

COMPUTER SCIENCE Y11 CURRICULUM OUTLINE

Term	Topic/Unit of work	Knowledge	Skills	Assessment
Y11 Autumn Term 1	Review of paper 1	Review System Architecture, Memory, Storage, System software, Computer networks, Networks and cyber security and Issues	Answer exam questions on the knowledge gained Apply knowledge gained to a practical situation	Past exam questions on System Architecture, Memory, Storage, Computer networks, Systems Software and Algorithms
	Algorithms and computational logic	Review Abstraction, decomposition and Computational thinking. How to produce algorithms – Flowcharts & Pseudocode Identifying I/P's, processing and O/P's Trace tables Common searching and sorting algorithms: <ul style="list-style-type: none"> • Linear search • Binary search • Merge sort • Bubble sort Algorithm efficiency Truth tables & Logic gates	Answer exam questions on the knowledge gained Apply knowledge gained to a practical situation	
	Programming fundamentals	The use of variables, constants, operators, outputs, assignments, random number generation, basic file handling operations, the use of arrays & Subroutines The use of three basic programming constructs; Sequence, Selection & Iteration (count controlled loops & condition controlled loops)	Develop program code and construct's using data types, input/outputs, iteration	TIME – Learn how to handle user input Learn how to use lists and arrays workbook Programming challenges

COMPUTER SCIENCE Y11 CURRICULUM OUTLINE

Y11 Autumn Term 2	Review of paper 1 Review of paper 1 & 2 material	Review System Architecture, Memory, Storage, System software, Computer networks, Networks and cyber security, Issues, Algorithms, Computational logic and Programming fundamentals	Answer exam questions on the knowledge gained Apply knowledge gained to a practical situation How to prepare for exams How to answer questions	Past exam questions on System Architecture, Memory, Storage, Computer networks, Systems Software and Algorithms & Computational logic
	Review of basic programming concepts	Data types, structures and casting Operators Variables, constants, I/P's, O/P's and assignments Basic programming constructs – Sequence, selection & Iteration Subprograms / subroutines	Answer exam questions on the knowledge gained Apply knowledge gained to a practical situation	Y11 Mock exams – paper 1 (Mock week) & 2 (November)
	Bebras Challenge	Bebras Challenge	Develop problem solving skills in national competition. Use of abstraction, decomposition and computational thinking.	1 hour to solve a set of problems that relate to computational thinking. Leads to second round where programming ability is tested.
	Programming fundamentals	The use of variables, constants, operators, outputs, assignments, random number generation, basic file handling operations, the use of arrays & Subroutines The use of three basic programming constructs; Sequence, Selection & Iteration (count controlled loops & condition controlled loops)	Develop program code and construct's using data types, input/outputs, iteration	TIME – Learn how to use lists and arrays workbook Programming challenges

COMPUTER SCIENCE Y11 CURRICULUM OUTLINE

Y11 Spring Term 1	Review of advanced programming concepts	String manipulation Random, math & time modules Turtle module File handling Procedures and functions Local and global variables	Answer exam questions on the knowledge gained Apply knowledge gained to a practical situation How to answer questions	Past exam questions on programming fundamentals
	Review of paper 1	Review System Architecture, Memory, Storage, System software, Computer networks, Networks and cyber security, Issues, Algorithms, Computational logic and Programming fundamentals	Answer exam questions on the knowledge gained Apply knowledge gained to a practical situation How to answer questions	Y11 Mock exam – Paper 1 (End of January)
	Programming fundamentals	The use of variables, constants, operators, outputs, assignments, random number generation, basic file handling operations, the use of arrays & Subprograms The use of three basic programming constructs; Sequence, Selection & Iteration (count controlled loops & condition controlled loops)	Develop program code and construct's using data types, input/outputs, iteration	TIME – Learn how to use lists and arrays workbook Learn how to use serial files Programming challenges
Y11 Spring Term 2	Review of robust and secure programming	Syntax, logic and runtime errors The importance of runtime errors Maintainability Data validation Authentication routines	Answer exam questions on the knowledge gained Apply knowledge gained to a practical situation	Past exam questions on secure and robust programming
	Review Paper 2	Review of basic and advance programming concepts	Answer exam questions on the knowledge gained Apply knowledge gained to a practical situation	Y11 Mock exam – Paper 2 (March)

COMPUTER SCIENCE Y11 CURRICULUM OUTLINE

	Programming fundamentals	The use of variables, constants, operators, outputs, assignments, random number generation, basic file handling operations, the use of arrays & Subprograms The use of three basic programming constructs; Sequence, Selection & Iteration (count controlled loops & condition controlled loops)	Develop program code and construct's using data types, input/outputs, iteration	TIME – Learn how to use serial files Learn how to master the basics Programming challenges
Y11 Summer Term 1	Revision of material for both paper 1 and 2	Review all 11 topics for papers 1 and 2.	Answer exam questions on the knowledge gained Apply knowledge gained to a practical situation How to prepare for exams	Practice exam questions for both paper 1 and paper 2 Public exams