

108 PAGES OF APPLE HELP & ADVICE

> Issue 378 > June 2022  
> macformat.com > @macformat

# Mac FORMAT



**IN-DEPTH REVIEW**

## Mac Studio

> PLUS Studio Display on test



Which iPad is right for you?



AirPods Max vs its rivals



Shortcuts made easy

# 54

# AMAZING APPLE HACKS

**Win!**

> 512 Audio recording gear, prizes worth **£1,210**

Great things to do on your Mac, iPhone and iPad

**Customise your iPhone**

> Home Screen tricks

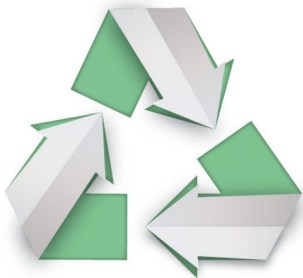
**Surf smarter with Safari**

> Web taming tips

**Batch convert files in Preview**

> Quick pic processing





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Your Mac, iPhone and iPad are such incredibly powerful and versatile devices, the chances are you're only just scratching the surface of all the wonderful things they can do. To help inspire you, this month's lead feature - '54 amazing Apple hacks' - on p20 is all about the amazingly creative and productive projects you can carry out on your devices. Of course, it's really just the start. We'd love to hear what

kind of things you use your devices for, so drop us a line at [letters@macformat.com](mailto:letters@macformat.com) and tell us yours.

Talking of powerful devices, this month we're taking an in-depth look at two of Apple's latest: the new Mac Studio and Studio Display. While Apple is deliberately aiming both at the kind of creative pros who churn through massive graphics and video files all day, is there enough about these devices to appeal to the rest of us? Find out starting on p78.

If your needs are more portable, the Ultimate iPad Buyer's Guide (p62) should help you decide which Apple tablet best meets your needs and budget. And on p84, we pit Apple's E549 AirPods Max against its rivals to see which one emerges as the over-ear, noise cancelling headphones king.

As ever, there's lots of other great content inside the issue to excite and enthral you - from all the latest Apple news and reviews, to some really handy how-tos. Enjoy the issue,

ROB MEAD-GREEN  
**EDITOR**  
[editor@macformat.com](mailto:editor@macformat.com)

*Rob*

## Meet the team



Jo Membery  
**Operations Editor**

> Jo's developed a serious case of Craig crush - but not on James Bond star Daniel Craig; it's Apple senior VP Craig Federighi she has the hots for.



Paul Blachford  
**Art Editor**

> Paul's already packed his bags for the Apple's World Wide Developer Conference in June. Just wait until he finds out its mainly an online event.



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# Mac FORMAT

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> [macformat.com](http://macformat.com)

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# APPLE CORE



EDITED BY **ROB MEAD-GREEN**



The MacBook Air could soon come in a larger size, marking the first time since 2015 that this has happened.

HOT TOPIC!

## Mystery 15-inch Apple laptop

A new MacBook could be in the works

**T**here are many rumours surrounding this year's MacBook Air release. Some say it will get an all-new design, that it will come in a range of new colours, and that it might even come with an old chip (see opposite page). However, there are also whispers of another, larger device that is shrouded in mystery. Ostensibly, it appears to be a MacBook Air in a new size, but even that is far from nailed down.

While there have been calls for Apple to offer a MacBook Air with an increased display size for a number of years, the idea picked up steam recently thanks to a report from Display Supply Chain Consultants (DSCC), a group of experts in the display industry spearheaded by prominent analyst Ross Young.

The report outlined that Apple is planning a 15-inch MacBook Air due for release in 2023. That would be quite a change to the current MacBook Air situation, as the only screen size option at the moment is a 13-inch model. Indeed, the last time Apple offered the MacBook Air in two sizes was in 2015, when an 11-inch version was also available.

### A MacBook Air makes sense

However, the waters have been muddied somewhat by a tweet from renowned Apple tipster Ming-Chi Kuo, who said that the 15-inch device "might not be called MacBook Air". If correct, that leaves two possibilities open: that the laptop will get a new name, or that Apple is planning a new device entirely (perhaps akin

## New devices with old hardware?

**A**pple might keep older chips around for longer in future devices, if a number of leaks and rumours are to be believed. That could

break with the company's usual strategy of upgrading its devices' chips with each product update, and could potentially mean less exciting performance from your new devices.

One of the products potentially affected is the MacBook Air. While many experts expect the next version to be outfitted with the upcoming M2 chip,



Looks like Apple is going to let its chips go gold...

well-known Apple analyst Ming-Chi Kuo believes it could instead come with an M1 chip (or a modified version of the M1, perhaps with more cores).

Similarly, the iPhone 14 and rumoured iPhone 14 Max could have the same A15 Bionic chip as the one used in the iPhone 13, according to Kuo. The iPhone 14 Pro and Pro Max, meanwhile, would get the new A16 Bionic.

It's not clear if this is a decision from Apple to slow down updates or simply a response to the ongoing global chip shortage.

to the old 12-inch MacBook in a new size). From other info in Kuo's tweet, the former seems more likely, as Kuo included this tidbit: "Although a larger display generally consumes more power, the design goal is to use the same 30W power adapter as MacBook Air."

The current MacBook Air also uses a 30W power adaptor. That seemingly excludes the 15-inch device being some sort of MacBook Pro, as that product requires between 61W and 140W of power, depending on the model. A 15-inch device would also maintain a two-inch display difference over the 13-inch MacBook Air, which lines up with the two-inch distinction between the 14-inch and 16-inch MacBook Pro.

### Filling a gap in the line-up

If the MacBook Air came in two size configurations, it might be a tempting option if you like the expansiveness of the 16-inch MBP but don't need its workload-shredding power (or its eye-watering price tag). It would also give more choice to anyone enamoured with the MacBook Air's more consumer-friendly looks. With the renewed approach to that laptop thanks to bright colour options, which are expected

### Rumours of a new laptop size indicate a possible 15-inch MacBook Air



A 15in MacBook Air will appeal to those who want to combine more character with a bigger screen.

to debut this year, you'll be able to get the laptop that looks the way you want, and avoid having to opt for the MacBook Pro just because you need a larger display.

Kuo believes that the 15-inch laptop will enter mass production in the fourth quarter of 2023 "if all goes to plan". That points towards a likely launch date in late 2023, an idea Kuo strengthens by calling the product "Apple's potential 15-inch notebook in 2023". That also lines up with DSCC's prediction of a 2023 release date.

Whatever the device ends up being called, the idea of a 15-inch Apple laptop seems to be gathering steam. If you've been craving a larger MacBook Air, you might not have long to wait.

Mac  
FORMAT

## THE POLL

WE ASKED...

What are you most hoping to see at WWDC 2022?



> Log on and see next issue's big question!

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[facebook.com/macformat](https://facebook.com/macformat)

## Apple planning foldable iPad

> Recent reports have suggested Apple is working on a device with a folding OLED screen. This display would supposedly measure around 20 inches across when laid flat. That means it could be used as a monitor or a very large iPad. You could then fold it up to about 90° and use it as a small laptop with a virtual keyboard.

The reports have come from reliable sources, such as reporter Mark Gurman and display industry expert Ross Young. All have said the device is several years away from release, with 2025 being seen as the earliest date (but 2026 or 2027 more likely). If true, it could be an intriguing new direction for Apple.



Rather than a separate keyboard, the foldable iPad might use virtual keys.

## APPLE NEWS ROUNDUP

### APPLE ANNOUNCES WWDC 2022

SET FOR 6-10 JUNE

> Apple has announced the dates of its next Worldwide Developers Conference, which will take place from 6-10 June 2022. The show will be almost entirely online, although there will be a small in-person viewing event for developers at Apple Park. Apple is expected to unveil the latest versions of its operating systems, as well as a few hardware updates, which might include a design overhaul for the MacBook Air.

### NO UNDER-SCREEN TOUCH ID

FEATURE MAY NEVER APPEAR

> Rumours have been rife that Apple will put Touch ID under the displays of future iPhones, but Apple analyst Ming-Chi Kuo says that might not be correct. Kuo had previously predicted the tech might come out in 2023 at the earliest, but has changed tack, saying "Face ID with a mask on iPhone is already a great biometrics solution." Will under-screen Touch ID ever emerge? We'll have to wait and see.



## Cracks appear in Apple's walled garden

Certain apps can now send users to payment websites

App developers can now apply for an 'entitlement' to bypass the App Store IAP system.

**W**hen Apple is set on something, there is little that will make it change course. A rare change of tack has come to pass, however, with important implications for the App Store - and Apple's struggles against antitrust investigations.

That change seems simple: apps like Netflix, Kindle and Spotify can now point customers to sign-up pages on their own websites, something that Apple previously forbade. However, it means there's a breach in Apple's walled garden. People will have the option to avoid in-app purchases (IAPs), as these apps will not have to pay Apple's 30% commission.

Before you think Apple has gone soft, it's clear the change is a grudging one. Apps must apply for an 'entitlement' to bypass the IAP system, and then have to use a specific user experience flow that warns customers of the risks of purchasing from third-party sites. Links must open in a web browser (not in the app), no extra data can be passed to websites, and apps can't even explain how much they charge until users leave the app itself.

Still, it shows IAPs are not the be-all and end-all, even if only in a limited way. Whether that will placate antitrust investigators like the EU is another matter.

## Subscribe to get your next iPhone

Apple mulls hardware subscription service for popular devices

**H**ead straight to the Apple Store on iPhone launch day?

Or do you wait for a deal? Or get your iPhone second-hand? If you opt for any of these, you buy the phone outright. That might not be the case for much longer.

Apple is allegedly working on a hardware subscription service where you would pay a monthly fee for your iPhone or other Apple product. It's unlikely this would totally replace the option of buying a device, though.

Apple already has several subscription services, such as iCloud+ and Apple Music, but these are limited to software. According to Bloomberg, Apple is aiming to make

Subscribing to hardware would appeal to some, but not all, Apple fans.

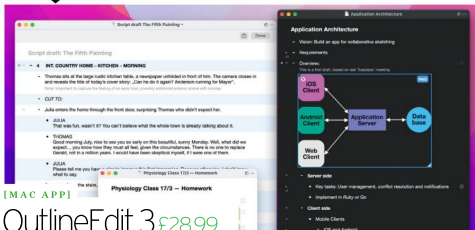


hardware purchases more like subscribing to an app.

Rather than an instalment plan that divides the hardware cost into 12 or 24 months, a subscription would use a separate fee. Then, when Apple launches new products, people could upgrade easily,

perhaps even without an additional charge. The plan could launch in late 2022 or early 2023. While the lack of upfront cost would appeal to many, the plan might receive a mixed welcome from those who prefer to own their devices rather than rent them.

## APP OF THE MONTH


**OutlineEdit 3** £28.99

Work more efficiently with this productivity booster



**Want to get your ideas organised and take action on them?** Rather than trying to keep everything in your head, an outlining app could be what you need.

Version 3 of OutlineEdit adds a host of helpful new features that can aid in getting your ideas down. For instance, you can now add inline images to your outlines, be they photos, charts, diagrams, or something else.

There are new custom templates, new themes, colourful category tags and filters, and more. The app is now much faster and smoother, its developer says, thanks to a new editor core. In fact, this is OutlineEdit's biggest update ever, with over 100 enhancements to almost every aspect of the app.

So, if you want to plan out projects, tackle tasks, or wrangle your writing, OutlineEdit 3 can help you do it quickly and simply.


**[iOS APP]**  
**Endel: Focus, Sleep, Relax**
**FREE** (offers IAPs)


Sometimes key tasks like focusing on work and even falling asleep can be difficult. If that sounds familiar, try Endel. It uses artificial intelligence (AI) and inputs from famous musicians to craft soundscapes perfect for relaxing, studying, moving, and more.

**Why you need it** Bring peace to everyday occurrences.


**[iOS GAME]**  
**Kanso**
**£3.49**


Kanso combines beauty and relaxation into a peaceful, meditative experience. It tasks you with tracing your finger around on-screen objects, avoiding obstacles as you go. It's aided by over an hour of original music that is designed to help you relax and find a moment of focus and reflection.

**Why you need it** It's a great way to unwind.


**[MAC GAME]**  
**Alto's Adventure - Remastered**
**£4.99/month** (Apple Arcade)


Alto's Adventure has long been a popular snowboarding romp, known for gorgeous graphics and Zen gameplay. Now, the Remastered edition has arrived for Apple Arcade. This version adds a new character, new goals and challenges, plus extra set pieces to test your skills.

**Why you need it** A fresh update to a classic game.

**Media Picks**

&gt;What you should be playing and reading this month


**[ALBUM]**
**We**  
 Arcade Fire  
**£8.99**

>Arcade Fire's latest work explores the "loneliness of isolation" and the "joy and power of reconnection."


**[AUDIOBOOK]**
**Absynthe (Unabridged)**  
 Brendan P Bellecour  
**£12.99**

>Set in an alternate-reality 1920s, *Absynthe* sees shell-shocked veteran Liam discover latent telepathic abilities. Can he help save the ones he loves?


**[PODCAST]**  
**Sport's Strangest Crimes**

>How conman Russell King hoodwinked the world's oldest professional football club, including a stint schmoozing officials in North Korea.

