

Year 11 Computer Science Curriculum Map

	Autumn Term	Spring Term	Summer Term
<p>Links to the National curriculum/Assessment Objectives</p>	<p>AO1: Construct truth tables for AND, OR and NOT. AO2: Create, modify and interpret simple logic circuit diagrams. AO3: Explain what is meant by:</p> <ul style="list-style-type: none"> • system software • application software. <p>AO4: Explain the effect of the following on the performance of the CPU AO6: Understand and explain the Fetch-Execute cycle. AO7: Understand the differences between main memory and secondary storage AO8: Understand why secondary storage is required AO9: Be aware of different types of secondary storage (solid state, optical and magnetic)</p>	<ul style="list-style-type: none"> • AO1: Students will be expected to understand and explain the general principles behind the issues rather than have detailed knowledge on specific issues. • AO2: Students should be aware that ordinary citizens normally value their privacy and may not like it when governments or security services have too much access • AO3: Students should be aware that governments and security services often argue that they cannot keep their citizens safe from terrorism and other attacks unless they have access to private data. 	<p>AO1 Explain the concept of a database AO2 Explain the concept of a relational database AO3 Understand the following database concepts:</p> <ul style="list-style-type: none"> • table • record • field • primary key • foreign key <p>AO4 Understand that the use of a relational database facilitates the elimination of data inconsistency and data redundancy. AO5 Be able to use SQL to retrieve data from a relational database, using the commands:</p> <ul style="list-style-type: none"> • SELECT • FROM • WHERE • ORDER BY...ASC DESC <p>AO6 Be able to use SQL to insert data into a relational database AO7 Be able to use SQL to edit and delete data in a database using the commands</p>
<p>Description of the topic and key learning outcomes (key knowledge and understanding)</p>	<p>Module 5: Computer Systems Boolean logic in the form of diagrams and truth table and different aspects of systems architecture</p> <p>The topic areas covered are:</p> <ol style="list-style-type: none"> 1. Boolean logic diagrams and truth tables 2. System software an Application software 3. CPU performance 4. FDE Cycle 5. Memory and secondary storage 6. Solid state 7. Optical Storage 8. Magnetic Storage 	<p>Module 4: Ethical, Legal and Environmental impacts of digital technology on the wider society including privacy issues Binary representation of data within all digital devices and networks.</p> <p>The topics areas covered are:</p> <ol style="list-style-type: none"> 1. cyber security 2. mobile technologies 3. wireless networking 4. cloud storage 5. theft of computer code 6. issues around copyright of algorithms 7. cracking 8. hacking 	<p>Module 6: Relational Databases and SQL</p> <p>This unit introduces learners to the world of databases and SQL. Learners explore the key terms used in a database and learn why relational databases are used to eliminate the redundancy and inconsistencies that can occur in a flat file database. Next, they explore increasingly challenging SQL commands where they retrieve, update, and delete data in a relational database</p> <p>The topic areas covered are:</p> <ol style="list-style-type: none"> 1. Databases

		<p>9. wearable technologies</p> <p>10. Computer based implants.</p>	<p>2. Relational Databases</p> <p>3. Fields, Records, Tables</p> <p>4. Primary and Foreign Keys</p> <p>5. Inconsistency</p> <p>6. Redundancy</p> <p>7. Insert, Update and Delete</p>
Related Concepts (that are revisited)	Boolean logic, FDE cycle – facts and diagrammatic / Hardware circuit boards	Cyber security / Wider Society issues/ Hacking/ Legal issues, DPA, Computer misuse act	Boolean logic, Python
Skills being taught	Memorising facts and relating the facts with diagrams.	Essay style questions, sentence construction, computer science vocabulary.	Problem solving as well as understand data management in relation to sorting and searching
Milestone assessments	<p>AO1: Construct truth tables for AND, OR and NOT.</p> <p>AO2: Create, modify and interpret simple logic circuit diagrams.</p> <p>AO3: Explain what is meant by:</p> <ul style="list-style-type: none"> • system software • application software. 	<ul style="list-style-type: none"> • AO1: Students will be expected to understand and explain the general principles behind the issues rather than have detailed knowledge on specific issues. • AO2: Students should be aware that ordinary citizens normally value their privacy and may not like it when governments or security services have too much access 	<p>AO4 Understand that the use of a relational database facilitates the elimination of data inconsistency and data redundancy.</p> <p>AO5 Be able to use SQL to retrieve data from a relational database, using the commands:</p> <ul style="list-style-type: none"> • SELECT • FROM • WHERE • ORDER BY...ASC DESC
Wider reading	<p>https://www.bbc.co.uk/bitesize/examspecs/zkwsjhw</p> <p>https://senecalearning.com/en-GB/blog/gcse-computer-science-revision/</p>		
Literacy programme	<ul style="list-style-type: none"> • Increase vocabulary with emphasis on keywords within Computer science. • Use tier 1, 2 and 3 words to increase their vocabulary knowledge • Embed deliberate practice questions within tasks. Use past exam papers as a guide to write deliberate practice questions 	<ul style="list-style-type: none"> • Increase vocabulary with emphasis on keywords within Computer science. • Use tier 1, 2 and 3 words to increase their vocabulary knowledge • Embed deliberate practice questions within tasks. Use past exam papers 	<ul style="list-style-type: none"> • Increase vocabulary with emphasis on keywords within Computer science. • Use tier 1, 2 and 3 words to increase their vocabulary knowledge • Embed deliberate practice questions within tasks. Use past exam papers as a guide to write deliberate practice questions

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Homework / Independent Learning Tasks	1. Use Logic.ly to run and execute your logic gate design. Practice using AND, OR and NOT.	2. Log into HAPS from the school website download the resources and start the deliberate practice questions	3. Use Logic.ly to run and execute your logic gate design. Practice using AND, OR and NOT.
Oak Academy Links			