Curriculum Intent for KS4 Computing

Computing underlines most innovation today and prepares students to innovate and create the new technologies that drive local and national economies. This ability to innovate with technology is also important for students' future success and ability to make a difference in a global society. The Computing department equips pupils to use computational thinking and creativity to understand and change the world.

The Computing curriculum uses a progressive pathway at KS3, designed to build on prior knowledge and skills and providing a spiral of learning which scaffolds key concepts within Computer Science at KS4. The Computing Department motivates pupils to discover essential problem-solving skills using decomposition and abstraction. These transferable skills allow pupils to work independently. Pupils are actively taught the art of reflective practice and to make mistakes in Computer Science to encourage further development; embedding knowledge and building resilience.

The Computing Department endeavors to provide an environment of digital champions, who are resilient to a world of unprecedented technological change. Pupils are constantly challenged outside of their normal line of studies with opportunities in programming competitions and government run cyber programmes. The Computing Department aspires to enthuse pupils with the passion of digital creation.

Threshold Concepts Computing:

Communication and Networking	Programming and development	Algorithms	Memory and Storage	Hardware and processing	Creative iMedia

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Y10 CS	Memory and storage/Boolean Logic	Algorithms/programming	System Architecture	Memory and Storage	Networks and Topologies	Algorithms/programming

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	
Y11 CS	Network threats/system software	Ethical, legal/search and sort algorithms	Algorithms/programming/SQL	Revision	Revision	

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Y10 iM	R093	R093	R094	RO94	RO94/R096	R096

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Y11	R096	R096	R093	R093	R093	

KEY STAGE 4 – AUTUMN HALF TERM 1

Year 10

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8
Content	Introduction to GCSE Computer Science 2.4.1 Boolean Logic	2.4.1 Boolean Logic 1.2.3 Units	1.2.4 Data Storage	1.2.4 Data Storage	1.2.4 Data Storage	1.2.4 Data Storage	2.1.1 Computational thinking 1.2.5 Compression	2.1.1 Computational thinking 1.2.5 Compression
Assessment				Star Mark				End of unit assessment
Question type				AO1, AO2				AO1, AO2
Level of support				Low				Low
Homework	GCSE Pod	GCSE Pod	GCSE Pod	GCSE Pod	GCSE Pod	GCSE Pod	GCSE Pod	GCSE Pod

Year 11

Year 11 mocks

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8
Content	1.4.1 Threats to systems and networks	1.4.2 Identifying and preventing vulnerabilities Languages an IDE'S	1.5.1 Systems Software Languages and IDE'S	1.5.1 Systems Software Languages and IDE'S	1.5.1 Systems Software Languages and IDE'S	1.5.1 Systems Software Languages and IDE'S	1.5.1 Systems Software Languages and IDE'S	1.5.1 Systems Software Languages and IDE'S
Assessment				Star Mark				End of unit assessment
Question type				AO1, AO2 ,A03				AO1, AO2 ,A03
Level of support				Low				Low
Homework	GCSE Pod	GCSE Pod	GCSE Pod	GCSE Pod	GCSE Pod	GCSE Pod	GCSE Pod	GCSE Pod

KEY STAGE 4 – AUTUMN HALF TERM 2

	Week 9	Week 10	Week 11	Week 12	Week 13	Week 14	Week 15
Content	2.1.2 Designing, creating and refining algorithm	2.1.2 Designing, creating and refining algorithm	2.1.2 Designing, creating and refining algorithm	2.1.2 Designing, creating and refining algorithm	Practical Programming (Programming Fundamentals)	Practical Programming (Programming Fundamentals)	Practical Programming (Programming Fundamentals)
Assessment				Star Mark			End of unit assessment
Question type				AO1, AO2			AO1, AO2
Level of support				Low			Low
Homework	GCSE Pod	GCSE Pod	GCSE Pod	GCSE Pod	GCSE Pod	GCSE Pod	GCSE Pod

Year 11 mocks

	Week 9	Week 10	Week 11	Week 12	Week 13	Week 14	Week 15
Content	1.6.1 Ethical, legal etc… Additional programming techniques	1.6.1 Ethical, legal etc… Additional programming techniques	1.6.1 Ethical, legal etc… Additional programming techniques	2.1.3 Sorting / Searching Algorithms APT Algorithms from Specifications	2.1.3 Sorting / Searching Algorithms APT Algorithms from Specifications	2.1.3 Sorting / Searching Algorithms APT Defensive Design	2.1.3 Sorting / Searching Algorithms APT Defensive Design
Assessment				Star Mark			End of unit assessment
Question type				AO1, AO2			AO1, AO2 ,A03
Level of support				Low			Low
Homework	GCSE Pod	GCSE Pod	GCSE Pod	GCSE Pod	GCSE Pod	GCSE Pod	GCSE Pod