# Crave

THE GEAR WE'RE  
LUSTING AFTER

1

## LG DualUp

> ETBC > [lg.com/uk](https://lg.com/uk)

> **Kitted your Mac out with several monitors to up your multitasking game?** Turns out you've actually been doing it all wrong - at least, that's what the LG DualUp would have you believe. This unusual monitor is shaped like two 21.5-inch displays stacked on top of each other, meaning no more craning your neck side to side, scanning across your screens to see all your work.

Although LG says that's better for your neck, the 16:18 ratio means you'll still be looking up and down fairly frequently. Still, it could work really well in certain scenarios, for example by enabling video editors to fit more content on their screens at once. And if it means one less monitor cluttering our already packed desks, count us in.



2

## Samsung The Frame

> ETBC > [samsung.com/uk](https://samsung.com/uk)

> **Samsung's The Frame - known as one of the brand's 'lifestyle' TVs - is part TV, part interactive art gallery.** At CES 2022, it was updated to make that art look even better thanks to a new anti-reflective coating. Samsung claims this is glare-free and

can even mimic canvas, making displayed art look even more lifelike

and true to the real thing. And if you're tempted to touch it? No worries, as it now has an anti-fingerprint coating.

Previously, The Frame included an art store that let you buy artwork and download it to the TV. That's now been augmented with an NFT store, so if you are crypto-inclined, you'll have a new home for your blockchain art as well. Who needs to visit museums when you have one of these TVs at home?



3

## Razer Phone Cooler Chroma

> £59.99 > [razer.com](https://razer.com)

> **Devices that try to keep your iPhone icy cold have been around for a while, but Razer's Phone Cooler Chroma is the first to use the magic of MagSafe to hold itself in place.**

Just pop it on the back of your iPhone and it stays put, no need for bulky frames that get in the way. If you regularly test your iPhone to its limits, heating it

up in the process, that could be a very positive thing.

And, this being Razer, the device is festooned with RGB lighting, letting everyone know you're cooling your iPhone in style (or lack of style, depending on your taste). Whatever you think of it, one thing is for sure - you won't ever catch Apple making an RGB phone cooler.



4

## NASA Mercury Hasselblad 500C No 9

> \$4,800 (about £4,300) > [spacecamera.co](https://spacecamera.co)

> **Starting in 1962, NASA began taking Hasselblad cameras into orbit to document the depths of space, with the cameras being heavily modified to survive the rigours of weightlessness.**

Unnecessary extras like the leather covering and viewfinder were removed to reduce some bulk, and the cameras were also painted in anti-reflective black paint to minimise reflections.

Now, you can get your hands on a working replica of one of those cameras, all for the rock-bottom price of \$4,800 (about £4,300). It's built to be just like the original and comes with an 80mm f2.8 lens too. And as a bonus, you'll even get a 'flown-in-space artefact' with the purchase. The replicas haven't actually been into orbit, but they're as close as you can get to a camera that has.



5

## Samsung The Freestyle

> £999 > [samsung.com/uk](https://samsung.com/uk)

> **The techno-hipsters of the world would have you believe projectors are old hat.** Smart speakers? Passé. Don't even get them started on ambient lighting. But a device that combines all three? Now that's more like it.

Unveiled at CES 2022, Samsung's The Freestyle is exactly such a device. Its Full HD projector is lightweight at 0.8kg, and its compact shape makes

it portable. It also has a viewing angle that's adjustable by 180°. When it's not beaming out movies, you can use it to cast ambient backgrounds that create whatever mood suits the occasion. And there's a smart Alexa speaker built into it that blasts audio in 360°. That means it could be a handy alternative to forking out for three separate devices when all you need is one.







# CONTACTS

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and your questions to  
[letters@macformat.com](mailto:letters@macformat.com)

## LETTER OF THE MONTH!



### CLEAN MACHINE

Just reading the 'Fast Fixes' Feature in the April 2022 [MF375] issue, most helpful - thank you. One tip - no doubt among many others you could have included - which I have found most helpful, is what to do in the event of a malfunction of the charging/connection port, in my case a second-gen iPhone SE belonging to my wife.

It was apparently becoming 'loose' and the charging/connecting intermittent. A simple solution before visiting an Apple Store is to gently 'clean' the charging port first with a toothpick or similar to loosen any debris, and then to give it a good old blast with an aerosol air duster.

Works a treat. You probably already know this, but it's possibly worth including in a future 'tips' feature?

BY SIMON GOODE

#### ROB SAYS...

This is something we have done ourselves (as pocket fluff does have a habit of lodging itself inside the Lightning port), although it's not something that Apple recommends. For official advice on the best ways to clean your iPhone, read the relevant Apple Support article at [apple.co/3vcX5bl](https://apple.co/3vcX5bl). Having said that, though...

## LETTER OF THE MONTH

### Win a Devolo Magic 2 WiFi Starter Kit!

The author of our Letter of the Month receives a prize! Email us for your chance to win a Devolo Magic 2 WiFi Starter Kit, which turns any power socket into a potential access point for high-performance multiroom Wi-Fi. Find out more at [devolo.co.uk](https://devolo.co.uk).



### SO LOW VOLUME

I write on behalf of an elderly person who has a second-hand iPhone 7, as the sound volume on it is failing. Having tried normal user-based fixes, is there any diagnostic or maintenance software I could run to identify the problem or optimise the iPhone's performance.

BY JAMES HARRIS

#### ROB SAYS...

One reason why the volume could be failing is due to clogged speaker vents at the bottom of the iPhone, which can pick up all kinds of dirt and detritus. These can be carefully cleaned using a soft brush or even a cotton earbud dipped in isopropyl alcohol. The alternative might be to use a pair of wired headphones connected either



We doubt that either Apple or Microsoft will ever make Windows support on Apple silicon official.

directly to the Lightning port or by using Apple's Lightning to 3.5mm adaptor. Otherwise a trip to your local Apple Store may in order.

### INTEL IMAC OR M1 MAC?

I have been using MacBooks since 2012 but still have to use Windows for certain apps. I have a MacBook Pro 16in (Intel) and I run the Windows programs using Bootcamp.

Should I consider a 'renewed' iMac 27in which would enable me to continue using Bootcamp or switch to the latest M1 iMac?

BY STEPHEN C HALL

#### ROB SAYS...

While there is a version of Windows that uses similar ARM architecture to Apple silicon, it's unlikely that either Apple or Microsoft will ever make Windows support on Apple silicon official, and Bootcamp remains conspicuous by its absence on Apple's M-series systems. In days past, you could have run Windows using virtual machine (VM) software from the likes of Parallels, but even that doesn't support Intel machines on Apple silicon - or even macOS versions prior to Monterey.

While it's tempting to consider a refurbished 27-inch iMac, we'd urge caution - as Apple has now discontinued it, ongoing support long-term is no longer certain. We'd suggest you use your Intel-based MacBook Pro for Windows duties for now, and buy an Apple silicon Mac - and seek out alternatives to the Windows apps you use, if you can.

# APPLE'S SUPPLY CHAIN IN NUMBERS

We know Apple loves to boast about its green credentials, but how green and employee-friendly are the suppliers that makes its products?



**23.6**  
million

Number of supplier employees who've been trained on their labour rights since 2008.

**50.3 billion**

> Gallons of fresh water saved by suppliers in Apple's Clean Water programme across 10 countries and regions since 2013.

**2,000+**

> Number of energy efficiency projects being carried out by Apple's suppliers - a 39% increase year-on-year.

**175+**

> Number of Apple suppliers committed to transitioning to 100% renewable production, representing 9 gigawatts of clean energy.

**1st**

> Apple is the first company in the industry to produce a battery made from 100% recycled and responsibly sourced minerals.

**52**

> The number of countries where Apple auditors have conducted environmental assessments of its suppliers.

**Over 2 million**

> Metric tons of waste diverted from landfill by Apple's suppliers since it introduced its Zero Waste programme in 2015, including 100% of the waste produced during final assembly of the iPhone, iPad, Mac, Apple Watch, AirPods, HomePod mini and Beats.



**60+**

> Number of organisations supported by Apple, including those involved in human rights work, as well as environmental protection.



# MATT BOLTON...

## DOESN'T WANT THE NEW VERSION OF iOS TO BUILD ON YET MORE FEATURES, BUT TO MAKE MORE OF WHAT WE ALREADY HAVE

**A**s I write this, Apple has just announced that WWDC 2022 will indeed take place this year. I wasn't especially fearful that it wouldn't, any more than I am fearful that December will roll around and there'll turn out to be no Christmas (though, admittedly, that may be a real danger this year at this rate). So I tried to think about what big features I'd like Apple to add this year, and I realised that I don't really think about magic new features for the iPhone any more. 15(!) years into its life, it's no surprise that it's harder and harder for there to be game-changing new things that a phone can do. No, all my gripes are more about the state of things now, and it struck me just how static and, perhaps, stagnant some of the built-in iPhone apps are.

The thought germinated in the Music app. Apple has improved the service with new music quality options recently,

but the app itself didn't develop in the same way. Did you know that on Android, Apple Music can crossfade between tracks in a playlist, giving a smoother transition? This has never come to iOS. Who knows why? Imagine all the

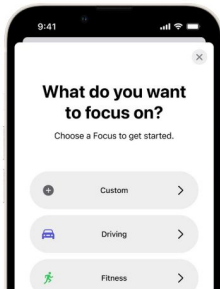
interesting things this app could offer around discovery of new music. What if you could explore a cloud of connected artists, listening to snippets on the way to build a new set of recommendations. What if the Neural Engine could power a system of song mixing, where it pulls tracks that match the beat from your library?

Think about the Contacts app. What was the last thing you saw that signalled a change here? Is there really no innovation to be found in how our disparate online lives can be brought together and presented to us? Apple does dabble in this, particularly in how Siri will match things together, but just look at the actual Contacts entry for someone you know and love, and speak to all the time, across different platforms. Look at how impersonal it is. Has it changed – *truly* changed – in the 14 iOS updates we've had so far? I have changed how I interact with people a huge amount several times during the lifespan of the Contacts app, and the app has listened to the changes, but

It struck me just how static and stagnant some built-in iPhone apps are



The Maps app is a good example of Apple innovating – new map designs and AR features really updated how well it works.



iOS 15 gave us ways to avoid using our apps so much, and to be fair, I can't say I'm not grateful for that...

it hasn't participated in them. And is this definitely still the best way to lay out the Camera app? Are these controls still the right things in the right place?

Have we really reached the peak of time management and appointment viewing in the Calendar app? Hasn't iMessage seemed to stall after its big changes a few years ago, while other chat apps keep evolving?

I know there's a balance Apple has to strike between changes they'd like to make and fans who are furious every time a single button is moved, but I'd be very happy if iOS 16 spent some time, as so many teenagers do, getting a bit introspective this year.

### ABOUT MATT BOLTON

>Matt is the editor for Apple and home tech at T3 and has been charting changes at Apple since his student days. He's sceptical of tech industry hypebole, but still gets warm and fuzzy on hearing "one more thing".



**PRIZES  
WORTH  
£1,210!**



**Win**

## An amazing recording bundle from 512 Audio

**> If you love making podcasts, creating music, or streaming content, you know the value of a top-notch recording setup.** And if it's time for an upgrade, you're in luck, as this issue we're giving away two huge recording bundles from 512 Audio.

First up, we've got the Skylight XLR microphone that's perfectly tuned for vocals. Its 34mm gold-plated condenser capsule, cardioid pattern, and custom frequency response are all tailor-made to get the best results for music and streaming.

Then we have a mic that's perfect for podcasters, the Lighthouse XLR.

This comes with a 'hyper-focused' pickup pattern, which is 20% narrower than standard cardioid patterns, helping to separate your voice. Its built-in pop shield and low-frequency filter mean crystal-clear audio that audiences will love.

As you also need to ensure that your mic is held in position and sounding great, we're also including a boom arm and pop filter. The boom arm provides a sturdy, adaptable support that's super simple to use and completely silent, while the pop filter cuts out plosives and popping sounds to ensure you sound great at all times.

And, as you need to know everything sounds spot on, we're including 512 Audio Academy monitor headphones. Custom 45mm drivers deliver detailed audio that's super accurate, helping you to make sure that everything sounds as it should do.

### > THE QUESTION

To be in with a chance of winning one of two amazing recording bundles from 512 Audio, just answer this question:

**What recording pattern does the 512 Audio Skylight microphone use?**

- A) Cardioid
- B) Stereo
- C) Omnidirectional

> For more information about 512 Audio's range of audio-recording products, head to the company's website at [512audio.com](https://512audio.com).

## HOW TO ENTER...

- > To enter, you can visit our website at [bit.ly/MF512Audio](https://bit.ly/MF512Audio) (web address is case sensitive).
- > For full terms and conditions, go to [bit.ly/MF512Audio](https://bit.ly/MF512Audio). By sending your entry, you agree to these competition rules and confirm you're happy to receive details of future offers and promotions from Future Published Limited and carefully selected third parties, if you have given us permission to do so on the entry form.
- > This competition closes on **30 May 2022**. Over 18, GB residents only.
- > The winners' details will be shared with 512 Audio for the purpose of providing prizes.

For our latest  
subscription offer  
see page 34!

# Mac FORMAT

INVESTIGATES

# Apple and podcasts

Lots of people consume lots of podcasts on Apple devices, but is the company really a big player in the podcasting world?

