

JMAT Curriculum Map - Computing - Y7 - Y13 - 2024-25

Year Group	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2	Notes
Events All Years	Logins, setup & housekeeping	BEBRAS - Nov Advent of Code - Dec		OUCG - Jan	Coollest projects - May		
KS3 Programming Option (1/2 term carousel)	Games programming in Scratch, Code.org, Makecode Arcade						
YEAR 7 National KS3 Curriculum	7.1 Impact of technology – Clear messaging in digital media (NCCE) (6 lessons) Combining the use of digital tools and online collaboration to produce media. <i>Software: Canva / Google Slides</i>	7.3 Programming essentials in Scratch: part I (6 lessons) Applying the programming constructs of sequence, selection, and iteration in Scratch Develop subroutines and decompose a problem incorporating a list. <i>Software: Scratch</i>	7.2 Networks – from semaphores to the internet Recognising networking hardware and explaining how networking components are used for communication.	7.4 Modelling data using spreadsheets Sorting and filtering data and using formulas and functions in spreadsheet software <i>Software: Google Sheets</i>	7.5 Programming essentials in Scratch: part II Using subroutines to decompose a problem that incorporates lists in Scratch. <i>Software: Scratch</i>	7.6 Using media – Gaining support for a cause Creating a digital product for a real-world cause. <i>Software: Google docs, Google Sites</i>	Networks to Y8? Scratch celebration cards before xmas
YEAR 8 National KS3 Curriculum	8.1 Mobile app development (NCCE) (6 lessons) Using event-driven programming to create an online gaming app. <i>Software: App Lab from code.org</i>	8.2 Developing for the web (6 Lessons) Using HTML and CSS to create webpages	8.3 Layers of computing systems Exploring the fundamental elements that make up a computer system.	Python Turtle Applying the programming constructs of sequence, selection, and iteration in Python. <i>Software: Python code editor</i>	8.5 Representations - from clay to silicon Representing numbers and text using binary digits.	8.2 Media - Vector graphics Creating vector graphics through objects, layering, and path manipulation. <i>Software: Inkscape</i>	Intro to Python to Y9? Vector graphics to the end
YEAR 9 National KS3 Curriculum	9.1 Data science Using data to investigate problems and make real-world changes.	8.6 Introduction to Python programming Applying the programming constructs of sequence, selection, and iteration in Python. <i>Software: Python code editor</i>	9.5 Cybersecurity Identifying how users and organisations can protect themselves from cyberattacks	9.4 Representations - going audiovisual Representing images and sound using binary digits. <i>Software: GIMP, Audacity, Python, Sonic Pi (Optional)</i> <i>Hardware: Raspberry Pi discovery kit (Optional)</i>	9.2 Media - Animations Creating 3D animations through object manipulation, and tweaking and adjusting lighting and camera angles. <i>Software: Blender</i>	9.6 Developing physical computing projects Sensing and controlling with the micro:bit. <i>Software: Python</i> <i>Hardware: Microbit</i>	

