Year 13 AUTUMN 1

Week	Specification Point	Key Concepts	Pre-Lesson Work	Set Homework	Independent Work Further Reading
1	**Paper 1** 1. 4.1.1.1 Variables and Data Types 2. 4.1.1.2 Arithmetic Operations	Understand the concept of a data type. Understand and use the following appropriately: Integer, real/float, Boolean, character, string, date/time, pointer/reference, records, arrays. Define and use user-defined data types based on language-defined (built-in) data types. Addition, subtraction, multiplication, real/float division integer division, including remainders, exponentiation, rounding and truncation.	Read Page(s) 2 to 7 of your Computer Science Textbook on Variables and Data Types	Complete questions on page(s) 7	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on 4.1.1.1 Variables and Data Types 4.1.1.2 Arithmetic Operations.
	Paper 2 1. 4.2.5.1 Number systems 2. 4.2.5.2 Counting	Be familiar with the concept of a natural number and the set $\mathbb{N}$ of natural numbers (including zero). Be familiar with the concept of an integer and the set $\mathbb{Z}$ of integers. Be familiar with the concept of a rational number and the set $\mathbb{Q}$ of rational numbers, and that this set includes the integers. Counting and measurement	Read Page(s) 182 to 186 of your Computer Science Textbook on	Complete questions on page(s) 186	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on 4.2.5.1 Number systems 4.2.5.2 Counting.
2	**Paper 1** 1. 4.1.1.5 Selections	Use nested selection and nested iteration structures.	Read Page(s) 8 to 13 of your Computer	Complete questions on page(s) 13	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on 4.1.1.5 Selections 4.1.1.3

Year 13

	2. 4.1.1.3 Relational Operations 3. 4.1.1.4 Boolean Operations	Equal to, not equal to, less than, greater than, less than or equal to and greater than or equal to. NOT, AND, OR and XOR.	Science Textbook on Selections		Relational Operations 4.1.1.4 Boolean Operations.
	Paper 2 1. 4.2.5.3 Number bases 2. 4.2.5.4 Binary 3. 4.2.5.5 Binary Units	Decimal (base 10) Binary (base 2) Hexadecimal (base 16). Units of information Know that quantities of bytes can be described using binary prefixes representing powers of 2 or using decimal prefixes representing powers of 10, e.g. one kibibyte is written as 1KiB = 210 B and one kilobyte is written as 1 kB = 103 B. Know the names, symbols and corresponding powers of 2 for the binary prefixes: Kibi, Ki - 210, mebi, Mi - 220, gibi, Gi - 230, tebi, Ti - 240 Know the names, symbols and corresponding powers of 10 for the decimal prefixes: kilo, k - 103, mega, M - 106, giga, G - 109, tera, T - 1012	Read Page(s) 187 to 193 of your Computer Science Textbook on	Complete questions on page(s) 193	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on 4.2.5.3 Number bases 4.2.5.4 Binary 4.2.5.5 Binary Units.
3	**Paper 1** 1. 4.1.1.6 Iterations	Use definite and indefinite iteration	Read Page(s) 8 to 13 of your Computer Science Textbook on Iterations	Complete questions on page(s) 13	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on 4.1.1.6 Iterations.

Year 13

	Paper 2 1. 4.2.5.6 Unsigned binary 2. 4.2.5.7 Unsigned binary arithmetic	Know the difference between unsigned binary and signed binary. Know that in unsigned binary the minimum and maximum values for a given number of bits, n, are 0 and 2n -1 respectively. Add two unsigned binary integers Multiply two unsigned binary integers.	Read Page(s) 194 to 206 of your Computer Science Textbook on	Complete questions on page(s) 206	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on 4.2.5.6 Unsigned binary 4.2.5.7 Unsigned binary arithmetic.
4	**Paper 1** 1. 4.1.1.7 String Handling	Length, position, substring, concatenation, character → character code, character code → , character, string conversion operations.	Read Page(s) 17 to 21 of your Computer Science Textbook on String Handling	Complete questions on page(s) 21	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on 4.1.1.7 String Handling .
	Paper 2 1. 4.2.5.8 Two's complement	Know that signed binary can be used to represent negative integers and that one possible coding scheme is two's complement.	Read Page(s) 194 to 206 of your Computer Science Textbook on	Complete questions on page(s) 206	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on 4.2.5.8 Two's complement.