WRITTEN BY CHARLOTTE HENRY >

**A**pple has always been strongly associated with podcasts, thanks in no small part to the iPod.

There is a chicken-and-egg style debate about the connection, but there's no doubt the device cemented the link between Apple and podcasts in the mind of many consumers. Despite this, for years, Apple has only really provided a distribution platform for podcasters in both the hardware and software spaces.

Until very recently, it never looked to produce podcasts itself, nor provide creators with direct ways to make money via its platform. As Joseph Evans, Head of Tech at analysis firm Enders Analysis, told *MacFormat*:

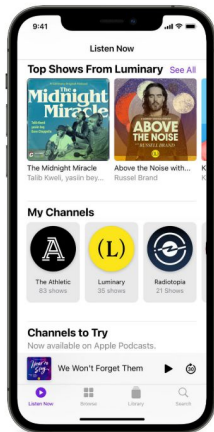
"Apple has been a bit of a neglectful parent of podcasting. For years it controlled most of the listening but failed to invest in things that could have helped creators, like analytics or payment support. As podcasts grew,

clunky workarounds came along to fill some of those gaps, like Patreon ([patreon.com](https://www.patreon.com)) and advertisement tech providers. But it took real competition for listening to wake Apple up – since Spotify made its ambitions in podcasting clear, Apple has started to launch many of the obvious features that were missing."

No doubt Apple would push back at the "neglectful parent" characterisation. It could legitimately point out that it has provided a platform and resources for podcasters, such as a directory of shows, even when it was making no money directly from podcasts. It also has significance by virtue of the fact that there are one billion iPhones with its Podcasts app out in the world.

## Podcast Subscriptions

While it does have some ground to make up, things have changed, particularly in the last year. So is Apple finally taking podcasts seriously?



The Channels option enables you to see all podcasts from a single provider on one handy page.

Well, in April 2021 Apple announced Podcast Subscriptions. The idea was that both independent creators and premium studios could charge for their shows directly in the Podcasts app. Apple, of course, takes the same



30% cut it takes from many other subscriptions. Amongst those to sign up were the *LA Times*, sports outlet The Athletic, and Pushkin Industries, the company co-founded by renowned author and podcast host Malcolm Gladwell.

Commenting at the time, Eddy Cue, Apple's senior vice president of Internet Software and Services, said the company was "proud to lead the next chapter of podcasting with Apple Podcasts Subscriptions".

Things didn't go that smoothly. Apple Podcast Subscriptions was originally slated to launch in May but did not actually go live until the middle of June. There was also the launch of Channels, which allowed a publication producing a variety of shows to put them all in one place, making them somewhat easier for listeners to find.

## Has it worked?

Apple is typically circumspect about giving precise figures for both the number of Podcasts app listeners and the number of people paying for subscriptions directly through it. That makes assessing whether the rollout of Apple Podcast Subscriptions has been a success somewhat difficult. It does not seem to have majorly shifted the industry though. As Evans of Enders Analysis noted, many creators had already found workarounds.

Despite the huge numbers of iPhones and other Apple devices in circulation, Spotify announced during its earnings call for the third quarter of 2021 that it had become the number one podcast platform in the US.

Evans said that "Apple is not in a great position, for a few reasons. First, its refusal to work with other platforms; it won't launch an Android app, and Apple Podcast subscriptions can't be redeemed on other listening apps. Apple-only subscriptions would have been a great way to lock podcasters in when Apple dominated.

"Now it just looks like a good reason to use another payments solution – particularly when Apple is claiming up to 30% of the subscription price. Second, its aversion

## Original content is now a key battleground, as it is in the world of television and film

## TOP SUBSCRIPTION PODCASTS >

> According to a list released by Apple in November 2021, these are the top subscription podcasts:

### > *Bad Blood: The Final Chapter*

with John Carreyrou

### > *The Just Enough Family*

with Ariel Levy

### > *U Up?*

with Jordana Abraham and Jared Reid

### > *Fresh Air*

with Terry Gross

### > *The Handoff*

with Don Lemon and Chris Cuomo



### > *How I Built This*

with Guy Raz

### > *Chameleon*

with Josh Dean, Vanessa Grigoriadis and Trevor Aaronson

### > *Diet Starts Tomorrow*

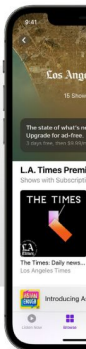
with Aileen Dreksler and Sam Sage

### > *Planet Money*

with Amanda Aronczyk, Erika Beras, Mary Childs, Jacob Goldstein, Sarah Gonzalez, Alexi Horowitz-Ghazi and Kenny Malone

### > *Swindled*

with 'A Concerned Citizen'



The Apple Podcasts app now offers thousands of Podcast Subscriptions and dedicated channels.

to advertising: Spotify can sell ads for podcasters on the basis of actual logged-in impressions – Apple's not going to sell podcast ads. And ultimately podcasts are always going to be too small for Apple to care that much about, so it's not motivated to solve things like podcast discovery, or improve its app, in the same way that competitors are."

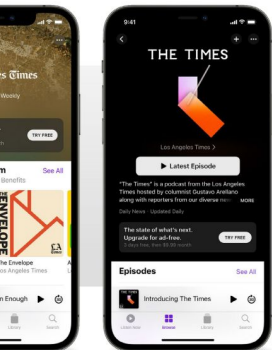
Apple can be said to be lagging behind in its offer to creators in other ways too. For instance, it took until March 2022 for podcasters to be able to see how many followers they have on the Podcasts app, an important data point.

## Original content

Original content is now a key battleground between firms in the world of audio, as it is in the world of television and film. Originals are a key part of the Spotify success story. The company (in)famously put \$200 million into a deal with mega-podcaster Joe Rogan. It also spent hundreds of millions of dollars acquiring podcasting companies Gimlet and Anchor in February 2019. Gimlet is a production studio, while Anchor provides the necessary tools for podcasters to host and monetise their shows.

Amazon, too, has invested in original podcasting. At the end of 2020, it bought Wondery, the company behind shows such as *Dirty John*, *Dr Death*, *Business Wars*, and *The Shrink Next Door*. Its shows are available





on non-Amazon apps, and you can subscribe to them in Apple Podcasts, but they also sit alongside Amazon Music and its audiobooks service, Audible. While Amazon Music does not get anywhere near to competing with Apple Music or Spotify on its own, Amazon can claim to be offering an all-encompassing audio solution to consumers.

Apple has not really struck major deals of the kind its rivals have. In September 2020 it bought Scoot FM, an app that created podcast stations on various topics. It's possible to see a through-line from this acquisition to the creation of channels. However, there have not been Rogan-style deals for original content. Instead, its original podcasts offerings stem from its streaming service, TV+. *The Line* was first released as an Apple TV+ branded podcast in April 2021. It told the story of former US Navy SEAL Eddie Gallagher.

## PODCAST APPS >

> Apple Podcasts and Spotify are not the only players. Here are some alternatives...



### Overcast

> An easy-to-use podcasts app with features like Smart Playlists.



### Stitcher

> Home of original shows like *Freakonomics Radio*, as well as being a highly functional podcast player.



### Deezer

> Brings together music and podcasts like Spotify does.



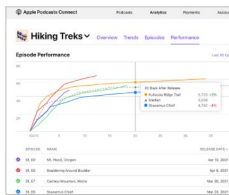
### Acast

> Hosts and monetises podcasts for creators, as well as lets users listen to them.



### Tuneln

> Provides a huge number of live audio streams from major outlets as well as podcasts.



Apple Podcasts Connect allows creators to submit, manage, and monitor their shows.

He was charged with committing war crimes but was ultimately acquitted on all but one count in a high-profile, controversial case. A television documentary of the same name followed in November that same year.

There was also the high profile signing of former *Daily Show* host Jon Stewart. His Apple TV+ talk show *The Problem With...* was accompanied by a podcast of the same name, and there is *Oprah's Book Club*, which is branded as an Apple Books podcast.

While small in number, these have been shown to be significant interventions into the original podcasting space by Apple TV+. *The Line* broke news when Gallagher claimed on the podcast that the SEALs conducted a range of medical procedures on the injured detainee he was accused of killing, with the intention that the Islamic State fighter would die as a result of them. Comments by Jon Stewart about Harry Potter author JK Rowling also caused controversy – something Apple is never keen to court. Ultimately though, as with streaming TV and films, if Apple really wants to make a big impact on the world of podcasting it is surely going to have to produce more shows of its own.

## Apple's approach

Apple's approach to podcasting is not all that different to its approach to other sectors of media – it dips its toe in, without fully committing and deviating from its main focus of making and selling hardware.

As with TV+ streaming, when it comes to podcasts, it can often seem like Apple is having to make up ground, instead of leading from the front. Despite this, Apple's place in podcasting is significant and is likely to remain so, simply because so many people listen to podcasts on Apple devices.




The background is a rich, dark wood grain. In the bottom left corner, a portion of a silver laptop is visible, showing the keyboard and trackpad. In the top right corner, a black iPad is shown. In the bottom right corner, an iPhone is lying flat, displaying a colorful, abstract wallpaper and the time 9:47.

# 54 AMAZING APPLE HACKS

Great things to do on your  
Mac, iPhone and iPad

Written by Carrie Marshall

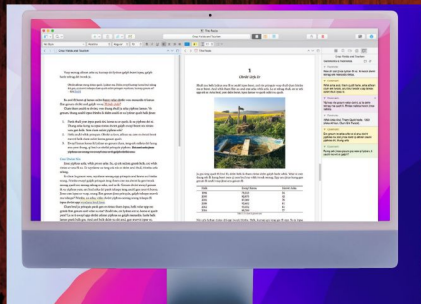


**S**ince we clapped eyes on and fell in love with our very first Macs, we've been blown away not just by their performance or their power, as impressive as they are, but by the possibilities they offer. Where else can a single device be an artist's sketchbook and a guitarist's amp, a writer's notebook and a photographer's darkroom, a space cruiser's cockpit and an architect's easel? And that's just scratching the surface of what your Mac, iPhone and iPad can do.

In this feature, we'll discover how you can do all kinds of amazing things on your Apple kit. We'll discover the apps that'll elevate your creative projects into something truly spectacular, and we'll look for the cool tools that'll make your life easier. We'll discover how your Apple kit can help you organise your biggest ideas and your littlest tasks, how it can make your days easier when you're at work, school or college, and how it can help you learn to do new things and do what you do even better.

# Magical Mac

Make amazing art, learn to craft code or make your very own podcast



## Write that epic

> literatureandlatte.com, ulysses.app

**1** Whether it's your debut novel or a dissertation, if you're planning a huge writing project then apps such as Scrivener (£17.99) or Ulysses (Free, offers IAPs) can help.

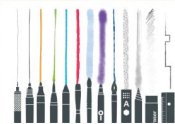
They're both described as writing environments rather than word processors because they enable you not just to write but to organise your research, keep track of structures and

perform search and replace across multiple documents. And everything's stored as text files so they run very quickly. Best of all, they also have immersive writing modes that get rid of every distraction and enable you to focus solely on your writing. While it's absolutely possible to write entire books in Pages, these apps make everything so much easier.

## Organise your everything

> culturedcode.com, omnigroup.com

**3** Sometimes Calendar and Reminders just aren't enough to keep you on top of everything you need to remember. That's where productivity apps such as Things (£17.99) or OmniFocus (Free, offers IAPs) help, offering effective tools to manage your time, tasks and thoughts.



## Draw absolutely anything

> tayasui.com/sketches

**2** There are many drawing apps available for the Mac, but not many great ones that you can use for free. That's why Tayasui Sketches is so great; it's a realistic drawing app with tons of tools, a really user friendly interface and stylus support, and the core app is completely free. There is a Pro version, which is modestly priced at £17.99, that unlocks unlimited layer support, tons more drawing tools, a superb wet watercolour feature and lots of extra colour tools.

There's also an iOS version, and Pro subscribers can use iCloud to sync sketches and drawings across all your devices. We think you'll enjoy Sketches so much that you'll want the full thing so you can take full advantage of its brushes.

## Create a podcast

> anchor.fm

**4** You can record a podcast using any Mac or iOS audio app. We like GarageBand, which makes recording and editing a podcast super simple – but you need to get that podcast to your audience. That's where Anchor (Free) comes in; it'll distribute your podcast to all the key platforms for free.

## Learn to code

> [apple.com/uk/swift/playgrounds](https://apple.com/uk/swift/playgrounds)

**5** Apple's Swift Playgrounds app is a fantastic way to teach yourself coding in the Swift language. It's available for Mac and iPad and, once you've got the hang of it, you can use the same software to build and test your own apps and upload them to the App Store for distribution.



## Illustrate like a pro, for free

> [vectornator.io](https://vectornator.io)

**7** Right now Vectornator is the drawing deal of the year.

It's a direct competitor to vector apps such as Adobe Illustrator but it costs absolutely nothing until the developers work out how they're going to make money from it, and the app is likely to stay free even then.

It's one of the easiest vector graphics apps around on the Mac and on iPhone and iPad too, but while it's simple to use it isn't a simple app; it supports all the key formats, works with digital input devices such as Apple Pencil (on compatible iPads) and tons of styluses, and it's packed with tools to create complex multilayered images. It's also extremely lightweight, running very fast even on highly detailed illustrations.



## Design things for print or pixels

> [affinity.serif.com](https://affinity.serif.com)

**6** The Mac made its name in desktop publishing, so it's nice to see the tradition being upheld by the likes of Affinity Publisher. It's an easy to use but

very powerful publishing app for print and digital publications, and the price of £47.99 makes it incredibly good value too - as are all the other Affinity apps.



