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1

Introducing Chromebooks

Chromebooks are becoming ever more popular as low-cost laptops, with some even able to double up as tablets. This chapter gives an overview of what a Chromebook is, its unique Chrome OS operating system, and how to choose which model to buy.

8 What is a Chromebook?

10 Choosing a Chromebook

12 About Chrome OS

What is a Chromebook?

A Chromebook is a laptop computer that runs the Chrome OS operating system – rather than Windows, macOS, or Linux. Chrome OS is made by Google and is based around its popular Chrome web browser.

The Chromebook format was first introduced by Google in 2011. While a few people were highly skeptical at the time, it has proven extremely successful. In 2020, over 30 million Chromebooks were sold worldwide – that's more than the total sales of all Apple Mac computers in the same year. Due to the relatively low price of entry-level models, they are particularly popular in educational settings: by 2018, around 60% of all computers purchased by US schools were Chromebooks.

While Google itself now produces its own Pixelbook range (and, previously, the Chromebook Pixel), most Chromebooks are made by other manufacturers, including well-known companies such as Samsung, HP, Lenovo, Acer, and ASUS.



ASUS Chromebook Flip CX5
Image © ASUS

What are the advantages?

If you use your computer mainly for email, general web surfing, and social media platforms such as Facebook, then a Chromebook is an excellent choice. The primary advantages are:

- **Price.** For comparable processing power and performance, Chromebooks are notably cheaper than their Windows counterparts, while Apple MacBooks are considerably more expensive.
- **Security.** Chromebooks are defended from malware by multiple layers of protection. Each web page and application



It can take a little time to get used to Chrome OS after using Windows or macOS.

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runs in a “sandboxed” environment to contain any threat and prevent it from accessing the rest of the computer. Data in the cloud (see below) and stored locally is also very well encrypted. In addition, by default, Chrome OS will receive regular updates automatically to counter any new threats that appear.

- **Speed.** A Chromebook can start up and be ready to use in seconds. This is due to the lightweight nature of the Chrome OS operating system and the fast SSD (solid-state drive) storage that, unlike a hard drive, doesn't have any moving parts.
- **Battery.** Typically, a Chromebook can be used for a full eight-hour working day (or even longer) without needing a recharge from the mains adaptor.
- **Sync.** The data from all your Google apps is synced in the cloud, so you can access it in a browser (when signed in to your account) on another device, or in the same apps on an Android smartphone.
- **Android apps.** Modern Chromebooks can also run the vast range of Android smartphone apps and games. While they are usable with the touchpad and keyboard, they work best with a touchscreen. Some Chromebooks can even be transformed into a touchscreen tablet device by flipping the screen around.

Cloud computing

Although it is possible to use many applications and access files offline, Chromebooks are designed to be used mainly online. This is known as “cloud computing”. After logging in with your Google account, you will have full access to your own personal cloud.

As well as containing your files in Google Drive (which can easily be shared with colleagues and others to collaborate on) and photos in Google Photos, your personal cloud is based around a range of core office and productivity applications. Accessed in the Chrome web browser, these include Gmail for sending and receiving email, Calendar for your appointments and reminders, Keep for your notes, and a trio of office applications: Google Docs (for word processing), Sheets (spreadsheets), and Slides (presentations). Read more about these in Chapter 8.



You'll need a wireless connection to the internet via Wi-Fi to use your Chromebook online.



Your Chromebook saves your most recently opened office documents so that you can work on them offline.



If you just want to browse the web and use Google office apps (Google Workspace apps), an entry-level Chromebook may well suffice.



Modern Chromebooks can run Android apps downloaded from the Google Play Store, so a touchscreen is preferable.

Choosing a Chromebook

Just like Windows laptops, Chromebooks come in a variety of sizes and form factors, from numerous manufacturers.

While standard entry-level Chromebook models are comparatively inexpensive compared to similar Windows computers, there are also “Plus” and “Premium” range models that add extra features and processing power and can cost over \$1,000/£1,000.

With that in mind, we’ll guide you through the major factors involved in choosing a Chromebook model to buy.

Form factor

Chromebooks are available in three main form factors:

- **Standard laptop.** This is the classic “clamshell” laptop design with a hinged screen that folds shut onto the keyboard when not in use. Many Chromebooks employ this style – some with a standard screen, others with a touchscreen. If you want a traditional laptop and aren’t that bothered about using it as a touchscreen tablet device, this may well suit you.



Google Pixelbook Go
Image © Google

- **Convertible.** Also known as “2-in-1”, this Chromebook form factor is becoming more popular, offering you dual laptop/tablet functionality. The hinged screen can be rotated all the way back and around to the rear of the keyboard section to transform the device into a touchscreen tablet. This is particularly useful if you want to run Android smartphone/tablet apps and games on it.



Acer Spin 513
Image © Acer

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- **Detachable.** So far, only a handful of Chromebooks come in this format. A 2-in-1 device, its touchscreen can be detached from the keyboard section to use it on its own as a tablet.

Again, this is ideal for running Android smartphone/tablet apps and games, for which you can use an on-screen keyboard for any text input.



