Ormiston Meridian Academy

[OAT] Ormiston Academies Trust AN OAT ACADEMY

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Subject: GCSE Computer Science (OCR) Year 10 Curriculum Map 2025 - 26

Week Commencing	Topic (including links to additional resources)	Assessment Window
Staff INSET 01/09 Students Return 02/09	Introduction to computer systems – input /output devices, the processor and binary storage	
08/09/2025	Introduction to Python programming – input, output and sequence Download of IDE : https://www.python.org/	
15/09/2025	Further Python programming – IF statements	
22/09/2025	Further Python programming – FOR and WHILE loops	
29/09/2025	Python programming individual tasks.	Learning checkpoint - Python programming
06/10/2025	**1.1 Systems architecture** the purpose of the CPU • Von Neumann architecture (MAR, MDR, PC, Accumulator): • common CPU components and their function (ALU, CU, Cache) • the function of the CPU to fetch and execute instructions stored in memory • how common characteristics of CPUs affect their performance (clock speed, cache size, number of cores) • embedded systems (purpose and examples)	
13/10/2025		
20/10/2025		Learning checkpoint – the CPU
October Half Term		
03/11/2025	**1.2.3 Units** • bit, nibble, byte, kilobyte, megabyte, gigabyte, terabyte, petabyte • how data needs to be converted into a binary format to be processed by a computer	
10/11/2025	**1.2.4 Binary and hexadecimal** • how to add two 8 bit binary integers and explain overflow errors which may occur • binary shifts • how to convert positive denary whole numbers (0–255) into 2 digit hexadecimal numbers and vice versa • how to convert from binary to hexadecimal equivalents and vice versa • check digits.	
17/11/2025		Learning checkpoint - number systems and units
24/11/2025	Python programming	

01/12/2025	• the use of basic string manipulation • applying computing-related mathematics: (MOD, DIV, ^, *, /, +, -) • the use of **arrays** (or equivalent) when solving problems, including both one and two dimensional arrays • how to use **sub programs** (functions and procedures) to produce structured code	**ROA**
08/12/2025		**ROA**
15/12/2025		**ROA**
Christmas Break		
05/01/2026	**1.2 Memory and storage** • Primary storage (RAM / ROM) • Secondary storage • Virtual memory	

12/01/2026	**2.1.1 + 2.1.3 Algorithms**
	• computational thinking:
	  ○ abstraction
	  ○ decomposition
	  ○ algorithmic thinking
	• standard searching algorithms:
	  ○ binary search
	  ○ linear search
	• standard sorting algorithms:
	  ○ bubble sort
	  ○ merge sort
	  ○ insertion sort	

19/01/2026		
26/01/2026		Learning checkpoint - algorithms
02/02/2026	**2.4 Boolean Logic** (AND / OR / NOT) and truth tables	
09/02/2026		
February Half Term		
22/02/2026	Python programming	Learning checkpoint - Logic
02/03/2026	Python programming	
09/03/2026	**1.2.4 representation of Characters** • the use of binary codes to represent characters • the term 'character-set' • the relationship between the number of bits per character in a character set and the number of characters which can be represented (for example ASCII, extended ASCII and Unicode).	Learning checkpoint – Python programming
16/03/2026	**1.2.4 representation of Images** • how an image is represented as a series of pixels represented in binary • metadata included in the file • the effect of colour depth and resolution on the size of an image file.	
23/03/2026	**1.2.4 representation of sound** Sound • how sound can be sampled and stored in digital form • how sampling intervals and other factors affect the size of a sound file and the quality of its playback: (sample size, bit rate, sampling frequency). **1.2.5 Compression**	Learning checkpoint – data representation.

	• need for compression, types of compression: (lossy, lossless).	
Easter Break		
13/04/2026	**Python programming**. File access (write / append / read / close) and programming challenges.	
20/04/2026		
27/04/2026		Learning checkpoint - Programming
04/05/26	**SQL** – Structured Query Language (SELECT / FROM / WHERE) and databases	
11/05/2026		
18/05/2026		Learning checkpoint - SQL
May Half Term		
01/06/2026	Exam Preparation and revision, exam technique practice including application / past paper questions / programming questions	
08/06/2026	Exam Preparation and revision, exam technique practice including application / past paper questions / programming questions	Year 10 Mock Exams
15/06/2026	**1.6 Ethics and legislation** • how to investigate and discuss Computer Science technologies while considering: ethical issues, legal issues, cultural issues environmental issues, privacy issues. • how key stakeholders are affected by technologies • environmental impact of Computer Science • cultural implications of Computer Science • open source vs proprietary software • legislation relevant to Computer Science: The Data Protection Act 1998, Computer Misuse Act 1990, Copyright Designs and Patents Act 1988,	Year 10 Mock Exams
22/06/2026		Year 10 Mock Exams
29/06/2026		
06/07/2026	Work Experience Week for Y10	
13/07/2026	**1.4 Network security** – threats to networks (malware, social engineering, brute force attacks, DOS attacks, data interception, SQL injection) and methods to secure networks (penetration testing, anti-malware software, firewalls, user access levels, passwords, encryption, physical security)	
20/07/2026		