## Make your own website

> [wordpress.org](https://wordpress.org), [weebly.com](https://weebly.com)

**8** WordPress (Free) enables you to build anything from a basic blog to a massive news website.

While earlier versions were a little bit intimidating the latest versions are incredibly easy to use and powerful too.

There are tons of high-quality templates that take care of the design for you, and they're easy to edit to get things just-so. There's also a version

you can install on your own web space. While WordPress is great for presenting words, what if you want to sell stuff? You can do that easily too.

Weebly, designed for small businesses, is an affordable alternative. Its online store option starts at £9 per month and includes payment processing, a shopping cart system and third-party payment provider support.



# Amazing iPad

Work, rest and play with these amazing apps for creativity, productivity and watchability

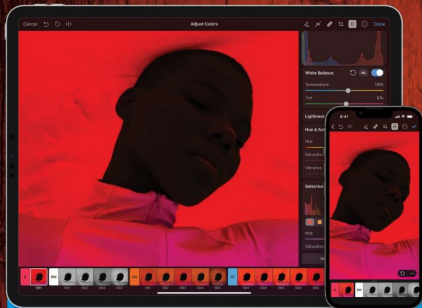


## Learn an instrument

> [fender.com](http://fender.com), [gibson.com](http://gibson.com)

**9** **Fancy being a guitar hero?** Guitar makers Fender and Gibson both offer apps that'll teach you to play like legends, and both have free trials – 7 days in the case of Fender and 14 for Gibson. They're both brilliant apps for teaching guitar (and in the case of Fender, ukulele and bass too), but before you hand over your card details make sure you check out GarageBand first.

GarageBand's Smart Instruments enable you to mess around with guitars, basses, pianos and synths, and if you go over to your Mac you can download free guitar and piano lessons too. If there's a specific song you'd like to learn, head over to [ultimate-guitar.com](http://ultimate-guitar.com) where you'll find guitar, ukulele and piano tabs and often video too.



## Edit, enhance and create amazing pictures

> [pixelmator.com](http://pixelmator.com), [affinity.serif.com](http://affinity.serif.com)

**11** **The Photos app on your iPad has some great editing features.** You can adjust the colours of your images, crop and adjust them and use filters to get some nice retro effects, and so on.

But if you want to get really creative with digital images, Pixelmator or Affinity Photo deserve a place on your iPad. They're both

incredibly cheap – £19.49 for Affinity Photo and £4.49 for Pixelmator – and they're packed with pro-grade features for retouching, editing, enhancing and drawing all kinds of images. Both have Mac equivalents but these apps are great on iPads, especially if you have an Apple Pencil, and they're bargains considering what they're capable of.

## Learn to DJ

> [algoriddim.com/djay-ios](http://algoriddim.com/djay-ios)

**10** **Fancy spinning the (quite small) wheels of steel?** The excellent dJay (Free, offers IAPs) app turns your iPad into high-tech turntables, and being able to physically control the tracks with the touchscreen makes it feel even more intuitive than on the Mac. dJay makes it easy to mix, add effects and can also auto-DJ for you.



## Play Xbox games

> [xbox.com](http://xbox.com)

**12** For all the joys of the App Store and Apple Arcade, some of the best games ever made are only for PC or console. But if you have a Microsoft Game Pass subscription (from £7.99/month) you can use Microsoft's cloud gaming to play them on iPad. Cloud Gaming works on iPhone too but it's better on the iPad's bigger screen.

## Have a virtual movie night

**13** Want to watch a movie with family or friends but can't be together? SharePlay, added to FaceTime in iOS 15.1, enables you to watch Apple TV or listen to music while sharing a FaceTime call. You all enjoy the same content at the same time, and you can use Messages to chat or comment by text.



## Make your own beats

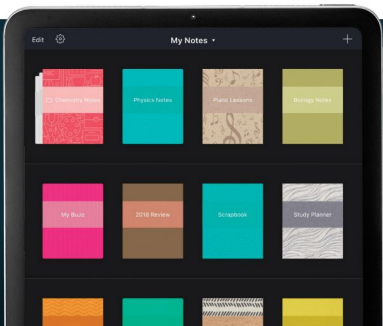
**14** Other music apps are available, but if you haven't already experimented with it you'll be delighted to discover GarageBand is great for making beats for any genre of music.

GarageBand has three options you can use, so you can build beats from pre-recorded loops; you can build beats using the Beat Sequencer; and you can build beats by using the Drummer tool, which uses samples of real musicians and enables you to pick not just what they play but how they play it too. You can choose between a collection of different drum kits and electronic drums, between different drums, and from GarageBand's extensive library of loops too. We've lost count of how many hours we've spent on GarageBand making all kinds of exciting drum tracks.

## Sculpt in 3D

>maxon.net/forger  
**15** Most of the artistic type apps we've looked at so far are for working in just two dimensions.

With Forger you can use your iPad to create virtual sculptures in three dimensions. It's fun to experiment with while powerful enough for professional use, and at £1.79 a month it's really cheap for a pro-level app.



## Organise all your ideas

>noteshef.net  
**16** If you're a student or just need an app that's really good for taking all kinds of notes, Noteshelf (£8.99) will help organise your ideas on your iPad.

You can make notes by handwriting them, typing them or recording them; you can record meetings or lectures; you can mark up PDFs and presentations; and you

can even search handwritten notes. It ties in with all the major cloud services and uses iCloud to sync between devices, and you can create voice notes using Apple Watch. While Noteshelf works without accessories, adding an Apple Pencil or similar stylus takes things to a new level, turning your iPad into the smartest, most flexible notepad around.



# Incredible iPhone

Replace reality, scan almost anything and make the world a smaller place

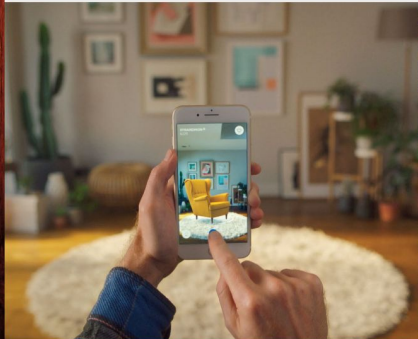
## Upgrade reality

**17** Apple's augmented reality (AR) tech is really amazing, especially on more recent iPhones.

By overlaying graphics over real-time images from your phone's camera you can do everything from virtually trying out furniture to playing video games, and the number of AR apps (available from the App Store) is growing. Many of them also work on M1 Macs, albeit without the live camera view.

IKEA Place enables you to see how various items of furniture will look in your rooms; NightSky overlays all kinds of planetarium things over the sky and even enables you to see space

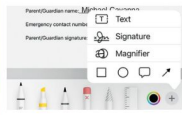
stations in your living room; Pokémon Go turns the real world into a Pokémon playground. All of which are free (some with IAPs). Human Anatomy Atlas 2021 (£21.99) shows 3D models of skulls and skeletons wherever you point your phone. For bones of a different kind, Monster Park - AR Dino World (Free, offers IAPs) brings dinosaurs to life while Mammoth Mini Golf AR (£2.49) is exactly what its name suggests: an augmented reality game featuring mammoths and mini golf. Fancy making your own AR experiences? Everything you need is at [developer.apple.com/augmented-reality](https://developer.apple.com/augmented-reality).



## Sign everything electronically

**18** The scanner in Notes doesn't just scan

documents. It enables you to sign them too. Simply scan the document as normal and then tap on the share icon and then the Markup icon. Now tap on the '+' icon and choose Signature. You can now choose to use a previously saved signature, or scribble a new one.



## Use Live Text

**19** Live Text feels like magic and it's available on iPhones from the XS/XR onwards. It

automatically recognises text in the Photos app and Camera app. It draws a yellow frame around detected text, and you can adjust the frame by swiping or grabbing its edges. You can then use five different options: Copy Text, so you can paste it into another app; Select All, to select all text in the frame; Look Up, to search the web for the selected text; Translate, which translates languages; and Share, which sends the text to your messaging app, AirDrop or other sharing options. You can also tap directly on website addresses or phone numbers to visit them and call them respectively.



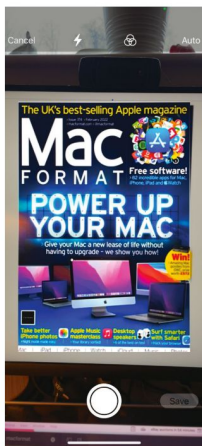
## Automate everything with Shortcuts

**20** The built-in Shortcuts app makes it easy to automate all kinds of things. We use it to email things to specific people from inside apps, to control smart home kit and even to automatically change our Apple Watch face at certain times. It's incredibly easy to create pretty much any automation you might want, so why not give it a try.



## Become a social media star

**21** Facebook, Twitter and Instagram are so last decade: if you want to be a viral star, TikTok is where it's at. The free TikTok app (Free) isn't just for consuming TikTok clips; it's also for recording, uploading, livestreaming and sharing too, and its extensive music library enables you to find the perfect soundtrack.



## Scan documents instantly

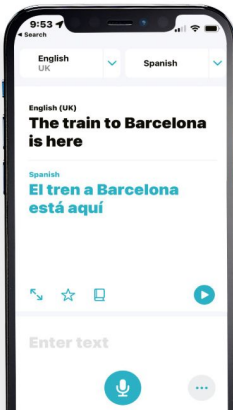
**23** Remember when digitising documents meant giant and desperately slow flatbed scanners? Now you can do it with a single tap on your phone. All you need is the Notes app in iOS 12 or later; if you have macOS Mojave onwards you can also use the camera to scan directly to your Mac.

To scan a document, open or create a note and then tap on the camera icon. Now choose Scan Documents and place your camera over the document you want to scan. Unless you've turned off Auto mode your phone will automatically scan it; if you have, you'll need to press the shutter button or one of the volume controls. Drag the corners to fit the scanned page and tap Keep Scan. You can now retake the scan, save it or scan more documents.

## Translate in real time

**22** Your phone can be a universal communicator, automatically translating your words into another language and someone else's words into yours. There are apps that can do this from the likes of Google and Microsoft, but it's worth checking out Apple's own built-in Translate first.

The app can translate text, voice and even conversations in lots of different languages and if you're going to be travelling, you can download the languages so the feature will work even when there's no internet connection. Conversation Mode is particularly good; it shows each bit of the chat in both languages, and if you tap '...' then Auto Translate, you don't need to keep tapping the microphone icon.





The source for tech buying advice

[techradar.com](https://www.techradar.com)

# More amazing things to do

Make travelling more friendly, craft comics, and research your ancestors

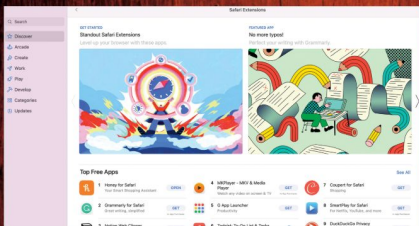
## Make your own comic book

**25** Holy Apple Pencil, Batman! There's an iPad app for making comic books! In fact, there are lots. But if you'd like to do things the easy way, Comic Life 3 (£4.49) for iPhone or Mac or Comic Draw (Free, offers IAPs) on iPad are great fun, and the latter works well with Apple Pencil.

## Organise everything for a trip away

**26** Say goodbye to travel-related stress such as trying to remember flight numbers or dig out e-tickets or reservation confirmation codes. TripIt does all for you to take the 'aaagh' out of travel.

TripIt comes in two flavours: a free app, which makes it easy to organise all the things you need to keep and remember for your travels, and a paid-for pro version (£38.99) that adds real-time flight status alerts, tells you how busy the security lines are likely to be and includes airport maps so you won't get lost. And because it works across Mac, iPhone, iPad and Apple Watch it's available on every device you're likely to have on your travels, ensuring that everything you need is right there when you need it.



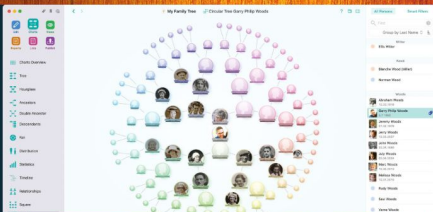
## Fix the web

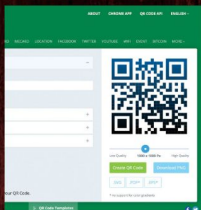
**24** Safari Extensions and content blockers can completely transform your online experience. Vinegar (£1.79) strips the ads from YouTube and gives you more control over how videos play. Adblock Plus (Free) gets rid of pop-ups and other irritations, Social Fixer makes Facebook less annoying and Stop The Madness, the only one here that's a

paid product (£6.99), stops sites from disabling key features such as copy and pasting, dragging and dropping and so on. It also gets rid of extra tracking bits from web links for easier and clearer sharing, and removes most of the privacy invaders you'll find on commercial websites. All the extensions mentioned here are available from the Mac App Store.

## Trace your family tree

**27** Tracing family histories is big business online. Sites such as [myheritage.com](http://myheritage.com) (from £59) and [ancestry.co.uk](http://ancestry.co.uk) (from £10.99/month) help people find far-flung connections all over the globe and to explore and share their family tree. If you'd rather use a desktop app, MacFamilyTree 10 (\$69.99, about £85) is a good option.

