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1 Introducing MacBooks

Apple's MacBook range of laptop computers is stylish and user-friendly. This chapter introduces the MacBook range so that you can choose the best one for your mobile computing needs.

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About MacBooks

When Apple Computer, Inc. (renamed Apple Inc. in 1997) introduced its iMac range of desktop computers in 1998 it was a major breakthrough. To try to match the success of the iMac, Apple began working on a new range of notebook computers. It first entered this market seriously with the Macintosh Portable in 1989. In 1991, Apple introduced the PowerBook range of laptops, which was the forerunner to the MacBook range.

In 1999, a new range of Apple laptops was introduced. This was the iBook range, aimed firmly at the consumer market. In May 2006, the MacBook range first appeared. The two main reasons for this consolidation were:

- Simplifying Apple's laptop range under one banner.
- It was during this period that Apple Inc. was moving from PowerPC processors for its computers, to Intel processors.

The MacBook range now consists of:

- **MacBook Pro 13-inch**. The latest MacBook Pro modes come with two different display screen sizes (measured diagonally). One is a 13-inch Retina display screen model and is designed to be as thin and as light as possible. It also has an innovative trackpad with Force Touch technology that provides extra functionality.
- **MacBook Pro 16-inch**. This is the most powerful version of the MacBook, and like the 13-inch models contains the Touch Bar, for a range of added functionality from the keyboard.

- **MacBook Air**. This range was designed to be the thinnest and lightest on the market, and it is still an ultraportable laptop and ideal for mobile computing.

The New icon indicates a new or enhanced feature introduced with the latest version of macOS Big Sur on the MacBook.

The MacBook Pro 13-inch and the MacBook Air are the first models to use Apple's own M1 processor chip, as opposed to Intel ones.

MacBook Models

Specifications for all computers change rapidly, and for the current MacBook range they are (at the time of printing):

MacBook Pro 13-inch

The specifications for this model are:

- Processor: Apple M1 chip, or 2.0GHZ quad-core Intel Core i5 with 6MB shared L3 cache.
- Storage: 256 gigabytes (GB) or 512GB, both configurable up to 2 terabytes (TB).
- Memory: 8GB, configurable to 16GB.
- Ports: Two Thunderbolt/USB 4 ports, with support for USB 3.1.
- Battery: Up to 17 hours of wireless web use.

MacBook Pro 16-inch

The specifications for this model are:

- Processor: 2.6GHZ 6-core Intel Core i7, or 2.3GHz 8-core Intel Core i9, with 12MB/16MB shared L3 cache.
- Storage: 512GB or 1TB.
- Memory: 16GB, configurable to 32GB or 64GB.
- Ports: Four Thunderbolt 3/USB-C ports, with support for USB 3.1.
- Battery: Up to 11 hours of wireless web use.

MacBook Air

The specifications for this model are:

- Processor: Apple M1 chip.
- Storage: 256GB or 512GB.
- Memory: 8GB, configurable to 16GB.
- Ports: Two Thunderbolt/USB 4 ports, with support for USB 3.1.
- Battery: Up to 15 hours of wireless web use.

All MacBooks have a range of energy-saving and environmental features.

The storage and memory on the MacBook range can both be configured to higher levels.

The MacBook Air and the MacBook Pro both have flash storage. This is similar in some ways to traditional ROM (read-only memory) storage, but it generally works faster and results in improved performance.

MacBook Jargon Explained

Since MacBooks are essentially portable computers, a lot of the jargon is the same as for other computers. However, it is worth looking at some of this jargon and the significance it has in terms of MacBooks.

