

Year 12

Timing	Unit Title	Key Question	Knowledge	Assessing Understanding
Autumn Term	2.1 C# Practice / conversion	Can I write GCSE-level programs in C#	• C# programming skills, including : • Variables • Algorithms • Loops • File handling • Arrays • Parameters	How understanding is assessedes: • Practical exercises and worksheets • Progress is monitored and recorded during lessons Skills • Variables • Algorithms • Loops • File handling • Arrays Assessment point information Progress is monitored in lessons and used for AP purposes
	2.2	Second level programming with OOP	• Simple OOP structures • Classes • Properties • Methods • Construction Procedures	How understanding is assessedes : • Practice exercises in C# Skills • Programming in C# Assessment point information A test, based on an old AS Paper, is formally marked according the original MS

Autumn Term	Data Representation	How do we store numbers and text in a computer?	• Binary numbers • Sign-and-magnitude and two's complement • Hex • Adding and subtracting binary • ASCII and Unicode	How understanding is assessed : • Practice exercises in lessons Skills • Conversion from one form to another Assessment point information • BM data contributes to AP • Homework exercise grades contribute to AP
	Legals	What are the laws which control computer use?	• DPA • CDP • Computer Misuse Act • RIPA	How understanding is assessed : • Presentations in teams Skills • Presentation skills • Ability to focus information Assessment point information • Presentation grades contribute to AP
	Low Level Coding	What is low level code and how do we use it?	• Assembly language • LMC • Processors and buses • The fetch-execute cycle • CISC and RISC	How understanding is assessed : • Homework exercises Skills • Writing low level code Assessment point information • BM data contributes to AP

				Homework exercise grades contribute to AP
Autumn Term	Networks	How do we connect computers together?	- Network hardware - Network topologies - The protocol stack - HTML - CSS - Javascript	How understanding is assessed : - Practice exercises in lessons - Formal unit test Skills - Write or interpret web pages - Interpret javascript code Assessment point information - BM data contributes to AP - Test marks contribute to AP
Autumn / Spring Term	Databases	How do relational databases work?	- Justification for databases - Relational databases theory - SQL	How understanding is assessed : - challenge exercises in lessons / homework - practical questions in SQL Skills - Write SQL queries Assessment point information - BM data contributes to AP - Homework questions contribute to AP

Spring Term	2.2.2 Software Development	What are the stages of developing software?	- Waterfall lifecycle, agile methodologies, extreme programming, the spiral model and rapid application development. - The relative merits and drawbacks of different methodologies and when they might be used. - Different test strategies, including black and white box testing and alpha and beta testing	How understanding is assessed: - Homework sheets - Google tests Skills - Test programs that solve problems using suitable test data and end user feedback - Programming in C# Assessment point information two exercises are formally marked, and are taken together with BM data and with marks from a Google test
	2.1 Elements of computational thinking	What is meant by computational thinking?	- Thinking abstractly – nature and need for abstraction - Thinking ahead - Thinking procedurally – components, steps and solution of problem - Thinking logically	How understanding is assessed : - Homework sheets - Google tests Skills - Dependent on topics chosen - Test programs that solve problems using suitable test data and end user feedback Assessment point information Any homework feeds into the Assessment point, together with BM data.

	Form-based Programming	How do I use C# in real programming?	- Basic concepts including - objects and properties - naming - conversion - combo box - shapes - images	How understanding is assessed : - Practical exercises in VSi - Reworked exercise from 2.2 done in VS Skills - Programming in VS Assessment point information Any homework feeds into the Assessment point, together with BM data.
Spring Term	Logic	How can we simplify a complex circuit?	Karnaugh Maps	How understanding is assessed : - Practical exercises in lessons Skills - Simplifying complex logic Assessment point information - BM data contributes to AP
	Data Structures (1)	How do we structure data in a computer system?	- Stacks - Queues	How understanding is assessed : - Practical exercises in lessons - Homework sheets Skills - Ability to structure given data - Can write algorithms to manage structures Assessment point information

				- BM data contributes to AP - Homework grades contribute to AP
	Continuous Revision and bits	What don't I know?	- All theory topics - Minor topics, for example : - Abstraction - Systems analysis	How understanding is assessed : - Weekly homework sheets which grow and shrink according to progress made Skills - Various Assessment point information - All weekly marks feed into AP
Summer Term	Final Revision	DO I know all the material? Can I get all the marks?	All Theory for both Units	How understanding is assessed : - Weekly homeworks Skills - Exam technique Assessment point information Grades from the sheets feed into the final AP

	OOP theory	What are the benefits of OOP	• OOP theory as in OCR documents	How understanding is assessed : • Written test Skills Assessment point information • Test feeds into AP
	Algorithms	2.2 / 2.3 Standard Algorithms	• Sorting – including quick sort • Searching • Big O concepts	How understanding is assessed : • Written test Skills • Ability to demonstrate understanding of algorithms Assessment point information • Test feeds into AP
	Database Handling in C#	How do we control and edit external databases	• Using OOP to access external SQL databases	How understanding is assessed : • In-lesson observation Skills • OOP / SQL coding Assessment point information • BM data feeds into AP

All Year	ELCEC	How do technological changes affect society?	• Topical issues – new each year	How understanding is assessed : • Short essays Skills • Essay technique Assessment point information • Essay marks feed into AP
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