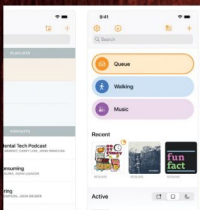




## Make a QR Code

> [qrcode-monkey.com](http://qrcode-monkey.com)

**28** QR codes are a great way of cramming information into a shareable, printable, iPhone or camera scannable QR code. Be that a website address, your contact details or anything else you might want someone to access. There are tons of free generators online, but QR Code Monkey is our go-to.



## Get better podcasts

> [overcast.fm](http://overcast.fm)

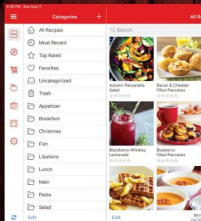
**29** Apple's Podcasts app isn't the best. We much prefer Overcast, which is made for iOS and also runs on M1 Macs. It's a labour of love by a single person, and that person really knows what podcast listeners want their apps to do; we use it to find and play podcasts at home, on the train, and in the car.



## Amp up your axe

> [ikmultimedia.com](http://ikmultimedia.com)

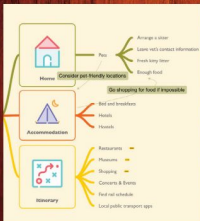
**30** Today's music stars often use simulations of pedals and amps on stage because the technology is so good. And you can do the same at home with apps such as GarageBand and Apple's Logic Pro X. Need more? Amplitude 5 enables you to emulate almost any amp and effects.



## Cook up a storm

> [paprikaapp.com](http://paprikaapp.com)

**31** If you like to find recipes online, you'll love Paprika. The app makes it easy to grab recipes and save them for later, and can scale amounts up and down for different serving numbers, and create your shopping list too. When cooking, recipes become tappable checklists to keep you on track.



## Map your mind

> [mindnode.com](http://mindnode.com)

**32** Mindnode enables you to create mind maps on your Mac or iOS device, helping you to organise your thoughts and ideas visually. It can be an effective way of keeping tabs on projects, and while Mindnode isn't expensive you can try it out for free to make sure it's the right mind mapper for you.

## Make websites work

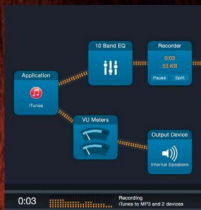
> [reederapp.com](http://reederapp.com)

**33** If you're not already familiar with the many joys of reading websites' RSS feeds, Reeder will make your experience better. It enables you to subscribe to your favourite web destinations without having to wade through all the usual website clutter and it's a great way to ensure that you never miss a post.

## Create shortcuts and triggers

> [folivora.ai](http://folivora.ai)

**34** Better Touch Tool enables you to customise your Mac's input devices. Enabling you to create triggers and shortcuts such as keyboard macros and input actions. And if your Mac has a notch at the top you can create a Notch Bar containing macros too.



## Record anything

> [rogueamoeba.com](http://rogueamoeba.com)

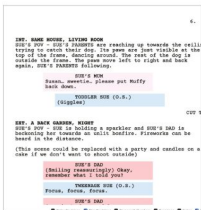
**35** Whether it's a sound in Safari, a tune in TikTok or a meeting in a video messaging app, if it's making noise on your Mac you can record it in full quality with Audio Hijack. It's a great app for podcasting, streaming and other tasks that recording audio sources and it's easy to configure.



## Write better, faster

> [bear.app](http://bear.app), [ia.net](http://ia.net)

**36** Markdown is a writing language that enables you to write and format text. You can then output, including formatting and links, to all kinds of destinations. Markdown apps include Ulysses (see p24), and other excellent alternatives such as Bear (Free, offers IAPs) and IA Writer (£25.99).



## Write your screenplay or script

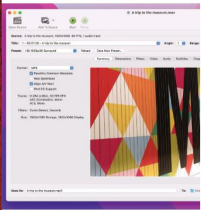
> [highland2.app](http://highland2.app)

**37** You can write a screenplay or script in any writing app, but some apps are designed specifically for the job. We really like Highland 2 - it makes it easy to layout your script and also checks for issues such as gender imbalance. The basic version of the app is free.

## Use one app for many messages

> [meetfranz.com](http://meetfranz.com)

**38** Franz enables you to use the likes of Facebook Messenger, Slack, Gmail, Discord and more in a single app. However, it doesn't work with Messages. The free version of Franz is limited to three services; if you need more, extra-service support starts from \$2.99 (about £2.60) a month.



## Write more clearly

> [grammarly.com](http://grammarly.com)

**41** If you'd like a bit of help with writing, try the Grammarly desktop app. It works across everything from email and word processing to website forms, offering suggested improvements as you type. It goes beyond spelling and grammar checking to help you write more clearly and fluently. The basic app is free.

## Chill with background sounds

**39** Fancy a soothing soundtrack to block out noise or to help you relax, work or study? You can find what you need right there on your iPhone. Go to Settings > Accessibility > Audio/Visual > Background Sounds and pick the kind of audio you'd like, such as ocean or rain sounds.

## Convert your old videos

> [handbrake.fr](http://handbrake.fr)

**40** If you've been gathering video for a long time, some of it may be in old, obscure and/or inefficient formats. The free Handbrake app can read pretty much any kind of video and export it in an array of modern formats. It also has good tools for improving video quality on older footage.

## Turn photos into shapes

> [adobe.com/uk](http://adobe.com/uk)

**42** If you subscribe to Adobe's Creative Cloud (£49.94/month), you'll love Adobe Capture. It can turn photos into editable vectors you can use in apps such as Illustrator. It can also identify fonts and help create colour palettes from whatever you point your iPhone at.





## Keep a journal

> [dayoneapp.com](http://dayoneapp.com)

**43** Day One is the most popular journaling app in the App Store. It's fast and easy to use; it works across Mac, iPhone and iPad, and the full version isn't very expensive (£3.49/month). It makes keeping a journal as quick as posting a Tweet, although here you can protect it to keep everything private.



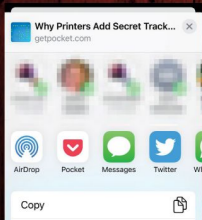
## Record a screencast

**44** You can record your Mac screen using QuickTime Player; open it from Applications then select File > New Screen Recording. Pick your microphone if you'll be recording commentary. If you need more control, try a dedicated screen recording app which includes editing features, such as Capto (£19.99, [globaldelight.com](http://globaldelight.com)).



## Create your own stop-motion movies

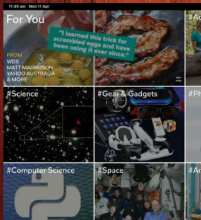
**45** Stop-motion animation is great fun. Apps such as Stop Motion Studio for iPad (Free, offers IAPs) make it possible to make your own without putting in too much time and effort. The tutorials are particularly good, with lessons showing you how to do things like animate LEGO.



## Save everything for later

> [getpocket.com](http://getpocket.com)

**46** Pocket (Free, offers IAPs) is like Apple's Reading List in Safari. But more flexible, fun to use and works on more than just Apple devices. With Pocket you can quickly share things you want to refer to later, storing them in your own personal library in the cloud.



## Create a Daily Me

> [flipboard.com](http://flipboard.com)

**47** Not an Apple News+ subscriber? You can create a similar 'Daily Me' personalised newspaper in apps such as the free Flipboard (iOS), which grab stories from social media feeds as well as learning what you like from news sites worldwide. You can also publish your own digital magazine.

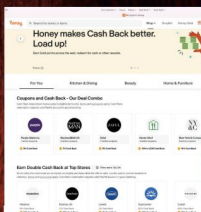


## Get text

> [textsniper.app](http://textsniper.app)

**48** If you want to copy text when the text isn't copyable - such as text in an image, a PDF, a video or an app - TextSniper will help. Simply draw around the words and TextSniper will scan it and turn it into editable text. It's a Mac app but you can use your iPhone camera as its input.

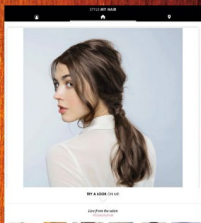




## Pay less for things

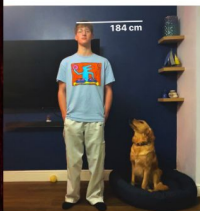
**49** If you install the free Honey extension in Safari it will automatically try to find coupon codes to save you money in the online shop you're visiting.

In many cases it can also tell you if the deal you're looking at is a real one or if the price history is distinctly dodgy. It's a great little app, and any savings are helpful.



## Change your look

**52** Want to try out a hair colour, a lipstick shade or a pair of glasses? Fortunately, your Mac, iPhone or iPad camera enables you to use virtual try-on services from the likes of L'Oréal and Maybelline, among many others. You'll find dedicated apps in the App Store for big-name brands but most have website versions too.



## Size things up

**50** The Measure app on your iPhone and iPad is a little gem of a thing. Measure enables you to see how big items or spaces are by simply pointing your camera at them. We use ours to get the size of things like rugs, sofas, cars and children, and it's really accurate on iPhone or iPad Pro, where it uses your device's LIDAR depth scanner.

today. We have a lot to go over so let's get started. First on the agenda is this new marketing effort our client wants us to move forward with.

0:37

We're working on different ideas on how to portray the message. On screen are two

Highlight Add Photo Copy

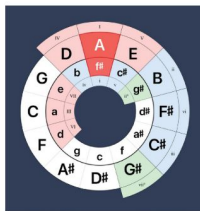
Great turn around team. Could we increase the size of the copy an option one? It would improve the composition, have we tried that? For option two it's almost there perhaps incorporate images of the target audience.

1:49

The user research came back and

## Transcribe chats

**53** If you want to turn speech in video calls, meetings or lectures into editable text, Otter (Free, offers IAPs) does it incredibly well on iPhone or iPad. It'll turn speech into text in real time if you have an internet connection, and you can train it to recognise specific speakers.

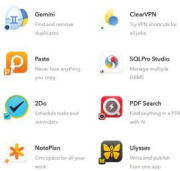


## Write a song

> [felttip.com](#)

**51** You don't need to know a great deal of music to write a great song. If you search the App Store for the Circle of Fifths, Opus 1 app (£2.49), it'll enable you to find notes or chords that work brilliantly together in Western chromatic music such as pop, rock and dance music in both major and minor keys.

## All Apps



## Get all the apps

> [setapp.com](#)

**54** Why buy or subscribe to lots of individual apps when you can have every app for a single payment? That's the deal with Setapp, which starts at \$9.99 (about £12) a month for one Mac or \$12.99 (about £16) for Mac and iOS and gives you over 230 high-quality, ad-free apps.

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# APPLE SKILLS

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## > Master Apple shortcuts

### macOS

- > **⌘** is the Command key, which is also labelled *cmd*.
- > **⌥** means the Option key, labelled *alt* or *opt*.
- > **⌃** means the Control key, labelled *ctrl*, and shown as **^** in shortcuts in the menu bar.
- > **⇧** is the Shift key.
- > **⌫** is the Delete key, which deletes to the left. **⌫+⇧** deletes to the right.
- > **⇧+⌘** is the Tab key, which shifts the focus between some controls.

### iOS

- > A *tap* is a brief contact of (usually) one finger on your device's screen.
- > To *drag* is to move a finger across the screen to scroll or pan around content.
- > *Swipe* means move one or more fingers across an item or the screen, then let go.
- > A *flick* is like swiping, but it's quicker, and is often used to scroll content more quickly.
- > *Pinch* means move two fingers together or apart, usually to zoom in or out.
- > *Touch and hold* means lightly rest your finger on an item and wait for a reaction.



## 38 MANAGE MAC NOTIFICATIONS

### WHAT'S INSIDE

#### 38 MANAGE MAC NOTIFICATIONS

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# Manage macOS notifications

Stay focused and distraction-free while working on your Mac

## IT WILL TAKE

> 10 minutes

## YOU WILL LEARN

> How to tweak notifications and widgets to suit the way you work

## YOU'LL NEED

> macOS 12 or later



With so many apps loaded on to our devices, it's easy to get overwhelmed with the sheer number of notifications fighting for our attention. That's particularly true on the Mac, a device where so many of us do our daily work - and where we really need to concentrate the most.

Luckily, macOS Monterey has several built-in features that can rein in the chaos and let you get back to the things that matter. From Focus mode to fine-grained notification

controls, there are plenty of ways to get more control over the information thrown your way.

It's also worth looking at widgets, as these handy mini apps can display pertinent information right from the Notification Centre, meaning you don't need to wade into each app every time you get an alert.

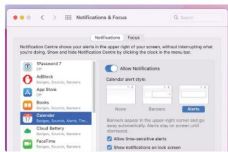
We've taken the plunge and explored each of these features to bring you the best in notification management. Put our tips into practice to restore some peace and quiet in your daily Mac life. **Alex Blake**

## HOW TO Manage macOS notifications >



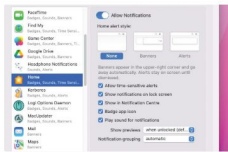
### Genius tip!

> If you dismiss an alert by swiping it away, macOS stores it in the Notification Centre. You can take action on the notification from here.



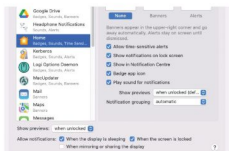
### 1 App-specific alerts

Click System Preferences > Notifications & Focus > Notifications, then choose an app. You can disable the app's notifications and change their style, or tweak other settings, like whether they are time-sensitive.