Other considerations

Once you've decided which type of Chromebook design you favor, there are some other key aspects to consider:

- **Screen size.** As when choosing any laptop, this is one of the most important factors. While a large screen is often desirable, there's an obvious trade-off with portability. So, if you want something you can slip into a small bag to carry around, you may prefer a smaller display.
- **Screen resolution.** The standard native screen resolution for Chromebooks is 1920 x 1080 pixels. However, some cheaper models may feature a lower resolution; this may be fine on a smaller screen. Some high-end Chromebooks feature a higher resolution, such as the Acer Spin 713 (2256 x 1504 pixels).
- **Processor speed.** The more powerful the processor, the faster the computer will run, in particular when multitasking with several apps. Since Chrome OS is such a lightweight operating system, however, even a lower-end processor may well suffice.
- **RAM.** This is the amount of memory the Chromebook has. Typically, this will be 4GB, but some higher-end models have 8GB or 16GB of RAM. This may be an advantage for heavy multitasking.
- **Storage.** Space for storing your files offline, and Android apps, this is typically 32GB or 64GB on a Chromebook, but can go up to 128GB or 256GB. An SSD is preferable to eMMC (embedded MultiMediaCard) flash.



Always check the Auto Update Expiry (AUE) date for the Chromebook model you are considering. After this, it will no longer receive system software updates from Google.



Because Chrome OS is so lightweight, even a lower-end processor will run things a lot faster on a Chromebook than it would on a Windows PC.

About Chrome OS

Chrome OS is the operating system that runs on Chromebooks. An operating system controls the general operation of a computer and manages all the hardware and other software on it. Other popular operating systems include Windows, macOS, and Linux.

Key differences

Chrome OS is a little different from most other operating systems, as it is based around the concept of cloud computing. The latter involves storing and accessing files, data, and programs on remote servers over the internet, instead of them all being stored on your computer's local storage system.

Even so, a Chromebook does include some internal storage in the form of an SSD or eMMC flash, so you can continue to work on files when you have no internet. The amount of storage on a Chromebook will typically be smaller than on a standard laptop as you don't require so much offline storage.

Instead of installing applications locally on the Chromebook, most are typically run as web apps inside the Chrome browser. You can't install Microsoft Office on your Chromebook, for instance, although you can still use the online version of it and also open and edit Microsoft Office documents in the Google Workspace office apps.

The exception to this general rule of web apps is that modern Chromebooks can also run Android apps obtained from the Google Play Store, which are downloaded and installed locally on the computer, just as they would be on an Android smartphone or tablet device. We will explain how this works in Chapter 10.

Core applications

Chrome OS comes with a range of Google's own core applications. These can be found (if installed) in the app Launcher at the bottom of the desktop – drag it up with the touchpad or press the **Everything Button**:  or .

- **Chrome.** Google's popular web browser is the most important application on your Chromebook, as it's used to run all the other standard web apps (i.e. non-Android apps). Read more details about how to use Chrome effectively in Chapter 5.



If you want to continue working on Google office documents when offline, **Offline** mode must be turned **On** in each app's settings.

- **Gmail.** Google's email application enables you to write and send messages from your Google account. You can also easily organize emails into folders and filter spam and junk mail. See Chapter 6 for more details. 
- **Google Drive.** This is where all of your files are stored online. It can be accessed from other devices on which you are signed in to your Google account. You can also share selected files and folders with other people, making it easy to collaborate. See Chapter 7 for more details. 
- **Files.** Open this app to find all the files stored locally in your Chromebook's SSD storage. It contains default folders for Downloads, Camera (for photos taken by the Chromebook's camera), and Play Files (for Android app files), but you can create your own folders to organize files. 
- **Docs.** Google's word processing application has plenty of advanced formatting features. As with the other office apps, documents are stored in Google Drive, with a copy of currently open documents also stored on the Chromebook so that you can continue working when offline. It can also be used to open and edit files in other formats, such as Microsoft Word. See Chapter 8 for more details. 
- **Sheets.** Google's application for working on spreadsheets offers all the usual features such as formulas, charts, pivot tables, and conditional formatting. It can also be used to edit files in other formats, such as Microsoft Excel. 
- **Slides.** Google's application for producing presentations, Slides offers a wide range of themes and fonts to choose from. Advanced features enable you to embed videos and add animations. It can also be used to edit files in other formats, such as Microsoft PowerPoint. 



Google office app documents can be shared with others, enabling you all to collaborate and make comments and edits.



If you prefer Spotify for streaming music, you can install the Spotify web app.

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- **Google Duo.** This video- and audio-calling app is free to use. Like WhatsApp, it relies on your mobile phone number for identification purposes and to access your contacts.
- **Google Maps.** If you need to find shops and services in a particular location, the Maps app is a great help. It's also great for planning a journey and giving you directions.
- **YouTube.** The world's most popular video website comes as a web app in Chrome OS. When signed in, you can create playlists of favorite videos to watch later.
- **YouTube Music.** Formerly known as Google Play Music, this music-streaming service offers a vast catalog of tracks. If you don't want adverts, you can pay for a monthly subscription.
- **Chrome Web Store.** This is the place to visit to browse and search for more web apps, games, themes, and extensions to add extra features and functionality to your Chromebook.
- **Play Store.** Modern Chromebooks can run Android apps, and this is where to find and install them. Browse thousands of apps and games; many are free to install, but may offer in-app purchases.
- **Settings.** This app enables you to access all the settings for your Chromebook. You can manage accounts, connected devices, security and privacy, and personalize the look of your desktop.



Navigating the desktop

The desktop itself is similar to Windows or macOS. App or browser windows can be resized by dragging the edges or corners; the icons at their top right are used to minimize the window, maximize it (fill the screen), or close it. We'll take a more detailed look at the Chrome OS desktop interface in Chapter 3.