MODULE F · OCR J277 1.3.1 · CAMBRIDGE 0478 5.1, 5.2

The internet

The internet and the WWW, **URLs and the DNS**, **web servers and hosting**, **web browsers**, **cookies** and **digital currency and blockchain**. **OCR J277: you only need cards 01 and 02**, without the IGCSE-only rows. HTTP and HTTPS are in Module E (E9); the Cloud is in Module B (B6). Spec versions as checked in November 2026.

01 The internet and the WWW (F1) · both boards

Internet A worldwide collection of computer networks: a network of networks, joined by routers and links (cable, fibre, wireless, satellite).

Services Servers on the internet provide web pages, email, file storage, video calls.

Internet IGCSE only The infrastructure: devices, routers, cables and links that carry the data.

WWW IGCSE only The collection of websites and web pages accessed using the internet. One use of the internet.

GCSE only J277 does not name the WWW: no internet vs WWW comparison.

02 URLs, DNS and web servers (F2) · both boards

URL Text-based address of a web page, e.g. https://www.harbourbakery.example/menu.html.

Parts IGCSE only Protocol (https) · domain name (www.harbourbakery.example) · web page / file name (menu.html).

DNS Domain name server: converts the domain name in a URL into the web server's IP address.

GCSE only DNS = Domain Name Service made up of multiple Domain Name Servers.

Not found Request passed to another DNS; none finds it: error.

Web server Stores web pages; sends them to clients that request them.

Client A device (via its browser) that requests and uses a service from a server.

Hosting GCSE only Storing a website's files on a web server connected to the internet, so others can access it.

03 Web browsers (F3) IGCSE only

Purpose Main purpose: render HTML and display web pages.

Render Interpret the HTML from the web server and show it as a formatted page.

Saved Bookmarks and favourites (chosen by the user); user history (recorded automatically).

Using Multiple tabs; stores cookies; navigation tools (back, forward, refresh, home); address bar.

04 Cookies (F4) IGCSE only

Cookie Small text file sent by a website, stored on the user's device by the browser.

Session Temporary: deleted when the browser is closed. Often a shopping cart.

Persistent Kept until its expiry date or deleted: between visits. E.g. 30 days from 13 Nov 2026 = 13 Dec 2026.

Uses Saving personal details; tracking user preferences; holding items in a shopping cart; storing login details.

Privacy Can track browsing; users can view, block or delete cookies.

02 From URL to web page (F2) · both boards

1 The user enters the URL in the browser's address bar.

2 The browser sends the domain name to a DNS.

3 The DNS looks it up and returns the web server's IP address, e.g. 203.0.113.25.

4 The browser requests the page from the web server at that IP address (HTTP / HTTPS).

5 The web server sends the page back. IGCSE only as HTML files.

6 The browser displays the page. IGCSE only it renders the HTML.

05 Digital currency and blockchain (F5) IGCSE only

Digital currency Exists only electronically: no notes or coins. Pays for goods and services; transferred between accounts or digital wallets.

Cryptocurrency An example; usually decentralised (no central bank or government).

Blockchain A digital ledger: a time-stamped series of records that cannot be altered.

Blocks Each new transaction goes in a block, linked to the previous block (e.g. its hash value).

Copies Held on many computers, so every transaction can be checked and tracked.

Tampering Change block 2 of 5: links to blocks 3, 4 and 5 break; copies no longer match; rejected.

01
The DNS finds the IP address. The web server stores and sends the page.

02
HTML is the page's language, rendered by the browser. HTTP/HTTPS is the protocol that requests and sends it.

03
Session cookie: gone when the browser closes. Persistent: stays until it expires.

04
A blockchain record is never edited: a correction is a new transaction in a new block.