

## AQA Specification changes for exams in summer 2019

AQA issued an updated specification in August 2017 for students who will be taking exams in summer 2019. For centres following a 2-year KS4, this applies to year 10 from September 2017. For centres following a 3-year KS4, this applies to year 9 from September 2016.

Here is a summary of the changes with essential changes highlighted in green:

Code	Original	New
3.3.4a	<p><b>Content:</b> Be able to add together up to three binary numbers.</p> <p><b>Additional Information:</b> Students will be expected to use a maximum of 8 bits and a maximum of 3 values to add.</p> <p>Answers will be a maximum of 8 bits in length and will not involve carrying beyond the eight bits.</p>	<p><b>Content:</b> Be able to add together up to three binary numbers.</p> <p><b>Additional Information:</b> Students will need to be able to add together up to three binary numbers, using a maximum of 8 bits per number.</p> <p>Students will only be expected to add together a maximum of three 1s in a single column.</p> <p>Answers will be a maximum of 8 bits in length and will not involve carrying beyond the eight bits.</p>
3.3.6b	<p><b>Content:</b> Describe the following for bitmaps:</p> <ul style="list-style-type: none"> <li>• size in pixels</li> <li>• colour depth.</li> </ul> <p><b>Additional Information:</b> The size of an image is expressed directly as width of image in pixels by height of image in pixels using the notation width x height.</p> <p>Colour depth is the number of bits used to represent each pixel.</p>	<p><b>Content:</b> Describe the following for bitmaps:</p> <ul style="list-style-type: none"> <li>• size in pixels</li> <li>• colour depth.</li> </ul> <p>Know that the size of a bitmap image in pixels (width x height) is known as the image resolution.</p> <p><b>Additional Information:</b> The size of an image is expressed directly as width of image in pixels by height of image in pixels using the notation width x height.</p> <p>Colour depth is the number of bits used to represent each pixel.</p>

<p>3.3.8b</p>	<p><b>Content:</b> Explain how data can be compressed using Huffman coding.</p> <p>Be able to interpret Huffman trees.</p> <p><b>Additional Information:</b> Students should be familiar with the process of using a tree to represent the Huffman code.</p> <p>Students should be able to interpret a given Huffman tree to determine the code used for a particular node within the tree.</p>	<p><b>Content:</b> Explain how data can be compressed using Huffman coding.</p> <p>Be able to interpret/create Huffman trees.</p> <p><b>Additional Information:</b> Students should be familiar with the process of using a tree to represent the Huffman code.</p> <p>Students should be able to create a new Huffman tree or use a given Huffman tree to:</p> <ul style="list-style-type: none"> <li>• determine the code used for a particular node within the tree (encoding)</li> <li>• determine the node within a tree given its code (decoding).</li> </ul>
<p>3.4.4e</p>	<p><b>Content:</b> Understand the differences between main memory and secondary storage</p> <p>Understand the differences between RAM and ROM</p> <p><b>Additional Information:</b> Students should be able to explain the terms volatile and non-volatile.</p> <p>Secondary storage is considered to be any non-volatile storage mechanism external to the CPU.</p>	<p><b>Content:</b> Understand the differences between main memory and secondary storage.</p> <p>Understand the differences between RAM and ROM.</p> <p><b>Additional Information:</b> Students should be able to explain the terms volatile and non-volatile.</p> <p>Secondary storage is considered to be any non-volatile storage mechanism not directly accessible by the CPU.</p>

<p>3.5i</p>	<p><b>Content:</b> Describe the 4 layer TCP/IP model:</p> <ul style="list-style-type: none"> <li>• application layer</li> <li>• transport layer</li> <li>• network layer</li> <li>• data link layer.</li> </ul> <p>Understand that the HTTP, HTTPS, SMTP, IMAP and FTP protocols operate at the application layer.</p> <p>Understand that the TCP and UDP protocols operate at the transport layer.</p> <p>Understand that the IP protocol operates at the network layer.</p> <p><b>Additional Information:</b> Students should be able to name the layers and describe their main function(s) in a networking environment.</p> <p>Application layer: this is where the network applications, such as web browsers or email programs, operate.</p> <p>Transport layer: this layer sets up the communication between the two hosts and they agree settings such as 'language' and size of packets.</p> <p>Network layer: addresses and packages data for transmission. Routes the packets across the network.</p> <p>Data link layer: this is where the network hardware such as the NIC (network interface card) is located. OS device drivers also sit here.</p> <p>Teachers should be aware that the <b>network layer is sometimes referred to as the internet layer</b> and that the data link layer is sometimes referred to as the network interface layer. However, students will not be expected to know these alternative layer names.</p>	<p><b>Content:</b> Describe the 4 layer TCP/IP model:</p> <ul style="list-style-type: none"> <li>• application layer</li> <li>• transport layer</li> <li>• internet layer</li> <li>• link layer.</li> </ul> <p>Understand that the HTTP, HTTPS, SMTP, IMAP and FTP protocols operate at the application layer.</p> <p>Understand that the TCP and UDP protocols operate at the transport layer.</p> <p>Understand that the IP protocol operates at the <b>internet layer</b>.</p> <p><b>Additional Information:</b> Students should be able to name the layers and describe their main function(s) in a networking environment.</p> <p>Application layer: this is where the network applications, such as web browsers or email programs, operate.</p> <p>Transport layer: this layer sets up the communication between the two hosts and they agree settings such as 'language' and size of packets.</p> <p><b>Internet layer:</b> addresses and packages data for transmission. Routes the packets across the network.</p> <p><b>Link layer:</b> this is where the network hardware such as the NIC (network interface card) is located. OS device drivers also sit here.</p> <p>Teachers should be aware that the <b>link layer is sometimes referred to as the network access layer or network interface layer</b>. However, students will not be expected to know these alternative layer names.</p>
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