The King's (The Cathedral) School
Peterborough

A Family Achieving Excellence

Computing Curriculum Overview 2023-24

JD	ESafety	Algorithms 1	Algorithms 2 - Programming	How the Internet Works	How the Internet Knows who You are	Hardware				
	🟪 🟥	⬜	🟧 ⬛	🟩 🟥	🟩 🟥	🟨 🟩				
KS3										
Year 7	Internet Safety	History of Computers	Input/Output Devices	Binary	Inside a Computer	Scratch	Microbits	Python Programming	Robotics	Wearable Technology
	🟪 🟥	🟩	🟩	⬛	🟩	🟫	🟫	🟫	⬜ 🟨	🟨 🟥
Year 8	HTML	Algorithms - Flowcharts	Block Programming	Boolean Logic	Python Programming					
	🟫	⬜	🟫	🟦	🟫					
Year 9	Python	Computer Networks	Binary	Algorithms	Encryption	Compression	Log Flume Project	IDEA		
	🟫	🟨 ⬜ 🟩	⬛	🟧	⬛ 🟨 🟥	⬛	⬜ 🟨 🟥	🟪		

Key Stage 3 National Curriculum

⬜	_ design, use and evaluate computational abstractions that model the state and behaviour of real-world problems and physical systems
🟧	_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
🟫	_use 2 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 use
🟦	_understand simple Boolean logic [for example, AND, OR and NOT] and some of its uses in circuits and programming; understand how numbers can be represented in binary, and be able to carry out simple operations on binary numbers [for example, binary addition, and conversion between binary and decimal]
🟩	_understand the hardware and software components that make up computer systems, and how they communicate with one another and with other systems
⬛	_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
🟨	_undertake creative projects that involve selecting, using, and combining multiple applications, preferably across a range of devices, to achieve challenging goals, including collecting and analysing data and meeting the needs of known users
🟥	_create, reuse, revise and repurpose digital artefacts for a given audience, with attention to trustworthiness, design and usability
🟪	_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

KS4

1.1 Systems Architecture		2.1 Algorithms	
	1.1.1 Architecture of the CPU	🟧	2.1.1 Computational Thinking
	1.1.2 CPU Performance	🟧	2.1.2 Designing, Creating and Refining Algorithms
	1.1.3 Embedded Systems	🟧	2.1.3 Searching and Sorting Algorithms
1.2 Memory and Storage		2.2 Programming Fundamentals	
🟩	1.2.1 Primary Storage (Memory)	🟫	2.2.1 Programming Fundamentals
	1.2.2 Secondary storage	🟫	2.2.2 Data Types
⬛	1.2.3 Units	🟫	2.2.3 Additional Programming Techniques
	1.2.4 Data Storage		
⬛	1.2.5 Compression		
1.3 Computers Networks, Connections and Protocols		2.3 Producing Robust Programs	
🟩	1.3.1 Networks and Topologies		2.3.1 Defensive Design
🟩	1.3.2 Wired and Wireless Networks, Protocols and Layers		2.3.2 Testing
1.4 Network Security		2.4 Boolean logic	
	1.4.1 Threats to Computer Systems and Networks	🟦	2.4.1 Boolean Logic
	1.4.2 Identifying and Preventing Vulnerabilities		
1.5 Systems Software		2.5 Programming Languages and Integrated Development Environments	
	1.5.1 Operating Systems	🟫	2.5.1 Languages
	1.5.2 Utility Software	🟫	2.5.2 The Integrated Development Environment (IDE)
1.6 Ethical, Legal, Cultural and Environmental Impacts of Digital Technology			
🟪	1.6.1 Ethical, Legal, Cultural and Environmental Impact		