Year 13

		Represent negative and positive integers in two's complement Perform subtraction using two's complement			
5	**Paper 1** 1. 4.1.1.9 Exception Handling 2. 4.1.1.8 Random	Try and Catch Random number generation	Read Page(s) 26 to 27 of your Computer Science Textbook on Exception Handling	Complete questions on page(s) 27	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on 4.1.1.9 Exception Handling 4.1.1.8 Random.
	Paper 2 1. 4.2.5.9 Fractional Binary	Numbers with a fractional part Fixed point form in binary in a given number of bits Floating point form in binary in a given number of bits.	Read Page(s) 194 to 206 of your Computer Science Textbook on	Complete questions on page(s) 206	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on 4.2.5.9 Fractional Binary.
6	**Paper 1** 1. 4.1.1 Fundamentals of programming		Read Page(s) 2 to 45 of your Computer Science Textbook on Fundamentals of programming	Complete questions on page(s) 46 to 47	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on 4.1.1 Fundamentals of programming.

Year 13

	Paper 2 1. 4.2.5.15 Character form of numbers 2. 4.2.5.16 ASCII and Unicode	Character form of a decimal digit Differentiate between the character code representation of a decimal digit and its pure binary representation. Describe ASCII and Unicode coding systems for coding character data and explain why Unicode was introduced.	Read Page(s) 207 to 219 of your Computer Science Textbook on	Complete questions on page(s) 219	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on 4.2.5.15 Character form of numbers 4.2.5.16 ASCII and Unicode.

Year 13

A U T U M N 2

Subject: A-Level Computer Science

Week	Specification Point	Key Concepts	Pre-Lesson Work	Set Homework	Independent Work Further Reading
1	**Paper 1** 3. 4.1.1 Fundamentals of programming		Read Page(s) 2 to 45 of your Computer Science Textbook on Fundamentals of programming	Complete questions on page(s) 46 to 47	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on 4.1.1 Fundamentals of programming.
	Paper 2 3. 4.2.5.15 Character form of numbers 4. 4.2.5.16 ASCII and Unicode	Character form of a decimal digit Differentiate between the character code representation of a decimal digit and its pure binary representation. Describe ASCII and Unicode coding systems for coding character data and explain why Unicode was introduced.	Read Page(s) 207 to 219 of your Computer Science Textbook on	Complete questions on page(s) 219	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on 4.2.5.15 Character form of numbers 4.2.5.16 ASCII and Unicode.
2	**Paper 1** 4. 4.1.1.10 Subroutine	Subroutines (procedures/functions), Parameters of subroutines, Returning a value/values from a subroutine, Local variables in subroutines and Global	Read Page(s) 22 to 26 of your Computer Science Textbook on Subroutine	Complete questions on page(s) 27	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on 4.1.1.10 Subroutine.

Year 13

		variables in a programming language			
	Paper 2 4. 4.2.5.17 Error checking and correction	Error checking and correction Parity bits Majority voting	Read Page(s) 207 to 219 of your Computer Science Textbook on	Complete questions on page(s) 219	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on 4.2.5.17 Error checking and correction.
3	**Paper 1** 2. 4.1.2.1 Arrays	1 dimensional, 2 dimensional and multi dimensional arrays	Read Page(s) 50 to 52 of your Computer Science Textbook on Arrays	Complete questions on page(s) 56	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on 4.1.2.1 Arrays.

Year 13

	Paper 2 3. 4.2.5.19 Analogue and digital 4. 4.2.5.20 Analogue and digital conversion	Describe how bit patterns may represent other forms of data, including graphics and sound. Understand the difference between analogue and digital: Know that ADCs are used with analogue sensors. Know that the most common use for a DAC is to convert a digital audio signal to an analogue signal.	Read Page(s) 207 to 219 of your Computer Science Textbook on	Complete questions on page(s) 219	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on 4.2.5.19 Analogue and digital 4.2.5.20 Analogue and digital conversion. 
4	**Paper 1** 2. 4.1.2.2 Files	Open, write, read and close	Read Page(s) 52 to 55 of your Computer Science Textbook on Files	Complete questions on page(s) 56	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on 4.1.2.2 Files. 
	Paper 2 2. 4.2.5.21 Bitmap Graphics	Explain the following for bitmaps: resolution, colour, depth and size in pixels. Calculate storage requirements for bitmapped images and be aware that bitmap image files may also contain metadata. Be familiar with typical metadata.	Read Page(s) 207 to 219 of your Computer Science Textbook on	Complete questions on page(s) 219	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on 4.2.5.21 Bitmap Graphics. 