- **Processor**. Also known as the central processing unit, or CPU, this refers to the processing of digital data as it is provided by apps on the computer. The more powerful the processor, the quicker the data is interpreted. Apple is in the process of moving its processors from Intel to its own M1 range, which is included in the MacBook Pro 13-inch and the MacBook Air.
- **Memory**. This closely relates to the processor and is also known as random-access memory, or RAM. Essentially, this type of memory manages the apps that are being run and the commands that are being executed. The greater the amount of memory there is, the quicker the apps will run. With more RAM they will also be more stable and less likely to crash. In the current range of MacBooks, memory is measured in gigabytes (GB) and ranges from 8GB to 64GB.
- **Storage**. This refers to the amount of digital information the MacBook can store. It is frequently referred to in terms of hard disk space and is measured in gigabytes (GB) or terabytes (TB). MacBooks use Solid-State Drive (SSD) flash storage.
- **Trackpad**. This is an input device that takes the place of a mouse (although a mouse can still be used with a MacBook, either with a cable or wirelessly). Traditionally, trackpads have come with a button that duplicates the function of the buttons on a mouse. However, the trackpad on a MacBook has no button, as the pad itself performs these functions.

Memory can be thought of as a temporary storage device, as it only keeps information about the currently-open apps. Storage is more permanent, as it keeps the information even when the MacBook has been turned off.

All of the most recent MacBooks have the Force Touch trackpad, which provides additional functionality for pressing on the trackpad.

- **Graphics card**. This is a device that enables images, videos and animations to be displayed on the MacBook. It is also sometimes known as a video card. The faster the graphics card, the better the quality relevant media will be displayed at. In general, very fast graphics cards are really only needed for intensive multimedia applications, such as video games or videos.

- **Wireless**. This refers to a MacBook's ability to connect wirelessly to a network; i.e. another computer or an internet connection. In order to be able to do this, the MacBook must have a wireless card, which enables it to connect to a network or high-speed internet connection. This is known as the AirPort Extreme Wi-Fi wireless networking card.

- **Bluetooth**. This is a radio technology for connecting devices wirelessly over short distances. It can be used for items such as a wireless mouse or for connecting to a device, such as an iPhone for downloading photos.

- **Ports**. These are the parts of a MacBook that external devices can be plugged into, using a cable that connects into one of the ports, which are located on the side of the MacBook. The latest range of MacBooks use a headphone port for attaching a pair of headphones for listening to music, podcasts or video content such as movies or TV shows.

For attaching other external devices, MacBooks use Thunderbolt ports. These transfer data at high speeds. and can also be used to connect a range of USB devices (see page 12).

Another option for connecting to a network is using an Ethernet cable, rather than doing it wirelessly. The latest range of MacBooks do not have a dedicated Ethernet port, but a Thunderbolt to Ethernet adapter can be used.

Thunderbolt ports can also be used to attach a Thunderbolt Display monitor.

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USB stands for Universal Serial Bus. The type of adapter required for attaching USB 3.1 and earlier devices to a Thunderbolt port is a USB-C to USB adapter.

- **USB**. This is a method for connecting a variety of external devices, such as digital cameras, scanners, and printers. The latest range of MacBooks do not have separate USB ports, but the Thunderbolt ports can accommodate USB 4 devices. They also support older versions of USB devices (USB 3.1 and earlier), but an adapter is required to connect earlier versions of USB devices to the Thunderbolt port.

- **Touch Bar**. This is available on the 13-inch and 16-inch models of the MacBook Pro. It is a multi-touch strip located at the top of the keyboard that offers a range of options, depending on the current app being used; e.g. the system controls, such as for adjusting volume and screen brightness, or adding emojis to an iMessage.

For more details about the Touch Bar, see pages 26-27.

- **CD/DVD players or re-writers**. The latest range of MacBooks do not have a built-in CD/DVD player or re-writer. However, an external USB SuperDrive can be purchased for playing DVDs and CDs or burning content to a CD or DVD. For copying content, flashdrives are also a popular option as they can contain large amounts of data and connect via a USB port.

When a SuperDrive is attached to a MacBook, it shows up as an external drive in the Finder; see page 32.