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YEAR 10/11 National KS4 Curriculum	<p>Online Safety (10 lessons)</p> <p>Recognise ways to build a positive online reputation. Discuss the ethics surrounding big data. Identify fake news and explain why it exists. Describe the laws governing online content. Recognise illegal content and describe how to report it.</p>	<p>8.2 Developing for the web (6 Lessons)</p> <p>Using HTML and CSS to create webpages</p>	<p>Media (7 lessons)</p> <p>Create pre-production planning materials. Create raster and vector graphics. Utilise the software required for digital video creation. Create a multi-page website using open source tools</p> <p><i>Software: Google Drawings, GIMP, Inkscape, Openshot</i></p>	<p>Spreadsheets (6 lessons)</p> <p>Use functions, formulas, and formatting in a spreadsheet. Develop a spreadsheet for a given scenario.</p> <p><i>Software: Google Sheets</i></p>	<p>Physical computing - Build a robot buggy (6 lessons)</p> <p>Use a Raspberry Pi Pico microcontroller to explore inputs and outputs, and utilise a range of hardware components, including motors, reflective optical sensors, LEDs, and an ultrasonic sensor.</p> <p><i>Software: Thonny</i></p> <p><i>Hardware: Raspberry Pi Pico + Physical computing kit - KS4 Raspberry Pi Pico (loan from local computing hub)</i></p>	<p>Using IT in project management (10 lessons)</p> <p>Identify why project management is important and recognise the common tools used. Manage a project for a given scenario.</p> <p><i>Software: Google Sheets, Google Slides</i></p>	
YEAR 10 OCR J277 GCSE Computer Science (3 lessons/week)	<ul style="list-style-type: none"> - SLR 1.1 Systems architecture (x4) - SLR 1.2 Memory and storage (x15) - SLR 2.2 Programming fundamentals (x9) - Programming practice 	<ul style="list-style-type: none"> - SLR 1.2 Memory and storage (x15) - SLR 2.2 Programming fundamentals (x9) - Programming practice 	<ul style="list-style-type: none"> - SLR 1.3 Computer networks, connections and protocols - SLR 2.1 Algorithms (x13) - Programming practice 	<ul style="list-style-type: none"> - SLR 1.3 Computer networks, connections and protocols (cont.) - SLR 2.1 Algorithms (x13) - Programming practice 	<ul style="list-style-type: none"> - SLR 1.4 Network security (x10) - Further programming.... - SLR 2.3 Producing robust programs (x8) - Year 10 Mock Exams 	<ul style="list-style-type: none"> - SLR 1.5 System software - Project: text-based adventure game (x8) 	
YEAR 11 OCR J277 GCSE Computer Science (3 lessons/week)	<ul style="list-style-type: none"> - SLR 1.6 Ethical, legal, cultural and environmental concerns - SLR 2.4 Boolean logic 	<ul style="list-style-type: none"> - Revision - SLR 2.5 Programming languages and IDEs - Y11 Mocks 	<ul style="list-style-type: none"> - Revision - Y11 Mock Exams - EXAM ENTRIES CHECK - Programming time sign-off 	<ul style="list-style-type: none"> - Revision 	<ul style="list-style-type: none"> - Revision - EXAMS 	<ul style="list-style-type: none"> - EXAMS 	
Year 12 OCR H446 GCE A Level Computer Science (6 lessons/week)	<ul style="list-style-type: none"> - SLR 23 Programming techniques (6) - SLR 14 Data structures 					<ul style="list-style-type: none"> - SLR 13 Data types (x14) - Dedicated NEA project lessons 	
* 2023/24 only							

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Year 13 OCR H446 GCE A Level Computer Science (6 lessons/week) *2024/25 only	[Component 02 - NEA Related materials] - SLR 18 Thinking abstractly (3) - SLR 19 Thinking ahead (3) - SLR 20 Thinking procedurally (2) - SLR 21 Thinking logically (2) - SLR 22 Thinking concurrently (2) - SLR 24 Computational methods (6) - SLR 6 Software development (4) [Component 01] - SLR 1 Structure and function of the processor (8) - SLR 2 Types of processor (4) - SLR 3 Input, output and storage (5) - Baseline Assessment - Dedicated programming lessons - Dedicated NEA project lessons	- SLR 4 Systems software (8) - SLR 5 Application generation (6) - SLR 7 Types of programming language (6) - SLR 8 Introduction to programming (Partial) - SLR 9 Compression, encryption and hashing (5) - SLR 10 Databases (8) - SLR 23 Programming techniques (6) (Review) - Dedicated programming lessons - Dedicated NEA project lessons	- SLR 11 Networks (9) - SLR 12 Web technologies (10) - SLR 15 Boolean algebra (8) - SLR 16 Computer-related legislation (3) - SLR 17 Ethical, moral and cultural issues (4) - Dedicated programming lessons - NEA DEADLINE FEB 1/2 Term 2025 - EXAM ENTRIES CHECK - Y13 MOCK EXAM	- SLR 14 Data structures (8) (Review) - SLR 25 Algorithms (7) - SLR 26 Algorithms (7) - Dedicated programming lessons - NEA SUBMISSION	- Revision - EXAMS	- EXAMS	