Year 13

5	**Paper 1** 3. 4.1.4.1 Problem-solving	Be able to develop solutions to simple logic problems. Be able to check solutions to simple logic problems.	Read Page(s) 134 to 143 of your Computer Science Textbook on Problem-solving	Complete questions on page(s) 143	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on 4.1.4.1 Problem-solving.
	Paper 2 2. 4.2.5.23 Digital Sound 3. 4.2.5.24 MIDI	Understand the difference between analogue and digital: Sampling rate and the Nyquist theorem. Calculate sound sample sizes in bytes. an analogue to digital converter (ADC) a digital to analogue converter (DAC). Know that ADCs are used with analogue sensors.	Read Page(s) 207 to 219 of your Computer Science Textbook on	Complete questions on page(s) 219	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on 4.2.5.23 Digital Sound 4.2.5.24 MIDI.
6	**Paper 1** 2. 4.1.4.3 Abstraction 3. 4.1.4.4 Decomposition	Information hiding Procedural abstraction Functional abstraction Know that procedural decomposition means breaking a problem into a number of sub-problems, so	Read Page(s) 134 to 143 of your Computer Science Textbook on Abstraction	Complete questions on page(s) 143	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on 4.1.4.3 Abstraction 4.1.4.4 Decomposition 4.1.4.5 Composition 4.1.4.6 Automation.

Year 13

	4. 4.1.4.5 Composition 5. 4.1.4.6 Automation	that each sub-problem accomplishes an identifiable task, which might itself be further subdivided. Know how to build a composition abstraction by combining procedures to form compound procedures. Know how to build data abstractions by combining data objects to form compound data, for example tree data structure. Creating algorithms Implementing the algorithms in program code (instructions) Implementing the models in data structures			
	Paper 2 3. 4.2.5.25 Data Compression	Explain how bitmaps are represented.	Read Page(s) 207 to 219 of your Computer Science Textbook on	Complete questions on page(s) 219	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on 4.2.5.25 Data Compression.

Year 13 SPRING 1

Week	Specification Point	Key Concepts	Pre-Lesson Work	Set Homework	Independent Work Further Reading
1	**Paper 1** 4. 4.1.4 Theory of computation		Read Page(s) 134 to 178 of your Computer Science Textbook on Theory of computation	Complete questions on page(s) 179 to 180	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on 4.1.4 Theory of computation.
	Paper 2 5. 4.2.2 Fundamentals of computer systems		Read Page(s) 230 to 263 of your Computer Science Textbook on	Complete questions on page(s) 264	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on 4.2.2 Fundamentals of computer systems.
2	**Paper 1** 5. 4.1.4.7 Finite state machines (FSMs) with and without output	Be able to draw and interpret simple state transition diagrams and state transition tables for FSMs Be able to draw and interpret simple state transition diagrams and state transition tables for FSMs with output (Mealy machines only).	Read Page(s) 145 to 149 of your Computer Science Textbook on Finite state machines (FSMs) with and without output	Complete questions on page(s) 149	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on 4.1.4.7 Finite state machines (FSMs) with and without output.

Year 13

	Paper 2 5. 4.2.5.26 Encryption	Understand what is meant by encryption and be able to define it. Explain why Vernam cipher is considered as a cypher with perfect security. Compare Vernam cipher with ciphers that depend on computational security.	Read Page(s) 220 to 227 of your Computer Science Textbook on	Complete questions on page(s) 227	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on 4.2.5.26 Encryption.
3	**Paper 1** 3. 4.1.2.3 Queues	Linear queues, circular queues and priority queues. Add, remove. Test for empty and full	Read Page(s) 57 to 66 of your Computer Science Textbook on Queues	Complete questions on page(s) 66	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on 4.1.2.3 Queues.

