

# COMPUTER SCIENCE CURRICULUM: KS4

## Intent

Our aim in computing is to inspire and enable students to positively contribute to and thrive as active participants in the digital world; digitally literate and digitally resilient enough to function in society and at a level suitable for the workplaces of the future. Our curriculum is inclusive and ambitious and is coherently sequenced in order that all learners build relevant knowledge and understanding.

Students will be equipped as purposeful, competent, creative users of technology who, using their deep knowledge and understanding of computing, can create appropriate digital artefacts, problem solve confidently and program skilfully.



<b>Qualification(s)</b>	GCSE Computer Science
<b>Exam Board</b>	Edexcel
<b>Link to Specification</b>	<a href="https://qualifications.pearson.com/en/qualifications/edexcel-gcses/computer-science-2020.coursematerials.html#%2FfilterQuery=category:Pearson-UK:Category%2FSpecification-and-sample-assessments">https://qualifications.pearson.com/en/qualifications/edexcel-gcses/computer-science-2020.coursematerials.html#%2FfilterQuery=category:Pearson-UK:Category%2FSpecification-and-sample-assessments</a>

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
<b>Year 10</b>	<p><b>Unit 6&amp;1</b></p> <p>P1 Introduction CT1 Programming Intro CT2 Decomposition and algorithms CT3 Data Types and Variables CT4 Input, Integer functions and debugging tools CT5 Flowcharts</p> <p><b>Unit 2</b></p> <p>P2 Binary P3 Unsigned Integers P4 Binary arithmetic P5 Twos Complement (1)</p>	<p><b>Unit 6&amp;1</b></p> <p>CT7 Strings CT8 IF, IF ELSE, relational operators CT9 IF, ELIF,ELSE, readability CT 10 Boolean operators CT11 Repetition (While)</p> <p><b>Unit 2</b></p> <p>P7 Twos Complement (2) P8 Logical Binary Shifts P9 Arithmetic Binary Shifts P10 Hexadecimal P11 ASCII</p>	<p><b>Unit 6&amp;1</b></p> <p>CT13 One- Dimensional Lists CT 14 For loops, range function CT 15 Procedures CT 16 Functions CT 17 Sub programs</p> <p><b>Unit 3</b></p> <p>P13 Stored Program concept P14 FDE 1 P15 FDE 2 P15 FDE 3 P16 and P17 Secondary storage 1&amp;2</p>	<p><b>Unit 6&amp;1</b></p> <p>CT 19 string.format() CT 20 2 dimensional lists CY 21 Validation CT 22 Linear search 1D CT23 Linear search 2D</p> <p><b>Unit 3</b></p> <p>P19 Operating Systems P20 OS File management P21 OS: process management P22 OS: peripherals P23 Utility software</p>	<p><b>Unit 6&amp;1</b></p> <p>CT25 Merge sort CT26 reading files CT27 string processing CT28 Writing Files CT29 Authentication</p> <p><b>Unit 5</b></p> <p>P25 Malware P26 Hackers P27 Social engineering P28 Data level protection P29 Robust Software</p>	<p><b>Unit 6&amp;1</b></p> <p>CT 31 Turtle Intro CT32 Turtle movement CT33 Turtle pens CT 34 Turtle combining CT35 Turtle Big Problem</p> <p><b>Unit 4</b></p> <p>P31 LANS and WANS P32 Network Speed P33 Connectivity P34 Wired v Wireless P35 Network Topologies</p>
<b>Year 11</b>	<p><b>Unit 6&amp;1 Recap</b></p> <p>CT1-Intro Programming CT2 Subprograms CT3 Local,global CT4 Maths, time CT5 Problem solving</p> <p><b>Unit 4</b></p> <p>P1 Embedded systems P2 Internet of Things</p>	<p><b>Unit 6&amp;1</b></p> <p>CT 7 Trace Tables CT8 errors CT9 Bubble Sort CT10 Binary search CT11 problems solving</p> <p><b>Unit 5</b></p> <p>P7 environmental Issues- manufacture and use</p>	<p><b>Unit 6&amp;1</b></p> <p>CT13 Data Types, strings, validation, testing CT14 data Structures 1D CT15 Trace tables CT16 Errors CT17 Problem solving</p> <p><b>Unit 2</b></p> <p>P13 Bitmaps 1</p>	<p><b>Unit 1&amp;6</b></p> <p>CT19 Data Structures 2D CT20 Subprograms – local,global, procedures functions CT 21 Problem solving CT 22 Trace tables,errors, flowcharts CT23 Problem solving</p> <p><b>Unit 5</b></p>	<p><b>Revision, past papers and examinations</b></p>	

	P3 Packet switching P4 TCP/IP 1 P5 TCP IP 2	P8 Environmental Issues ewaste P9 Low level and High level languages P10 Translators P11 Intellectual Property	P14 Bitmaps 2 P15 Representation of Sound P16 Sound P17 Compression	P19 AI, machine learning, robotics P20 A1, machine learning, robotics P21 personal data P22 Privacy P23 Data Protection and computer misuse		
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