- **Webcam (FaceTime)**. This is a type of camera fitted into the MacBook and it can be used to take still photographs or communicate via video with other people. On the MacBook it is known as the FaceTime camera, and it works with the FaceTime app. The FaceTime camera is built in at the top middle of the inner casing.

Getting Comfortable

Since you will probably be using your MacBook in more than one location, the issue of finding a comfortable working position can be vital, particularly as you cannot put the keyboard and monitor in different positions, as you can with a desktop computer. Whenever you are using your MacBook, try to make sure that you are sitting in a comfortable position with your back well supported, and that the MacBook is in a position where you can reach the keyboard easily, and also see the screen, without straining your arms.

If possible, the best place to work on a MacBook is at a dedicated desk or workstation.

Despite the possible temptation to do so, avoid using your MacBook in bed, on your lap, or where you have to slouch or strain to reach the MacBook properly.

Seating position

The ideal way to sit at a MacBook is with an office-type chair that offers good support for your back. Even with these types of chairs, it is important to maintain a good body position so that your back is straight and your head is pointing forwards.

One of the advantages of office-type chairs is that the height can usually be adjusted, and this can be a great help in achieving a comfortable position.

If you do not have an office-type chair, use a chair with a straight back and place a cushion behind you for extra support and comfort, as required.

MacBook position

When working at your MacBook it is important to have it positioned so that both the keyboard and the screen are in a comfortable position. If the keyboard is too low, you will have to slouch or strain to reach it.

If the keyboard is too high, your arms will be stretching. This could lead to pain in your tendons.

The ideal setup is to have the MacBook in a position where you can sit with your forearms and wrists as level as possible while you are typing on the keyboard.

Adjusting the screen

Another factor in working comfortably at a MacBook is the position of the screen. Unlike a desktop computer, it is not feasible to have a MacBook screen at eye level, as this would result in the keyboard being in too high a position. Instead, once you have achieved a comfortable seating position, open the screen so that it is approximately 90 degrees from your eyeline.

One potential issue with MacBook screens can be that they reflect glare from sunlight or indoor lighting.

If this happens, either change your position or block out the light source, using some form of blind or shade. Avoid squinting at a screen that is reflecting glare, as this will make you feel uncomfortable and quickly give you a headache.

Working comfortably at a MacBook involves a combination of a good chair, good posture and good MacBook positioning.

Input Devices

MacBooks have the same data input devices as most laptops: a keyboard and a trackpad. However, the trackpad has an innovative feature that makes it stand out from the crowd: there is no button – the trackpad itself performs the functions of a button. The trackpad uses Multi-Touch Gestures to replace traditional navigation techniques. These are looked at in detail in Chapter 6. Some of these gestures are:

- **One-finger click**. Click in the middle of the trackpad to perform one-click operations.
- **Scrolling**. This can be done on a page by dragging two fingers on the trackpad either up or down.
- **Zooming on a page or web page**. This can be done by double-tapping with two fingers.

When using the keyboard or trackpad, keep your hands and fingers as flat as possible over the keyboard and trackpad.

Trackpad options

Options for the functioning of the trackpad can be set within **System Preferences** (see pages 28-30). To do this:

1. Access **System Preferences** and click on the **Trackpad** button

2. Click on the tabs to set options for pointing and clicking, scrolling and zooming, and additional Multi-Touch Gestures with the trackpad

The trackpad on a MacBook is quite sensitive, so only a relatively small amount of pressure is required for Multi-Touch Gestures.

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Mouse options

An external mouse can be connected to a MacBook, and options for its functioning can be set within **System Preferences**. To do this:

1. Click on the **Mouse** button

2. Drag the sliders to set the speed at which the cursor moves across the screen, and also the speed required for a double-click operation

Instead of a traditional mouse, a Magic Mouse can also be connected to a MacBook. This is a wireless mouse that connects via Bluetooth and has the same scrolling functionality as the trackpad.