Year 13

	Paper 2 5. 4.2.6.1 Hardware and Software 6. 4.2.6.2 Classification of Software	Understand the relationship between hardware and software and be able to define System software Operating Systems (OSs) Utility programs	Read Page(s) 230 to 237 of your Computer Science Textbook on	Complete questions on page(s) 237	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on 4.2.6.1 Hardware and Software 4.2.6.2 Classification of Software.
4	**Paper 1** 3. 4.1.2.4 Stacks	Push, Pop, Peek or top. Test for empty and full	Read Page(s) 57 to 66 of your Computer Science Textbook on Stacks	Complete questions on page(s) 66	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on 4.1.2.4 Stacks.
	Paper 2 3. 4.2.6.3 System Software	Libraries Translators (compiler, assembler, interpreter). Show awareness of the development of types of programming languages and	Read Page(s) 230 to 237 of your Computer Science Textbook on	Complete questions on page(s) 237	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on 4.2.6.3 System Software 4.2.6.4 Operating System.

Year 13

	4. 4.2.6.4 Operating System	their classification into low-and high-level languages. Know that high-level languages include imperative high-level language. Understand the advantages and disadvantages of machine-code and assembly language programming compared with high-level language programming.			
5	**Paper 1** 4. 4.1.2.5 Graphs	Be familiar with typical uses for graphs. Be able to explain the terms: Graph, Weighted Graph, Vertex/Node, Edge/Arc, Undirected Graph, Directed Graph. Know how an adjacency matrix and an adjacency list may be used to represent a graph.	Read Page(s) 67 to 76 of your Computer Science Textbook on Graphs	Complete questions on page(s) 76	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on 4.1.2.5 Graphs.
	Paper 2 4. 4.2.6.5 Classification of Programming Language 5. 4.2.6.6 Translators	Assembler Compiler Interpreter. Explain why an intermediate language such as bytecode is produced as the final output by some compilers and how it is subsequently used. Understand the difference between source code and object (executable) code.	Read Page(s) 238 to 244 of your Computer Science Textbook on	Complete questions on page(s) 244	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on 4.2.6.5 Classification of Programming Language 4.2.6.6 Translators.

Year 13

6	**Paper 1** 6. 4.1.2.6 Trees	Know that a tree is a connected, undirected graph with no cycles. Know that a binary tree is a rooted tree in which each node has at most two children. Be familiar with typical uses for rooted trees.	Read Page(s) 67 to 76 of your Computer Science Textbook on Trees	Complete questions on page(s) 76	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on 4.1.2.6 Trees.
	Paper 2 4. 4.2.6.7 Logic Gates 5. 4.2.6.8 Boolean Algebra	Be familiar with drawing and interpreting logic gate circuit diagrams involving one or more of the above gates. Complete a truth table for a given logic gate circuit. Recognise and trace the logic of the circuits of a half-adder and a full-adder. Be familiar with the use of Boolean identities and De Morgan's laws to manipulate and simplify Boolean expressions. Write a Boolean expression for a given logic gate circuit.	Read Page(s) 256 to263 of your Computer Science Textbook on	Complete questions on page(s) 263	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on 4.2.6.7 Logic Gates 4.2.6.8 Boolean Algebra.

Year 13 SPRING 2

Week	Specification Point	Key Concepts	Pre-Lesson Work	Set Homework	Independent Work Further Reading
1	**Paper 1** 5. 4.1.2 Fundamentals of data structures		Read Page(s) 50 to 89 of your Computer Science Textbook on Fundamentals of data structures	Complete questions on page(s) 90	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on 4.1.2 Fundamentals of data structures.
	Paper 2 6. 4.2.3 Fundamentals of computer organisation and architecture		Read Page(s) 266 to 297 of your Computer Science Textbook on	Complete questions on page(s) 298	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on 4.2.3 Fundamentals of computer organisation and architecture.
2	**Paper 1** 6. 4.1.3.1 Simple graph-traversal algorithms	Breadth-First and Depth-First Traversal	Read Page(s) 92 to 100 of your Computer Science Textbook on Simple graph-	Complete questions on page(s) 100	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on 4.1.3.1 Simple graph-traversal algorithms.

Year 13

			traversal algorithms		
	Paper 2 6. 4.2.7.1 Internal Components 7. 4.2.7.2 Memory and Storage	Have an understanding and knowledge of the basic internal components of a computer system. Understand the concept of addressable memory.	Read Page(s) 266 to 273 of your Computer Science Textbook on	Complete questions on page(s) 272 to 273	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on 4.2.7.1 Internal Components 4.2.7.2 Memory and Storage. 
3	**Paper 1** 4. 4.1.3.2 Simple tree-traversal algorithms	Pre-order, Post-order, In-order.	Read Page(s) 92 to 100 of your Computer Science Textbook on Simple tree-traversal algorithms	Complete questions on page(s) 100	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on 4.1.3.2 Simple tree-traversal algorithms. 

