

Summary of changes

Introduction

This resource outlines the updates to the GCSE Computer Science (8525) specification, for first teaching in 2025 and first exam in 2027.

This resource has been created to provide a summary of the updates made. Only changes to the subject content are listed in the summary. No other changes have been made to the specification.

The changes have been coded as follows:

Change to the specification	This means	Coding	Impact on teaching and learning
Removed	Specification content has been removed.	Strikethrough	No longer a requirement to teach. Review planning and teaching materials in light of change.
Reworded	Change to the terminology used in the specification.	<i>Italics</i>	Amend teaching resources to reflect the new terminology used in the updated specification. No change to specification content.

Current specification content	Current spec additional information	Updates to specification content
<p>3.3.7 Representing sound</p> <p>Understand that sound is analogue and this it must be converted to a digital form for storage and processing in a computer.</p>		<p>The following specification content is:</p> <p>Removed</p> <p>Reference to 'in a computer'.</p>
<p>3.4.5 Systems architecture</p> <p>Explain the role and operation of main memory and the following major components of a central processing unit (CPU) within the Von Neumann architecture:</p> <ul style="list-style-type: none"> • arithmetic logic unit • control unit • clock • register • bus. <p>Be aware of different types of secondary storage (solid state, optical and magnetic.)</p> <p>Explain the operation of solid state, optical and magnetic storage.</p> <p>Discuss the advantages and disadvantages of solid state, optical and magnetic storage.</p>	<p>A bus is a collection of wires through which data/signals are transmitted from one component to another.</p> <p>Knowledge of specific register not required.</p> <p>Students should be aware that SSDs use electrical circuits to persistently store data but will not need to know the precise details such as use of NAND gates.</p>	<p>The following specification content is:</p> <p>Removed</p> <ul style="list-style-type: none"> • Reference to the Von Neumann architecture • References to optical secondary storage.

Current specification content	Current spec additional information	Updates to specification content
<p>3.5 Fundamentals of computer networks</p> <p>Describe the following common LAN topologies:</p> <ul style="list-style-type: none"> ● star ● bus. <p>Explain the purpose and use of common network protocols, including:</p> <ul style="list-style-type: none"> ● Ethernet ● Wi-Fi <ul style="list-style-type: none"> ● TCP (Transmission Control Protocol) ● UDP (User Datagram Protocol) ● IP (Internet Protocol) ● HTTP (Hypertext Transfer Protocol) ● HTTPS (Hypertext Transfer Protocol Secure) ● FTP (File Transfer Protocol) ● Email protocols: <ul style="list-style-type: none"> ● SMTP (Simple Mail Transfer Protocol) ● IMAP (Internet Message Access Protocol). 	<p>Students should be able to draw topology diagrams and describe the differences between the two topologies. They should also be able to select the most appropriate topology for a given scenario.</p> <p>Students should know what each protocol is used for (e.g. HTTPS provides an encrypted version of HTTP for more secure web transactions).</p> <p>Students should understand that Ethernet is a family of related protocols rather than a single protocol. They do not need to know the individual protocols that make up the ethernet family.</p> <p>Students should understand that Wi-Fi is a family of related protocols rather than a single protocol. They do not need to know the individual protocols that make up the Wi-Fi family but they should know that Wi-Fi is a trademark and the generic term for networks of this nature is WLAN.</p>	<p>The following specification content is:</p> <p>Removed</p> <ul style="list-style-type: none"> ● References to LAN topologies ● References to needing to know the use of common network protocols ● References to Ethernet ● References to Wi-Fi ● References to UDP ● References to FTP ● References to alternative names for the link layer. <p>Reworded</p> <p>'OS drivers now <i>sit</i> here' has been changed to 'OS drivers now <i>operate</i> here'.</p> <p>'Understand that the <i>TCP and UDP protocols operate</i> at the transport layer' has been changed to 'Understand that the <i>TCP protocol operates</i> at the transport layer'.</p>

Current specification content	Current spec additional information	Updates to specification content
<p>Describe the 4 layer TCP/IP model:</p> <ul style="list-style-type: none"> • application layer • transport layer • internet layer • link layer. <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 internet layer.</p>	<p>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 the size of packets.</p> <p>Internet layer: addresses and packages data for transmission. Routes the packets across the network.</p> <p>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 link layer is sometimes referred to as the network access layer or network interface layer. However, students will not be expected to know these alternative layer names.</p>	