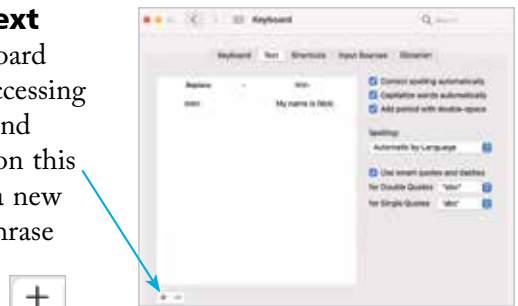
Keyboard options

Options for the functioning of the keyboard can be set within **System Preferences**. To do this:

1. Click on the **Keyboard** button

2. Click on the **Keyboard** tab to set options for how the keyboard operates, such as the speed for repeating a key stroke

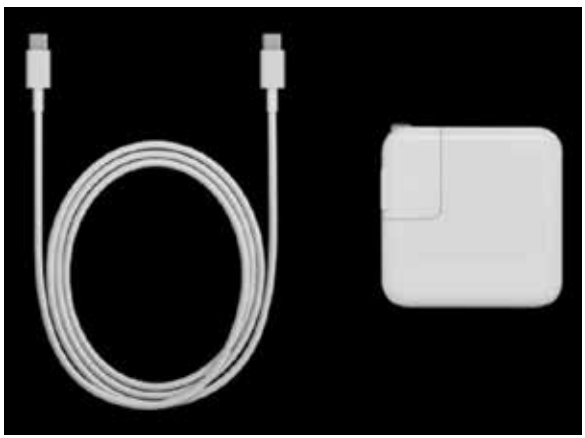
3. Click on the **Text** tab to set keyboard shortcuts for accessing certain words and phrases. Click on this button to add a new shortcut and phrase



MacBook Power Cable

All MacBooks need a power cable – connected to an AC/DC adapter – that can be used to recharge the battery, and it can also be used when the MacBook is not being used in a mobile environment. This can save the battery so, if possible, the adapter should be used instead of battery power.

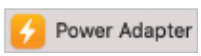
The latest range of MacBooks use USB-C power adapters, which connect to the Thunderbolt port with a USB-C cable. One end of the cable attaches to the power adapter and the other end attaches to the Thunderbolt port on the MacBook. The power adapter and the USB-C cable come supplied with the MacBook.



For more information about accessing and using System Preferences, see pages 28-30.

Power management

Within the Battery system preferences there are options for when the MacBook is connected to the power adapter (as well as when it is using battery power). Click on the **Power Adapter** tab in the left-hand sidebar and make the appropriate selections.



For more information about accessing and using the Battery system preferences, see pages 167-169.

Cleaning a MacBook

Like most things, MacBooks benefit greatly from a little care and attention. The two most important areas to keep clean are the screen and the keyboard.

Cleaning the screen

All computer screens quickly collect dust and fingerprints, and MacBooks are no different. If this is left too long, it can make the screen harder to read and cause eye strain and headaches. Clean the screen regularly with the following cleaning materials:

- A lint-free cloth, similar to the type used to clean camera lenses (it is important not to scratch the screen in any way).
- An alcohol-free cleaning fluid recommended for computer screens.
- Screen wipes that are recommended for use on computer screens.

The outer casing of a MacBook can be cleaned with the same fluid as used for the screen. A duster or a damp (but not wet) cloth and warm water can be equally effective. Keep soap away from MacBooks if possible.

Cleaning the keyboard

Keyboards are notorious for accumulating dust, fluff and crumbs. One way to solve this problem is to turn the MacBook upside down and very gently shake it to loosen any foreign objects. Failing this, a can of compressed air can be used, with a narrow nozzle to blow out any stubborn items that remain lodged between the keys.