Year 13

	Paper 2 7. 4.2.7.3 Processor 8. 4.2.7.4 Fetch and Execute Cycle 9. 4.2.7.5 Instruction set 10. 4.2.7.6 Addressing Modes	Be able to explain the difference between von Neumann and Harvard architectures and describe where each is typically used. The Fetch-Execute cycle and the role of registers within it Explain how the Fetch-Execute cycle is used to execute machine code programs including the stages in the cycle (fetch, decode, execute) and details of registers used.	Read Page(s) 266 to 273 of your Computer Science Textbook on	Complete questions on page(s) 272 to 273	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on 4.2.7.3 Processor 4.2.7.4 Fetch and Execute Cycle 4.2.7.5 Instruction set 4.2.7.6 Addressing Modes.
4	**Paper 1** 4. 4.1.3.2 Simple tree-traversal algorithms	Pre-order, Post-order, In-order.	Read Page(s) 92 to 100 of your Computer Science Textbook on Simple tree-traversal algorithms	Complete questions on page(s) 100	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on 4.1.3.2 Simple tree-traversal algorithms.
	Paper 2 5. 4.2.7.7 Assembly language 6. 4.2.7.8 Interrupts	Use the basic machine-code operations above when machine-code instructions are expressed in mnemonic form-assembly language, using immediate and direct addressing.	Read Page(s) 281 to 286 of your Computer Science Textbook on	Complete questions on page(s) 286	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on 4.2.7.7 Assembly language 4.2.7.8 Interrupts 4.2.7.9 Processor Performance.

Year 13

	7. 4.2.7.9 Processor Performance	Describe the role of interrupts and interrupt service routines (ISRs); their effect on the Fetch-Execute cycle; and the need to save the volatile environment while the interrupt is being serviced. Explain the effect on processor performance of: multiple cores clock speed			
5	**Paper 1** 5. 4.1.3.4 Search Algorithms	Linear search, Binary search, Binary tree search	Read Page(s) 110 to 116 of your Computer Science Textbook on Search Algorithms	Complete questions on page(s) 116	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on 4.1.3.4 Search Algorithms.
	Paper 2 6. 4.2.7.10 Input and Output devices	Know the main characteristics, purposes and suitability of the devices and understand their principles of operation.	Read Page(s) 287 to 297 of your Computer Science Textbook on	Complete questions on page(s) 297	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on 4.2.7.10 Input and Output devices.

Year 13

6	**Paper 1** 7. 4.1.3.5 Sort Algorithms	Bubble sort and Merge sort	Read Page(s) 124 to 131 of your Computer Science Textbook on Sort Algorithms	Complete questions on page(s) 131	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on 4.1.3.5 Sort Algorithms.
	Paper 2 6. 4.2.7.11 Secondary storage	Explain the need for secondary storage within a computer system. Know the main characteristics, purposes, suitability and understand the principles of operation of the following devices: Compare the capacity and speed of access of various media and make a judgement about their suitability for different applications.	Read Page(s) 287 to 297 of your Computer Science Textbook on	Complete questions on page(s) 297	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on 4.2.7.11 Secondary storage.

Year 13 SUMMER 1

Subject: A-Level Computer Science

Week	Specification Point	Key Concepts	Pre-Lesson Work	Set Homework	Independent Work Further Reading
1	**Paper 1** 6. 4.1.3.5 Sort Algorithms	Bubble sort and Merge sort	Read Page(s) 124 to 131 of your Computer Science Textbook on Sort Algorithms	Complete questions on page(s) 131	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on 4.1.3.5 Sort Algorithms.
	Paper 2 7. 4.2.7.11 Secondary storage	Explain the need for secondary storage within a computer system. Know the main characteristics, purposes, suitability and understand the principles of operation of the following devices: Compare the capacity and speed of access of various media and make a judgement about their suitability for different applications.	Read Page(s) 287 to 297 of your Computer Science Textbook on	Complete questions on page(s) 297	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on 4.2.7.11 Secondary storage.
2	**Paper 1** 7. 4.1.3 Fundamentals of algorithms		Read Page(s) 92 to 131 of your Computer Science Textbook on Fundamentals of algorithms	Complete questions on page(s) 132	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on 4.1.3 Fundamentals of algorithms.

Year 13

	Paper 2 8. 4.2.3 Fundamentals of computer organisation and architecture		Read Page(s) 266 to 297 of your Computer Science Textbook on	Complete questions on page(s) 298	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on 4.2.3 Fundamentals of computer organisation and architecture.
3	**Paper 1** 5. Prep Preparation for AS Mock Exam Skeleton Code		Read Page(s) 2 to 179 of your Computer Science Textbook on Preparation for AS Mock Exam Skeleton Code	Complete questions on page(s) 2 to 179	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on Prep Preparation for AS Mock Exam Skeleton Code.
	Paper 2 11. 4.2.9.1 Communication methods	Define serial and parallel transmission methods and discuss the advantages of serial over parallel transmission. Define and compare synchronous and asynchronous data transmission.	Read Page(s) 310 to 316 of your Computer Science Textbook on	Complete questions on page(s) 316	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on 4.2.9.1 Communication methods 4.2.9.2 Basic Communication.

Year 13

	12. 4.2.9.2 Basic Communication	Describe the purpose of start and stop bits in asynchronous data transmission. Differentiate between baud rate and bit rate. Understand the relationship between bit rate and bandwidth.			
4	**Paper 1** 5. Prep Preparation for AS Mock Exam Skeleton Code		Read Page(s) 2 to 179 of your Computer Science Textbook on Preparation for AS Mock Exam Skeleton Code	Complete questions on page(s) 2 to 179	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on Prep Preparation for AS Mock Exam Skeleton Code.
	Paper 2 8. 4.2.9.3 Topology 9. 4.2.9.4 Network Types	Physical star topology Logical bus network topology Types of networking between hosts Peer-to-peer networking Client-server networking.	Read Page(s) 310 to 316 of your Computer Science Textbook on	Complete questions on page(s) 316	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on 4.2.9.3 Topology 4.2.9.4 Network Types.

Year 13

5	**Paper 1** 6. Prep Preparation for AS Mock Exam Skeleton Code		Read Page(s) 2 to 179 of your Computer Science Textbook on Preparation for AS Mock Exam Skeleton Code	Complete questions on page(s) 2 to 179	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on Prep Preparation for AS Mock Exam Skeleton Code.
	Paper 2 7. 4.2.8.4 Data Protection (GDPR) 8. 4.2.8.5 Computer Misuse 9. 4.2.8.6 The Copyright, Designs and Patents Act 10. 4.2.8.9 Investigatory powers act	Be able to discuss the challenges facing legislators in the digital age. Be able to discuss the challenges facing legislators in the digital age. Be able to discuss the challenges facing legislators in the digital age. Be able to discuss the challenges facing legislators in the digital age.	Read Page(s) 300 to 308 of your Computer Science Textbook on	Complete questions on page(s) 308	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on 4.2.8.4 Data Protection (GDPR) 4.2.8.5 Computer Misuse 4.2.8.6 The Copyright, Designs and Patents Act 4.2.8.9 Investigatory powers act.
6	**Paper 1** 8. Prep Preparation for AS Mock Exam Skeleton Code		Read Page(s) 2 to 179 of your Computer Science Textbook on Preparation for AS	Complete questions on page(s) 2 to 179	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on Prep Preparation for AS Mock Exam Skeleton Code.

Year 13

			Mock Exam Skeleton Code		
	Paper 2 7. 4.2.8.3 Robotics and AI 8. 4.2.8.2 Digital Divide 9. 4.2.8.1 Monitoring And Surveillance	Show awareness of current individual (moral), social (ethical), legal and cultural opportunities and risks of computing. Show awareness of current individual (moral), social (ethical), legal and cultural opportunities and risks of computing. Impact of computer systems to distribute, publish, communicate and disseminate personal information.	Read Page(s) 300 to 308 of your Computer Science Textbook on	Complete questions on page(s) 308	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on 4.2.8.3 Robotics and AI 4.2.8.2 Digital Divide 4.2.8.1 Monitoring And Surveillance .

Year 13 SUMMER 2

Week	Specification Point	Key Concepts	Pre-Lesson Work	Set Homework	Independent Work Further Reading
1	**Paper 1** 7. Prep Preparation for AS Mock Exam Skeleton Code		Read Page(s) 2 to 179 of your Computer Science Textbook on Preparation for AS Mock Exam Skeleton Code	Complete questions on page(s) 2 to 179	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on Prep Preparation for AS Mock Exam Skeleton Code. 
	Paper 2 8. 4.2.8.3 Robotics and AI 9. 4.2.8.2 Digital Divide 10. 4.2.8.1 Monitoring And Surveillance	Show awareness of current individual (moral), social (ethical), legal and cultural opportunities and risks of computing. Show awareness of current individual (moral), social (ethical), legal and cultural opportunities and risks of computing. Impact of computer systems to distribute, publish, communicate and disseminate personal information.	Read Page(s) 300 to 308 of your Computer Science Textbook on	Complete questions on page(s) 308	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on 4.2.8.3 Robotics and AI 4.2.8.2 Digital Divide 4.2.8.1 Monitoring And Surveillance . 
2	**Paper 1** 8. Prep Preparation for AS Mock Exam Skeleton Code		Read Page(s) 2 to 179 of your Computer Science Textbook on Preparation for AS	Complete questions on page(s) 2 to 179	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on Prep Preparation for AS Mock Exam Skeleton Code.

Year 13

			Mock Exam Skeleton Code		
	Paper 1 9. Prep Preparation for AS Mock Exam Skeleton Code		Read Page(s) 2 to 179 of your Computer Science Textbook on	Complete questions on page(s) 2 to 179	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on Prep Preparation for AS Mock Exam Skeleton Code.
3	**Paper 1** 6. Prep Preparation for AS Mock Exam Skeleton Code		Read Page(s) 2 to 179 of your Computer Science Textbook on Preparation for AS Mock Exam Skeleton Code	Complete questions on page(s) 2 to 179	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on Prep Preparation for AS Mock Exam Skeleton Code.

Year 13

	Paper 1 13. Prep Preparation for AS Mock Exam Skeleton Code		Read Page(s) 2 to 179 of your Computer Science Textbook on	Complete questions on page(s) 2 to 179	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on Prep Preparation for AS Mock Exam Skeleton Code.
4	**Paper 1** 6. Prep Preparation for AS Mock Exam Skeleton Code		Read Page(s) 2 to 179 of your Computer Science Textbook on Preparation for AS Mock Exam Skeleton Code	Complete questions on page(s) 2 to 179	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on Prep Preparation for AS Mock Exam Skeleton Code.
	Paper 1 10. Prep Preparation for AS Mock Exam Skeleton Code		Read Page(s) 2 to 179 of your Computer Science Textbook on	Complete questions on page(s) 2 to 179	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on Prep Preparation for AS Mock Exam Skeleton Code.

Year 13

5	**Paper 1** 7. 4.1.13.1 System Life Cycle 8. 4.1.13.2 Rapid Development	Rapid Application Development/Agile Development	Read Page(s) 408 to 422 of your Computer Science Textbook on System Life Cycle	Complete questions on page(s) 416	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on 4.1.13.1 System Life Cycle 4.1.13.2 Rapid Development.
	Paper 2 11. 4.2.10.1 Data Models 12. 4.2.10.2 Relational databases	Produce a data model from given data requirements for a simple scenario involving multiple entities. Produce entity relationship diagrams representing a data model and entity descriptions in the form: Entity1 (Attribute1, Attribute2, ...). Explain the concept of a relational database	Read Page(s) 364 to 374 of your Computer Science Textbook on	Complete questions on page(s) 374	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on 4.2.10.1 Data Models 4.2.10.2 Relational databases.

Year 13

6	**Paper 1** 9. 4.1.13.3 Analysis	User Requirements Prototyping	Read Page(s) 409 to 410 of your Computer Science Textbook on Analysis	Complete questions on page(s) 416	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on 4.1.13.3 Analysis.
	Paper 2 10. 4.2.10.2 Relational databases 11. 4.2.10.4 SQL 12. 4.2.10.5 Client Server Databases	Explain the concept of a relational database Be able to use SQL to retrieve, update, insert and delete data from multiple tables of a relational database. Be able to use SQL to define a database table. Know that a client server database system provides simultaneous access to the database for multiple clients. Know how concurrent access can be controlled to preserve the integrity of the database.	Read Page(s) 364 to 374 of your Computer Science Textbook on	Complete questions on page(s) 374	Using the video, class notes and your pre-reading material fill in the Cornell Notes provided on 4.2.10.2 Relational databases 4.2.10.4 SQL 4.2.10.5 Client Server Databases.