As computer scientists, pupils will develop further skills to create and manipulate programmes, using elements such as variables and debugging and be able to talk about intended and specific outcomes.
- Pupils will have a secure understanding of the role of algorithms and be able to successfully use them.
- As digital citizens, pupils will have a secure understanding of how to keep themselves safe online. This includes identity and password security, identifying inappropriate and inaccurate content and being aware of cyber-bullying and knowing how to respond to it. It is essential that pupils have a sound knowledge of how to be a positive and responsible member of the online community.
- In the use of information technology, pupils will be able to select and manipulate software and online resources to create their own digital content. Pupils will have a range of skills including being able to analyse, evaluate and present information on a range of devices for specific purposes.