KEY STAGE 4 – SPRING HALF TERM 1

	W/eek 16	Week 17	Week 18	Week 19	Week 20	
Year 10 Content	1.1.1 Architecture of the CPU 2.2.1 Programming fundamental	1.1.2 Architecture of the CPU 2.2.1 Programming fundamental	1.1.1 Architecture of the CPU 2.2.1 Programming fundamental	1.1.1 Architecture of the CPU 2.2.1 Programming fundamentals	1.1.1 Architecture of the CPU 2.2.1 Programming fundamentals	
Assessment			Star Mark		End of unit assessment	
Question type			AO1, AO2		AO1, AO2	
Level of support			Low		Low	
Homework	GCSE Pod	GCSE Pod	GCSE Pod	GCSE Pod	GCSE Pod	GCSE Pod

Year 11 mocks

	W/eek 16	Week 17	Week 18	Week 19	Week 20	
Year 11 Content	2.2.3 Additional programming techniques Testing Functions and procedures	2.2.3 Additional programming techniques Testing Lists	2.2.3 Additional programming techniques Writing to Files Defensive Design	2.2.3 Additional programming techniques Writing to Files Defensive Design	2.2.3 Additional programming techniques SQL	
Assessment			Star Mark		End of unit assessment	
Question type			AO1, AO2		AO1, AO2 ,A03	
Level of support			Low		Low	
Homework	GCSE Pod	GCSE Pod	GCSE Pod	GCSE Pod	GCSE Pod	GCSE Pod

KEY STAGE 4 – SPRING HALF TERM 2

Year 10

	Week 21	Week 22	Week 23	Week 24	Week 25		
Content	1.1.2 CPU Performance 2.2.1 Programming fundamentals	1.1.3 Embedded systems 2.2.1 Programming fundamentals	1.2.1 Primary storage (Memory) 2.2.3 Additional programming techniques	1.2.1 Primary storage (Memory) 2.2.3 Additional programming techniques	1.2.2 Secondary storage 2.2.3 Additional programming techniques		
Assessment			Star Mark		End of unit assessment		
Question type			AO1, AO2		AO1, AO2		
Level of support			Low		Low		
Homework	GCSE Pod –	GCSE Pod –	GCSE Pod	GCSE Pod	GCSE Pod		

Year 11

	Week 21	Week 22	Week 23	Week 24	Week 25		
Content	Revision	Revision	Revision	Revision	Revision		
Assessment			Star Mark		End of unit assessment		
Question type			AO1, AO2		AO1, AO2 ,A03		
Level of support			Low		Low		
Homework	GCSE Pod	GCSE Pod	GCSE Pod	GCSE Pod	GCSE Pod		

KEY STAGE 4 – SUMMER HALF TERM 1

		Week 26	Week 27	Week 28	Week 29	Week 31	Week 32
Year 10	Content	1.2.2 Secondary storage 2.2.3 Additional programming techniques	1.3.1 Networks and topologies	1.3.2 Wired and wireless networks, protocols and layers	1.3.2 Wired and wireless networks, protocols and layers	1.3.2 Wired and wireless networks, protocols and layers	1.3.2 Wired and wireless networks, protocols and layers
	Assessment			Star Mark			End of unit assessment
	Question type			AO1, AO2			AO1, AO2
	Level of support			Low			Low
	Homework	GCSE Pod	GCSE Pod	GCSE Pod	GCSE Pod	GCSE Pod	GCSE Pod

Year 11			Year 11 Revision			
	CONTENT					
	HOMEWORK					

KEY STAGE 4 – SUMMER HALF TERM 2

Year 10 mocks (spanning Week 34 – Week 36)

Year 10		Week 33	Week 34	Week 35	Week 36	Week 37	Week 38	Week 39
	Content	Revision	Revision	mocks	mocks	Catch up/move move into year 11	Catch up/move onto year 11	Catch up/move onto year 11
	Assessment				Star Mark			
					AO1, AO2			
	Question type				Low			
	Homework	GCSE Pod	GCSE Pod	GCSE Pod	GCSE Pod	GCSE Pod	GCSE Pod	GCSE Pod