

Year 11 Computer Science Homework January – March 2025

<u>Week;</u>	<u>Topic Area</u>	<u>Video Link</u>	<u>Activity</u>
1 – 20th January	<p>Fundamentals of data representation: Binary, hexadecimal, and decimal conversions (3.3.2). Binary arithmetic and shifts (3.3.4).</p>	<p>72. AQA GCSE (8525) SLR13 - 3.3 Number bases 73. AQA GCSE (8525) SLR13 - 3.3 Bit patterns 74. AQA GCSE (8525) SLR13 - 3.3 Why hexadecimal is used 75. AQA GCSE (8525) SLR13 - 3.3 Converting between decimal & binary 76. AQA GCSE (8525) SLR13 - 3.3 Converting between decimal & hex 78. AQA GCSE (8525) SLR13 - 3.3 8-bit binary addition 79. AQA GCSE (8525) SLR13 - 3.3 Binary shifts</p>	<p>Watch the videos and make either a mind-map or flash cards.</p> <p>Answer questions at http://smartrevise.online/</p> <p>Due on the following Monday of each week.</p>
2 – 27th January	<p>Data representation for media: Bitmap image representation (3.3.6). File size calculations based on resolution and color depth (3.3.6).</p>	<p>81. AQA GCSE (8525) SLR13 - 3.3 Images 82. AQA GCSE (8525) SLR13 - 3.3 Sound</p>	<p>Watch the videos and make either a mind-map or flash cards.</p> <p>Answer questions at http://smartrevise.online/</p> <p>Due on the following Monday of each week.</p>
3 – 3rd February	<p>Logic gates and Boolean expressions: Truth tables for AND, OR, NOT, XOR (3.4.2). Writing Boolean expressions from logic circuits (3.4.2).</p>	<p>64. AQA GCSE (8525) SLR10 - 3.2 Identifying syntax and logic errors 65. AQA GCSE (8525) SLR11 - 3.4 Logic circuit diagrams 66. AQA GCSE (8525) SLR11 - 3.4 Truth tables 67. AQA GCSE (8525) SLR11 - 3.4 Boolean expressions 68. AQA GCSE (8525) SLR11 - 3.4 Applying logical operators in truth tables</p>	<p>Watch the videos and make either a mind-map or flash cards.</p> <p>Answer questions at http://smartrevise.online/</p> <p>Due on the following Monday of each week.</p>

<p>4 – 10th February</p>	<p>Components of computer systems: CPU components: control unit, cache, clock (3.4.5). Performance improvement factors: cores, clock speed, cache size (3.4.5).</p>	<p>1. AQA GCSE (8525) SLR1 - 3.4 CPU components 3. AQA GCSE (8525) SLR1 - 3.4 Performance of CPUs 4. AQA GCSE (8525) SLR1 - 3.4 Fetch-execute cycle</p>	<p>Watch the videos and make either a mind-map or flash cards.</p> <p>Answer questions at http://smartrevise.online/</p> <p>Due on the following Monday of each week.</p>
<p>5 – 17th February</p>	<p>Computer networks: Network types: LAN, WAN, PAN (3.5). Protocols: TCP/IP model, HTTP, SMTP, IMAP (3.5). Advantages and disadvantages of wired vs. wireless networks (3.5).</p>	<p>12. AQA GCSE (8525) SLR3 - 3.5 Types of networks 13. AQA GCSE (8525) SLR3 - 3.5 Modes of connection 15. AQA GCSE (8525) SLR3 - 3.5 Common network protocols 17. AQA GCSE (8525) SLR3 - 3.5 The TCP-IP protocol model</p>	<p>Watch the videos and make either a mind-map or flash cards.</p> <p>Answer questions at http://smartrevise.online/</p> <p>Due on the following Monday of each week.</p>
<p>6 – 24th February</p>	<p>Cybersecurity: Cybersecurity threats: malware, phishing, blagging (3.6.2). Methods to secure systems (e.g., firewalls, encryption) (3.6.3).</p>	<p>16. AQA GCSE (8525) SLR3 - 3.5 The need for & methods of network security 18. AQA GCSE (8525) SLR4 - 3.6 Cyber security & threats 19. AQA GCSE (8525) SLR4 - 3.6 Social engineering threats 20. AQA GCSE (8525) SLR4 - 3.6 Malware 21. AQA GCSE (8525) SLR4 - 3.6 Penetration testing 22. AQA GCSE (8525) SLR4 - 3.6 Security measures</p>	<p>Watch the videos and make either a mind-map or flash cards.</p> <p>Answer questions at http://smartrevise.online/</p> <p>Due on the following Monday of each week.</p>