Spares and Accessories

Whenever you are going anywhere with your MacBook, there are always spares and accessories to consider. Some of these are just nice things to have, while others could be essential in ensuring that you can still use your MacBook if anything goes wrong while you are on your travels. Items to consider putting in your MacBook case, or using at home, include:

Hardware

- **Replacement battery**. Although it is technically possible to change the battery of a MacBook, it is not recommended, as it could damage the device and would invalidate any warranty. MacBook batteries are designed to retain up to 80% of their original capacity for 1,000 complete charge cycles. However, if a MacBook battery does die, it can be replaced by using Apple's battery replacement service: details can be found on the Apple website at **https://support.apple.com/mac/repair/service**, or at your nearest Apple Store.

If a MacBook is still within its one-year warranty, a defective battery will be replaced for free, as long as it has not been damaged due to misuse.

- **Apple Thunderbolt Display**. The Thunderbolt port enables you to transfer data from peripheral devices to your MacBook at very high speeds. You can also connect a Thunderbolt Display – a 27-inch display that can give stunning clarity to the content on your monitor.

- **Magic Mouse**. This is an external mouse that can be connected to your MacBook and used to perform Multi-Touch Gestures in the same way as with the trackpad.

- **External SuperDrive**. The MacBook range does not come with a SuperDrive for using CDs and DVDs but this external one can be used to connect to a MacBook using a Thunderbolt cable, or a USB one with a Thunderbolt adapter.

- **Wireless keyboard**. This can be used if you want to have a keyboard that you can move away from your MacBook.

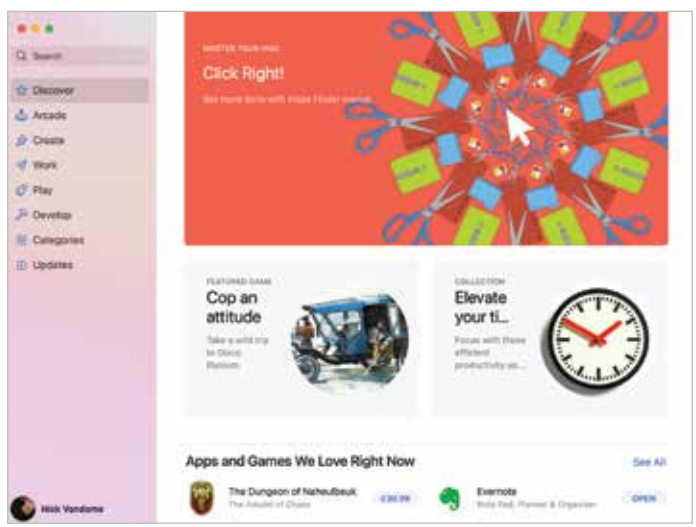
- **Thunderbolt Ethernet adapter**. This can be used to connect to an Ethernet network using an Ethernet cable.

- **Multi-card reader**. This is a device that can be used to copy data from the cards used in digital cameras. If you have a digital camera, it is possible to download the photographs from it directly onto a MacBook with a cable. However, a multi-card reader can be more efficient and flexible.

Apple's AirPods are a good option for listening to items on your MacBook, as they are wireless and can be connected with Bluetooth.

- **Headphones/EarPods**. These can be used to listen to music or movies if you are in the company of other people and you do not want to disturb them. They can also be very useful if there are distracting noises from other people.
- **Flashdrive**. This is a small device that can be used to copy data to and from your MacBook. It connects via a Thunderbolt/USB port and is about the size of a packet of chewing gum. It is an excellent way of backing up files from your MacBook when you are away from home or the office.
- **Cleaning material**. The materials described on page 18 can be taken to ensure your MacBook is always in tip-top condition for use.
- **CDs/DVDs**. Video or music CDs and DVDs can be taken to provide mobile entertainment, and blank ones can be taken to copy data onto, similar to using a pen drive. An external CD/DVD drive will also be required.

Software

New software programs, or apps, can be downloaded directly from the Apple App Store. There is a huge range on offer, covering over 20 different categories. They can be accessed from the left-hand sidebar and you can also view and update apps that you have purchased (see pages 133-138).

The App Store can be accessed by clicking on this button on the Dock at the bottom of the MacBook screen: