AQA CompSci – 3 Year Plan

Year 9	Year 10	Year 11
EXAM – June. Reduced and modified paper 1 style – algorithms, trace tables etc… 45 mins?	**EXAM – April/May** Whole paper 1 1.5 hr Poss 1x20 min longer Paper 2 style Q.	**MOCK 1 – Nov** Whole paper 1 (previous summer) 1.5 hr **MOCK 2 – Feb** Whole paper 2 (previous summer) 1.5 hr • Argument for additional Paper 1 if necessary
3.1 Algorithms 3.1.1 Algorithm definitions • return to throughout • decomp – when teach subroutines (3.2.10) 3.1.1 (e) IPO 3.1.1 (f) Trace tables • integrate both into programming 3.1.2 Efficiency – refer to and keep returning to • return to formally Yr 11 A1 **NOT** 3.1.3 Search or 3.1.4 Sort – Yr 11 A1 **3.2 Programming** 3.2.1 Data types 3.2.2 (a/d) Variables 3.2.2.(b) Iteration – for and while loops • Poss leave repeat until 3.4.2 Yr 10 3.2.2.(c) Selection – including nesting 3.2.2 Subroutines – see 3.2.10 3.2.3 Arithmetic operators • link with trace tables	**3.3 Data Representation** 3.3.1 Number bases 3.3.2 Converting number bases 3.3.3 Bits and bytes 3.3.4 Binary arithmetic 3.3.5 Char encoding • include string handling char codes 3.2.8 • return to 2D arrays and prog concepts 3.3.6 Image representation • possible file handling aspect? 3.3.7 Sound 3.3.8 Compression – RLE and Huffman **3.4 Computer systems** 3.4.1 HW and SW 3.4.3 SW classes	**Prep for NEA** 3.1.3 Search algorithms • return to Subroutines, loca/global, complex Boolean logic 3.1.4 Sort algorithms 3.7 copyright of algorithms 3.7 theft of code 3.1.2 efficiency of algorithms – re: search/sort 3.2.6 data structures (2D arrays and Directories) 3.2.7 (c) file handling 3.2.10 subroutines, inc local and global vars 3.2.11 Structured programming - advantages 3.2.12 Testing, valid and verif review **3.8 NEA – 20 hours – pre Xmas** **3.7 Ethics** • data privacy
3.2.4 Relational operators • link with trace tables 3.2.5 Boolean operators – briefly	3.4.4 Systems architecture 3.4.4 (h/i) Cloud storage	• cyber security – Yr 10 3.6 • mobile tech – Yr 10 part (3.5 networks)

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<table>
<tr><th>Year 9</th><th>Year 10</th><th>Year 11</th></tr>
<tr>
<td rowspan="4">• come back to in 3.4.2 formal logic – Y10
3.2.6 Data structures – only 1D arrays
• return to 2D and Directories in Yr. 11

3.2.7 (a/b) Input, output – throughout
• link to data types and conversions
3.2.7 (c) File handling – briefly. Return in Yr. 11 A1

3.2.8 String handling
• not char codes – do these in 3.3.5 Yr 10
3.2.9 Random numbers

3.2.10 Subroutines – inc. local and global variables and see 3.2.2
• also review in Yr 11 A1
3.2.11 Structured programming – embed throughout
• teach formally in Yr 11 A1 (advantages)
3.2.12 Testing – embed; return to formally teach in Yr 11 A1
3.2.12 Valid/verif – basic; return to in Yr 11 A1
<b>NOT</b>
3.2.13 High and low level languages – embed in Systems Architecture – Yr 10</td>
<td>• link to 3.7 cloud storage
3.2.13 High and low level prog languages
• embed with systems arc, espec 3.4.4 (j) embedded systems</td>
<td rowspan="3">• wireless networks – Yr 10 (3.5 networks)

• cloud storage – Yr 10 (3.4.4 systems arc)

• theft of computer code (above)
• copyright of algorithms (above)
• cracking – 3.6 security
• hacking – 3.6 security

• wearable technologies – re. Yr 10 (3.4.4 (j) embedded systems)
• implants – (as above)</td>
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<tr>
<td><b>3.4.2.Boolean logic</b>
• include 3.2.5 Boolean operators
• Truth tables
• Review of Trace tables
• add in Repeat loops</td>
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<td rowspan="2"><b>3.5 Networks</b>

3.5 (a/b/c) Types of network
• link to 3.7 wireless networking
• link to 3.7 mobile technologies
3.5 (d) Topologies

3.5 (e) Protocols

3.5 (f/g) Security – links to 3.6 Security

3.5 (h) TCP/IP – link with 3.5 (e) protocols</td>
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<tr>
<td rowspan="2"><b>Exam Prep</b></td>
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<td><b>3.6 Cyber security</b>
link to 3.7 cracking, hacking, theft of code
3.6 (a) definitions
3.6 (b) threats
3.6.1.1.social engineering
3.6.1.2 malware
3.6 (c) penetration testing
3.6.2 detect and prevent
• link to threats and combine</td>
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