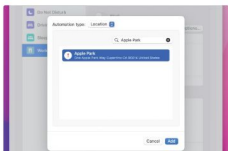


### 2 Critical alerts

Some apps (such as Home) have an option for critical alerts. In the case of Home, this could mean sending you a notification from a smoke detector alarm even when you are using a Focus mode to block distractions.

**CONTINUED...** macOS notifications >**3** General options

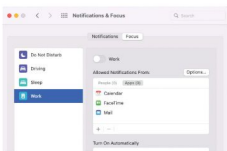
At the bottom of the settings pane are some general options. You can tell macOS when to show notification previews (only when unlocked, for example), whether to allow alerts when your display is sleeping, and more.

**5** Location alerts

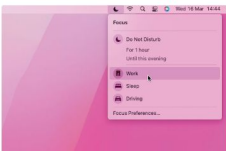
Under Turn On Automatically, click '+', then Add Location-Based Automation. Enter your workplace's address, click the result, then click Add. Now the Focus mode will automatically turn on when you arrive at work.

**7** Mac widgets

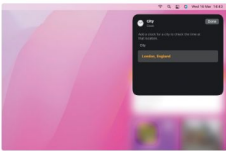
Now let's add some widgets. Click the date in your menu bar to open Notification Centre. At the bottom, click Edit Widgets. Now choose an app. Apps may offer different widgets, plus different sizes for each widget.

**4** Work Focus

Now click the Focus tab. We'll create a work Focus. Click the '+' in the bottom left and click Work. Under Allowed Notifications From, click Apps, then '+' and add some apps. Click People and choose who can contact you.

**6** Menu bar icon

Go to System Preferences > Dock & Menu Bar > Focus and tick Show in Menu Bar > Always. Now when you want to enable a Focus, just click the Focus icon in your menu bar and pick an option, like Work or Do Not Disturb.

**8** Customise widgets

Open Notification Centre and  $\text{⌘}$ -click a widget, then click Edit [App]. For the Clock app, for example, you can change which cities are displayed. You can also change the size of a widget by  $\text{⌘}$ -clicking it.

**Jargon buster**

> You can set important **alerts** (like imminent calendar events) to be time-sensitive. These are allowed through even when a Focus mode is active.

**Genius tip!**

> In Focus settings, the Share Focus Status option will let your contacts know you're busy if they message you while a Focus mode is active.







# Use dynamic links in iWork

Discover how to add links in Pages, Numbers, and Keynote

## IT WILL TAKE

> 30 minutes

## YOU WILL LEARN

> How to use links in Pages, Numbers, and Keynote

## YOU'LL NEED

> Pages, Numbers, and Keynote



**The humble link has lots of different uses, and they are employed to great effect in Apple's Pages, Numbers, and Keynote applications.**

You can use them for tasks as simple as directing your reader to a web page or opening an email with the address field populated. So far, so obvious. But links can also be used to accommodate online video from the likes of YouTube and Vimeo in your documents and presentations, and to direct readers to pages, or sections of texts.

There are a few different ways to create links, depending on what you're linking to. And there are some conditions attached. For example, if you want to link to a bookmark in Pages, you'll need to set your document to be a word processing, rather than page layout, document. Page layout documents can only link to pages, not sections.

In this tutorial, we'll show you how to make the most of adding links, whether that's in Pages, Numbers, or Keynote.

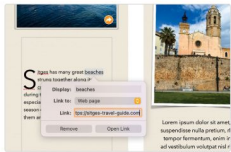
**Kenny Hemphill**

## HOW TO Add URL links >



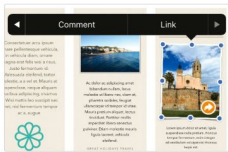
### Genius tip!

> To insert a link to web video in a document, click the Media button in the toolbar, choose Web Video and paste the link.



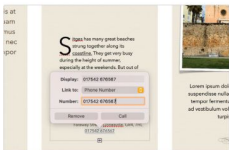
### 1 Web link on Mac

In Pages, Numbers, or Keynote, select some text or select an object on the page or in a slide. **⌘**-click and choose Add Link then 'Web page'. Paste or type the URL of the page in the Link box. Click anywhere on the page.

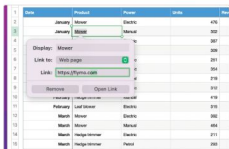


### 2 Web link on iOS

Tap an object on the page, or select text by tapping and holding then dragging anchors over the text. Tap Link, then tap the Link To box and choose 'Web page'. Type the URL in the Link box. Tap anywhere on the page.

**CONTINUED...** Add URL links >**3** Email or phone number

The process on both the Mac and iOS is the same as for a web page. In this instance, choose Email or Phone Number after tapping Add Link or Link To. Type the address or phone number in the Number or Email box.

**5** Edit a link

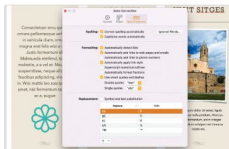
Click the link text, the link button on an object, or double-click the cell with the link in Numbers. In the link editor, make the changes to the link or click Remove to get rid of the link. Click anywhere outside the editor to close it.

**7** Create a bookmark

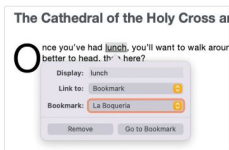
You can bookmark text only in a Pages word processing document. Select the text you want to bookmark, or place the insertion point before it then click on the Bookmarks tab in the Document sidebar. Choose Add Bookmark.

**4** Page or slide

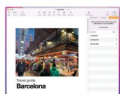
In Pages or Keynote, select the object you want to link from. **⌘**-click on it and choose Add Link on Mac or Link To on iOS. Choose Page (Pages) or Slide (Keynote) from the menu, then choose the page or slide number.

**6** Turn off links

To display URLs, email addresses and phone numbers as plain text, rather than links, go to Preferences > Auto-Correction. Uncheck the boxes next to 'Automatically add links...' for web pages and emails, and phone numbers.

**8** Link to a bookmark

In the same Pages document, select the text you want to link from, click Insert in the toolbar, then choose Link > Bookmark. Or, click **⌘**+**⌘** then Bookmark. Select the bookmark from the Bookmark menu.

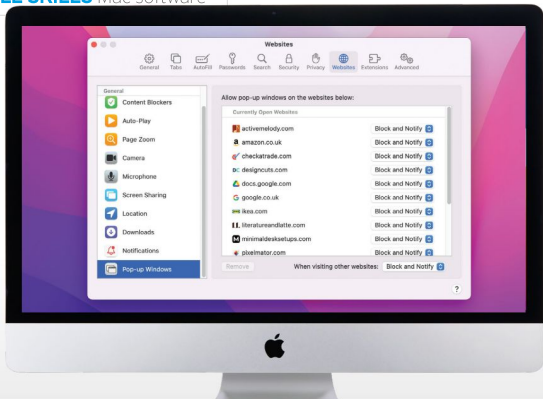
**Jargon buster**

> A **bookmark** is a section of text in a Pages word processing document to which you can link from any text or object.

**Genius tip!**

> When you link an object, such as an image or shape, you will see an arrow appear on it. Double-clicking it allows you to edit the link.





# Make websites behave

Fed up with pop-ups and auto-playing videos? Take control with Safari

## IT WILL TAKE

> 30 minutes

## YOU WILL LEARN

> How to stop annoying online interruptions in Safari

## YOU'LL NEED

> Safari for macOS



**Privacy has been at the heart of many of Apple's new features and improvements in macOS in recent years.** And

nowhere is this more evident than in Safari.

Whether it's preventing you from being tracked by cross-site cookies as you browse, or displaying a privacy report for the websites you visit, Apple has done much to make Safari more secure. In addition to those improvements, there are a whole host

of ways you can tweak how Safari deals with websites that may want access to your microphone or camera, or auto-play videos, display pop-ups or notifications, or want to know your location.

You can control what data websites have access to and how far they can go with putting content in front of you using Safari's preferences. And you can even tell specific websites to always open in Reader mode - ideal for sites that seem not to care whether videos and other animated content prevent you from reading the words on the page. Preferences can be set on a global basis, so all sites follow the same rules, or on a site-by-site basis, whichever you prefer.



Safari's Website Preferences lists sites that are currently open and those you have previously configured.

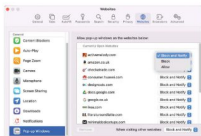
## Further control

And, by using third-party extensions such as content blockers, you can add another layer of control. If you do use a content blocker, you can specify in Preferences which websites it applies to. In this tutorial, we'll show you how to fine-tune Safari's preferences so that every website you visit behaves exactly as you want it to. **Kenny Hemphill**

## Jargon buster

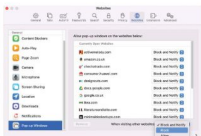
> **Configured websites** are websites for which you have previously chosen an option to either allow or deny, say, location information but which are not currently open.

# HOW TO Configure Safari website preferences >



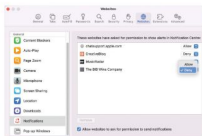
## 1 Control pop-up windows

Click the Safari menu and choose Preferences. Select the Websites tab and scroll down to and click Pop-up Windows. To control pop-ups for currently open tabs, choose one, click the menu next to it and choose an option.



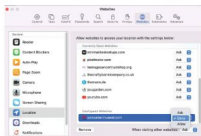
## 2 Manage for other sites

Once you've set the pop-up preferences for all the currently open tabs, you can dictate behaviour for every other website collectively. Click the menu next to 'When visiting other websites' and choose an option.



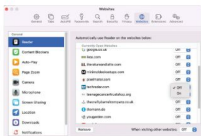
## 3 Website notifications

Choose Notifications from Preferences > Websites. Choose an option for each website listed. To prevent every other website from sending notifications, uncheck 'Allow websites to ask permission to send notifications'.



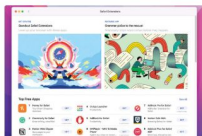
## 4 Configured websites

To change options for websites that aren't open, scroll to the bottom of the window and look under Configured Websites. Choose a website and click the menu to change its configuration. To reset it completely, click Remove.



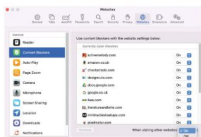
## 5 Open in Reader

If you're fed up with manually clicking the Reader button for certain websites, select Reader from the sidebar, choose a website and set the menu to On. If a website you want to configure isn't listed, open it in a tab in Safari.



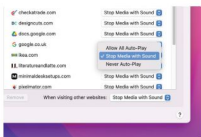
## 6 Install content blockers

Before you can configure a content blocker, you'll need to install one. Click the Safari menu and choose Safari Extensions to go to the relevant section of the Mac App Store. Choose an extension and click Get to install it.



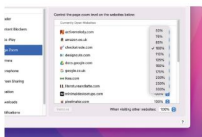
## 7 Content blockers

Choose Content Blockers in the sidebar. This will configure all the blockers you have installed. Click the menu next to each website in the list and choose On or Off. Choose an option from 'When visiting other websites'.



## 8 Configure Auto-Play

There are three options for auto-playing videos: Allow All Auto-Play, Stop Media with Sound, or Never Auto-Play. To configure it, choose Auto-Play in the sidebar and follow the same process for open tabs and the rest of the web.



## 9 Set Page zoom

You can control whether websites open at 100%, or range the zoom from 50% to 300%. Select Page Zoom in the sidebar. Choose an option for each website that's currently open, then for every other site on the web.

## 1 Export menu

> The Export menu allows you to choose the file format and quality to use for covered images.

## 2 Export image as a PDF

> If you want to export the image as a PDF, it has its own command in the File menu.



## 3 Select thumbnails

> You can use the sidebar to select multiple thumbnails to convert.

## 4 Image batches

> The Tools menu houses other options which can be used on batches of images.

# Convert multiple images

Use Preview for a quick way to convert lots of images to a different format

### IT WILL TAKE

> 30 minutes

### YOU WILL LEARN

> How to convert batches of images in Preview

### YOU'LL NEED

> macOS, Preview



The Mac's Preview app has evolved into a very useful tool for viewing, editing, converting, and annotating images and PDF documents. In fact, if you need to quickly resize an image, change its format, or add a comment or visual note to it, there are few better tools available.

In this tutorial, we'll focus on using it to convert multiple images in a batch from one

format to another. One use case for this could be when you take photos on an iPhone, AirDrop them to your Mac and need to upload them to a website or server, or email them to a friend. By default, the images are saved as HEIC (High Efficiency Image File) format. That's the format Apple has used since iOS 11 for iPhone camera images. However, it's a proprietary Apple format, not an open standard like PNG or JPEG, and so is no good when it comes to uploading to a website or sharing with someone who doesn't use a Mac.

## Various file formats

You can use Preview, however, to convert images to and from lots of file formats, 18 in total, including BMP, TIFF, native Photoshop files, and PostScript formats. And it's not just file formats you can convert. You can resize batches of images too, using the same technique. Or, you could rotate or flip images in batches.

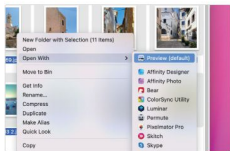
Sadly, there's no way to add a watermark to a batch of images, or to rename them. Hopefully those will come in a future update. In the meantime, here's how to batch convert images. **Kenny Hemphill**

Use Preview to convert images to and from lots of file formats



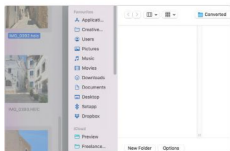
Preview's sidebar can display thumbnails of images, a table of contents, highlights and notes, or bookmarks.

## HOW TO Convert image formats >



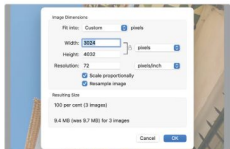
### 1 Choose your images

Locate the images you want to convert in the Finder and **⌘-click** on each one. Once you've selected them all, if Preview is the default app for opening them, double-click. If not, **⌘-click** and choose **Open With > Preview**.



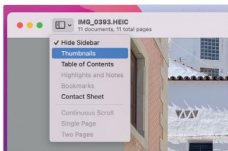
### 3 Convert file format

With the thumbnails selected, click the **File** menu and choose **Export Selected Images**. Navigate to the folder where you want to export the converted images and click the **Options** button.



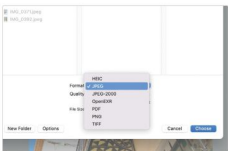
### 5 Batch resize images

Follow steps 1 and 2 to choose images and select them in Preview. Click the **Tools** menu and choose **Adjust Size**. Choose dimensions from the **'Fit into'** menu, or choose **Custom** to set your own. Set the resolution and click **OK**.



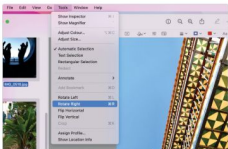
### 2 Select images in Preview

Click the sidebar icon in the Preview toolbar, or the **View** menu, and choose **Thumbnails**. Click in the sidebar, but not on an image, and then click **⌘+A** to select all the images you have just opened.



### 4 Set parameters

Click the **Format** menu to choose a file format for the exported images. Then use the **Quality** slider to choose the image quality. Note that the file size changes as you move the slider. When ready, click **Choose** to export.



### 6 Rotate or flip images

Some other options in the **Tools** menu can be performed on batches of images. You can't adjust the colour or annotate batches, but you can choose the **Rotate** or **Flip** commands to perform those actions on multiple images.



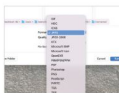
### Jargon buster

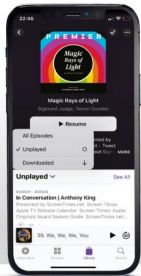
> The **format** an image is saved in dictates what data the file holds, how it's stored, and whether the image is compressed, among other things.



### Genius tip!

> When you click the **Format** menu to choose an image format, hold down the **⌘** key to see the full range of available formats.





# New features from Apple

Discover Universal Control, Face ID with a Mask, Tap to Pay and more

Find out about the latest handy features in iOS and iPadOS 15

**15** **iOS and iPadOS 15.4 were significant updates that introduced a host of new features.** Among them are Face ID while wearing a mask, Tap to Pay on iPhone, improved SharePlay integration, Shortcuts notifications, changes to the TV app, Notes in iCloud Keychain, and custom domains in

iCloud Mail. There are also new emoji to choose from, and plenty of other tools to discover and take advantage of.

All devices from the iPhone 6s onwards can use iOS 15.4; this includes the original iPhone SE, the 2020 iPhone SE, and the seventh-generation iPod touch.

**Charlotte Henry**

## EXPLAINED... What's new in iOS 15.4 >



### Genius tip!

> Face ID can also be set to recognise you when you're wearing glasses. To do that, tap Add Glasses in Settings > Face ID & Passcode.



### Use Face ID with a Mask

Face ID is most accurate when it's set up for full face recognition only. To use Face ID while wearing a mask, iPhone can recognise

**1** **Face ID with a Mask**  
Go to Settings > Face ID & Passcode. Turn 'Face ID with a Mask' on and follow the on-screen instructions. You can also add glasses here. Again, go to Settings > Face ID & Passcode, and tap the Add Glasses option.



Daredevil | Disney+  
disneyplus.com

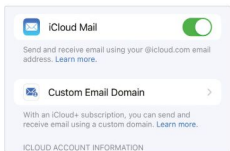
SharePlay



Charlotte's Mac mini

**2** **Easy SharePlay access**  
A new button makes accessing SharePlay easier. If a service supports SharePlay, the option will be available in the Share menu, accessed by tapping the Share icon or '...' (top-right corner) and opening the share sheet.

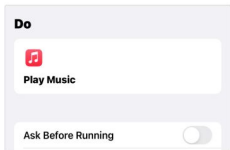


**CONTINUED...** What's new in iOS 15.4 >**3** iCloud email

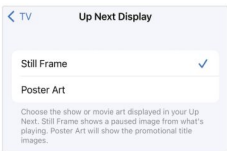
Users can now set up iCloud email for custom domains directly. Go to Settings > Apple ID > iCloud. There, you can set up email for a domain that you own or add existing email accounts from a custom domain.

**5** Tap to Pay

Tap to Pay is an exciting development. It enables you to accept contactless payments directly via your iPhone - there's no need for any additional hardware or software. The feature is only available in the US for now.

**7** Shortcut automations

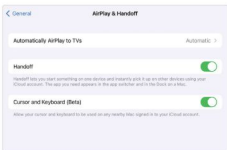
In Shortcuts, tap the Automation tab and choose 'Open an Automation', then switch off Ask Before Running; the Automation will now run without asking for permission. There's also a new Notify When Run option.

**4** TV app art choices

In the TV app, you can now change the art displayed in the Up Next section. By going to Settings > TV > Up Next Display, you can choose between seeing a still frame from the TV show or film, or its poster art.

**6** Notes in iCloud Keychain

iOS and iPadOS 15.4 now allows you to add Notes in iCloud Keychain. It means you can leave yourself a reminder about what a particular service is, or any other info related to the account you might want to store securely.

**8** Universal Control

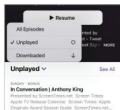
Universal Control enables you to control your Mac and iPad using just a single mouse and keyboard. On an iPad, go to Settings > General, then tap AirPlay & Handoff, and turn on 'Cursor and Keyboard'.

**Small things...**

Other notable changes and improvements in the latest update

**1** App Store notifications

A new notifications panel in the App Store enables you to opt in to alerts for New Features & Updates, and Recommendations & Offers.

**2** Podcast filters

There are new podcast options for shows you are subscribed to that filter Unplayed and Downloaded Episodes.

**3** New emoji

As with all iOS/iPadOS releases, iOS/iPadOS 15.4 introduces new emoji. There are 37 additions this time around, including a melting smiley face, a face with hands covering the eyes, and there are handshakes using hands with different skin tones.



PART 2 OF 3

# Master Macro mode

Capture eye-catching shots and see the world afresh from your iPhone

## IT WILL TAKE

> 15 minutes

## YOU WILL LEARN

> How to capture sharp shots of small subjects

## YOU'LL NEED

> iPhone 13 Pro or Pro Max; Halide MK 2.7.5 (Free, offers IAPs)



**Macro photography enables you to capture a close encounter with a wide range of objects, plants or creatures.**

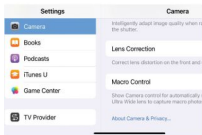
With the release of the iPhone 13 Pro range (and iOS 15.2), you can snap details that aren't easily visible to the naked eye - such as a pollinating bee's proboscis or flakes of peeling paint on a rusty sign.

Unlike older iPhone models, the Ultra Wide camera on the iPhone 13 Pro and Pro Max has an autofocus capability that enables you to

capture sharp macro shots from about an inch (or two centimetres) away from your subject.

We'll demonstrate how to shoot a variety of subjects using Macro mode and capture the classic background blur (bokeh) that's the hallmark of macro photography. Your iPhone 13 Pro (or Pro Max) will automatically switch to the Ultra Wide (0.5x) camera if you get very close to your subject and this can change your shot's composition, so we'll show you how to toggle Macro mode on and off for more control. **George Cairns**

## HOW TO Trigger the Macro mode >



### 1 Macro settings

Macro mode is triggered automatically when in close proximity to your subject. To have the option to toggle it on or off, go to Settings > Camera and swipe down to Macro Control. Tap the toggle button to turn it green.



### 2 The big picture

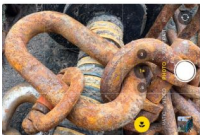
Macro photography opens up a new world of texture and detail. From a distance this vintage sign has a retro charm, but if we take a closer look we can capture more abstract textures such as peeling paint and rust.



### 3 Get close

Here we've set the iPhone to use the Wide camera. As we move the iPhone to 2cm from our subject it automatically switches to the Ultra Wide camera, and the flower-shaped Macro icon appears. Tap to snap a macro shot.

## HOW TO Capture a macro bokeh >



### 1 Add depth

The metal sign in the previous step was flat. By shooting a subject that has more depth (such as chain links here), you can capture a background blur that helps the eye focus on a particular foreground detail.

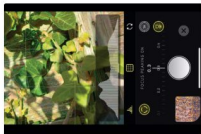
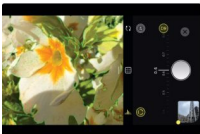
### 2 Toggle macro

To see the difference between the results produced by the Ultra Wide and the Wide cameras, simply tap the flower-shaped Macro icon to toggle it on and off. When it's off, the Wide (1x) camera can't focus when 2cm away from the subject.

### 3 Sharp shooter

Tap on a particular object in the image (such as a chain link) to set the focal point. Place the main subject in the centre of the frame as this is where the Ultra Wide (0.5x) camera will be at its sharpest focus.

## HOW TO Use third-party macro solutions >



### 1 Software solution

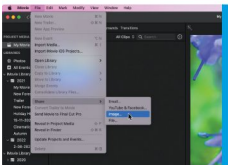
On older iPhones, shoot macro pictures using Halide MK 2.5. In manual focus mode, tap the flower-shaped Macro icon to switch to the lens with the closest focal distance. Fine-tune the focus with the focus dial.

### 2 Focus peaking

It can be a challenge to get the key subject looking sharp in a macro shot because of the shallow depth of field. Halide MK 2.7.5 has a focus-peaking tool that outlines the sharpest areas in green to help you stay focused.

### 3 Hardware

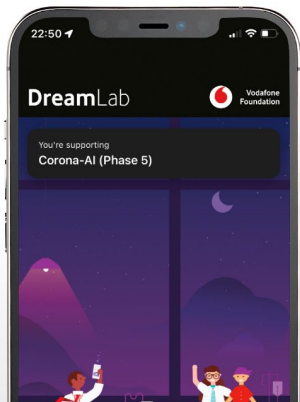
iPhone X, XR and 11 users can use the ShiftCam MultiLens Case's 10x and 20x macro lenses ([shiftcam.com](http://shiftcam.com)). These produce classic macro shots that have a beautiful background blur (as you can see in our main bumble bee image).



## Macro footage

### Capture small, fast-moving subjects in macro clips >

Subjects such as insects don't stay still for long enough to snap a sharp macro shot. Set your Camera app to Slo-mo mode. In Slo-mo the iPhone 13 won't automatically switch to Macro mode but you can tap the 0.5x icon to use the Ultra Wide camera. Tap record and film your insect from as close and you can get, following it as it flies. On playback, what would be a jerky handheld clip in real time will now look steadicam-smooth in slow motion. You can share the sharpest frame as a still macro image using File > Share > Image in iMovie.



# Power scientific research

Fight Covid and other scientific investigations with this clever app

## IT WILL TAKE

> 5 minutes  
to set up

## YOU WILL LEARN

> How to help solve  
scientific problems  
using your devices

## YOU'LL NEED

> DreamLab (free), iOS  
13.1 or later, macOS  
10.15 or later

As long as it's  
charging and  
unlocked, your  
device can be  
put to use



The world is full of complex scientific problems, with even more thrown into the mix thanks to Covid. Even at the

planet's foremost research facilities, the process of solving these issues can be slow, and helping out can obviously seem like an impossible task when all you have in your arsenal is an iPhone and a Mac.

## Currently powering



You can find out how much your device has helped your chosen research project on the Contribution tab.

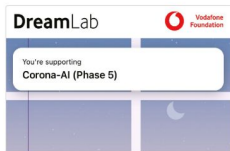
Thankfully, you don't need a room full of million-dollar supercomputers to help. All you need is the DreamLab app, a compatible Apple device, and a bit of time where you can let it work uninterrupted. As long as it's charging and unlocked, your device can be put to use.

## Algorithm ability

DreamLab is a distributed computing platform. It uses the processing power of thousands of devices - including your own - to help tackle scientific problems. In the case of DreamLab, that power helps speed up the algorithms hard at work at Imperial College London, enabling them to find potential cures faster. Thanks to the power of the crowd, you can do your part in helping the fight against Covid and cancer.

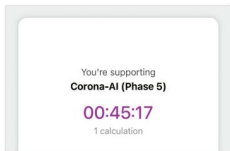
DreamLab's developers suggest you run the app overnight while you sleep, but you can run it whenever you have some free time and don't need to interact with your device. And if you have a spare iPhone lying in a drawer, DreamLab can give it a new lease of life helping to power vital research. **Alex Blake**

## HOW TO Help scientific research >



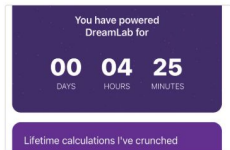
### 1 Quick start

Getting started in DreamLab only requires a couple of taps. On the app's home page, you will see which project is automatically chosen. In this case, it's Corona-AI (Phase 5). Let's leave that one selected.



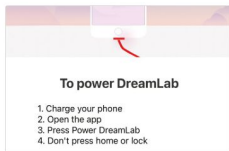
### 3 Hands-free operations

While DreamLab is working, leave your device alone. If you close DreamLab, lock your device, or stop it charging, DreamLab's session will also end. This can also happen if your internet connection is interrupted.



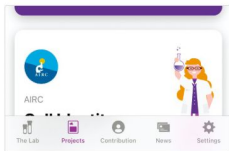
### 5 Your contribution

The Contribution tab shows how long you've powered DreamLab and how many calculations your device has crunched. It also shows your chosen project's progress. To see the latest goings-on with DreamLab, tap News.



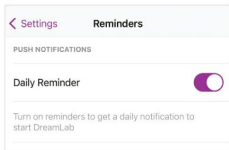
### 2 Connect to power

DreamLab only works when your device is connected to power and unlocked. When you're ready, tap 'Start session', connect a power cable or use a wireless charger, then tap 'Got it!'. DreamLab will now get to work.



### 4 Project selection

At the bottom of DreamLab's home page, tap Projects. Here, you can choose what problems to help solve. At the time of writing, we could choose the Corona-AI and Cell Identity Hunter projects. Tap one for more info.



### 6 Set a reminder

Tap Settings > Reminders for a daily prompt to start using DreamLab. Tap the time box to set when the alert is sent. The Settings tab also lets you set data usage limits (for Wi-Fi and mobile data separately) and more.



### Jargon buster

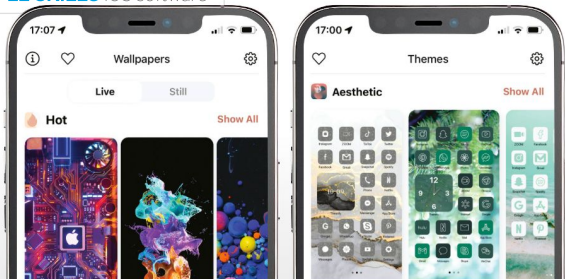
> DreamLab's research involves calculations. It downloads small parts of large data sets, crunches the numbers, then sends off the results.



### Genius tip!

> You can also run DreamLab on your Mac. Plug in your computer and leave it undisturbed while DreamLab runs.





# Tailor your Home screen

Give your device a whole new customised look in just a few taps

## IT WILL TAKE

> 5 minutes

## YOU WILL LEARN

> How to install and customise themes, icons, wallpapers, and widgets with Themify

## YOU'LL NEED

> Themify (premium subscription optional), iOS 14 or later



Ever since iOS 14 brought widgets to the iPhone and iPad, people have been looking for ways to spruce up their Home

Screens with fresh new looks. With the Themify app (free, with IAPs) close at hand, that's easier and quicker than ever before.

In this guide, we'll show you how to customise your Home Screen so it's truly personal to you. Whether that means adjusting a few app icons and adding a video wallpaper or going for a complete visual makeover,

Themify makes creating a new style quick and, dare we say it, even fun.

Themify's free version gives you plenty of content, but its premium version unlocks even more, including exclusive themes and extra widgets. It also removes ads and lets you install more than five app icons at a time.

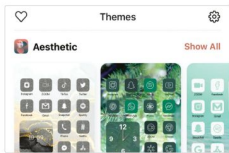
Whether or not you decide to pay for the full version, Themify is a great way to refresh your device's style without requiring a ton of fiddly hacks and workarounds. Let's find out just what it can do. **Alex Blake**

## HOW TO Sort your Home Screen >



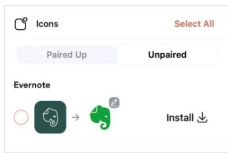
### Genius tip!

> When viewing a theme, tap the heart to save it to Favorites. To find your saved themes, tap the heart on the Themify home screen.



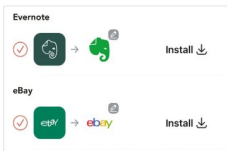
### 1 The Theme tab

At the bottom of Themify's home screen is the Theme tab. Here you will find pre-made designs that marry icon sets, widgets and wallpapers for a total Home Screen overhaul. Tap a theme you like the look of, then tap Try.

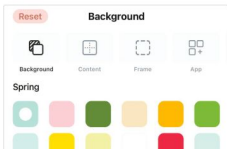


### 2 Unpaired icons

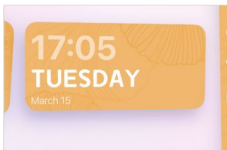
You will see the theme's icons paired to each app. For any not done automatically, tap Unpaired, then tap the '+' and choose an app. Tap Install. Safari will open. Tap the Share button, then 'Add to Home Screen'.

**CONTINUED...** Sort your Home Screen >**3** Add multiple icons

To add icons for multiple apps at once, choose your icons, then tap the checkboxes next to the apps. Now tap Install Selected Icons and download the icon profile. Go to Settings > Profile Downloaded to install it.

**5** Icon Maker

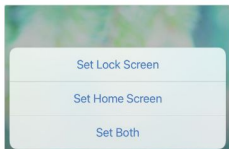
Tap Icons, then tap Icon Maker. Tap Background and choose a colour, then tap Content to choose a logo for the icon. Give it a frame if you like, then tap App to assign it to an app. Tap Save when you're finished.

**7** Add some widgets

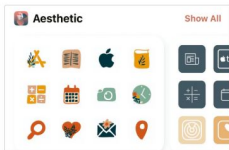
Back in Themify, tap Save next to Widgets. On your device's Home Screen, long press an empty space, then tap '+'. Choose Themify, pick a widget, then tap Add Widget. Widgets are listed in the order you saved them.

**4** Quick tweaks

To create custom icons, choose a theme, then tap Customize. Tap Wallpapers, Widget Font, or Widget Color to make some quick changes to the appearance of the theme. We'll get more in-depth with Icons in the next step.

**6** Set a wallpaper

Let's add a wallpaper. Next to Wallpaper at the top of the theme's Try page, tap Save. Open Photos, tap the Share button, then tap Use as Wallpaper. Adjust the fit, tap Set, then choose Lock Screen, Home Screen, or Both.

**8** Individual elements

If you'd rather just install icons, wallpapers, and widgets without a whole theme, you can simply tap one of the bottom buttons on the app's home page. The process is similar to that used when installing themes.

**Jargon buster**

> Unsurprisingly, Themify is built on **themes**. These combine icons, wallpapers, and widgets, all united by a similar aesthetic or visual style.

**Genius tip!**

> Tap the gear icon to adjust Themify's settings. Here, you can change formats used on widgets and reduce motion when tapping on app icons.





HOW IT WORKS

# Apple Magic Trackpad

Apple mice may not be perfect - but the Magic Trackpad is the future

**YOU WILL LEARN**

► How the Magic Trackpad works, and how to use Multi-Touch gestures

Simple two-finger gestures are easy to remember and use

**Key fact**

► Apple is increasingly pitching the iPad as a device that can be used for serious work, and the iPad has been able to use mice and trackpads since iOS 13.4. Multi-Touch gestures work well on iPad too, such as swiping up with three fingers to go to the Home screen, and swiping sideways with three fingers to switch between apps.



**For all its legendary design skills, Apple has managed to make some truly terrible mistakes with its mice (and**

**keyboards) over the years.** The infamous 'hockey puck' mouse was a bit of a laughing stock back in 1998, and even today the current Magic Mouse is marred by Apple's bizarre decision to put the charging port on the underside of the mouse - which means that you can't actually use the darn thing while it's charging. However, Apple has also come up with a really attractive alternative to the traditional computer mouse in the form of its Magic Trackpad.

Of course, the MacBook range and other PC laptops have been using trackpads since the mid-90s, but these early trackpads were quite small and still had to provide separate buttons that worked like the buttons on a conventional mouse. It was only in 2008 that Apple introduced the MacBook Air with a larger, button-free trackpad that also supported Multi-Touch gestures, such as pinch-to-zoom.

Then, in 2010, it released the first Magic Trackpad, which was a separate, self-contained trackpad that could sit on your desk and be used with desktop Macs as well (and, more recently, with iPads too). The Magic Trackpad 2 followed in 2015, providing a much larger trackpad surface to work with, as well as introducing new Force Touch features.

The latest version - simply known as the Magic Trackpad once more - arrived in 2021, although in reality this was really just a cosmetic update designed to match the look of the latest iMac models.



The Lightning connector on the back is used for charging, but lets you use it as a wired trackpad too.

**Two-finger salute**

Modern trackpads use electrical sensors underneath the surface of the trackpad to detect the movement of your finger - or multiple fingers - so that you can control the movement of the cursor on your computer screen. The ability to detect two or more fingers is generally referred to as Multi-Touch, and Apple's Magic Trackpad supports a variety of Multi-Touch gestures, such as pinch-to-zoom, and rotating two fingers in order to rotate an image. You can also swipe with two fingers to scroll up and down or side-to-side, and if you're addicted to checking your Notifications then a two-finger swipe from the right-hand edge of the trackpad (not the Mac screen) will open Notification Centre for you.

These simple two-finger gestures are easy to remember and use, and have proved popular with many people, but there are more complex gestures that use three or four fingers as well. These gestures aren't quite so well known, simply because they're a bit fiddly to use at times, but if you open System Preferences on your Mac (running macOS 10.11 or later) and select Trackpad > More Gestures, you'll see a list of gestures that are available. For example, you can swipe down with three fingers to activate Exposé, which



Now on its third-generation, the Magic Trackpad is a great alternative to a conventional mouse.

## The Taptic Engine >

**The Magic Trackpad doesn't have any buttons or moving parts, but you can still feel – and hear – the trackpad 'click' when you press it.**

This technology is known as haptic feedback, and it enables devices such as trackpads to create the sensation of movement in response to actions such as pressure from your fingers.

Apple's version of haptic feedback is called the Taptic Engine, and it uses magnetic coils – similar to those used in speakers and headphones – to create vibrations that make it feel



The copper wire coils form electromagnets that flex against a steel bar located on the underside of the trackpad.

as though the trackpad is responding to your touch. If you turn the Magic Trackpad off and press down on it, you can feel that the surface of the trackpad is fixed in place and doesn't move. But when it's turned on again,

the vibrations of the Taptic Engine create the sensation that the trackpad is moving when press down on it.

➤ System Preferences > Trackpad also enables you to turn on Silent Clicking which mutes the sound the trackpad makes when you press on it.

shows all the open windows for the current application, but the more advanced four-finger gestures are not for everyone.

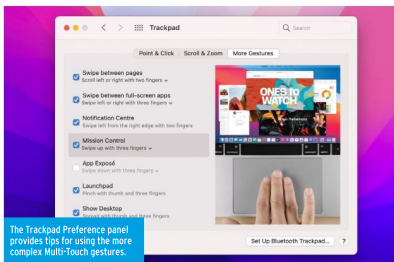
## Feel the Force (Touch)

As well as enabling you to perform Multi-Touch gestures, a modern trackpad also has to be able to recognise when you press down – performing the equivalent of a mouse-click – so that you can select a file or folder, move it around on screen, or perform other tasks.

The first version of the Magic Trackpad had an old-fashioned mechanical design that simply treated the entire surface of the trackpad as one large button that you could push down to perform a mouse click. However, the Magic Trackpad 2 introduced a pressure-sensitive Force Touch sensor that has no moving parts, but is able to detect different degrees of pressure.

As well as being able to tap on a file to select it – or double-tap to open it – you can use Force Touch to perform additional tasks by applying different amounts of pressure. A quick tap still acts like a simple mouse click, while pressing and holding allows you to drag-and-drop. However, pressing down more firmly activates Force Touch, which can perform a variety of different tasks depending on how you use it.

Using Force Touch on a document or photo file activates your Mac's Quick Look feature, so you can see a preview of the file without having to open it first. You can also use Force Touch to click a link on a web page and see a quick preview of the linked page, while using Force Touch to select a word in



a text document enables you to quickly look up its definition in your Mac's built-in dictionary.

But for all its versatility, the Magic Trackpad hasn't changed or improved very much in recent years, suggesting that it's probably gone about as far as conventional touch-technology can go. But, of course, we're all waiting for Apple to unveil a new VR headset at the moment, and Apple has recently registered patents for wearable 'force sensors' that can be used in VR gloves or even shoes, enabling the wearer to control objects in virtual reality.

So, rather than waiting for Magic Trackpad 3, it may be that the next version of Force Touch technology breaks away from the desktop at last and takes the next great leap into virtual reality. **Cliff Joseph**

## Key fact

➤ Unlike the daft design of the Magic Mouse, which can't be used while charging, the Magic Trackpad can be charged and used at the same time – hallelujah! Even better, you can also turn Bluetooth off while the USB charging cable is connected and just use it as a wired trackpad – great if you're security-conscious and prefer to avoid using Bluetooth altogether.

# GENIUS TIPS

EDITED BY HOWARD OAKLEY >



## EXPERT ADVICE

Our resident genius solves your Mac and iOS problems



Contact us

Email your queries and your questions to [genius@macformat.com](mailto:genius@macformat.com)

### You have custom access

Select your Home folder, or any of the standard folders inside it like Documents, and Get Info. In the lowest of the sections, Sharing & Permissions, does it report that “You have custom access”? Do you know what that means?

Custom access is Apple’s jargon to let you know that macOS has set an Access Control List (ACL), in this case to prevent anyone from deleting those folders. If you’re good with Terminal, you can use the command `ls -lled ~`

to see the details that the Finder is too coy to reveal. But oddly Apple doesn’t explain any of this. If you’ve invested in a utility like TinkerTool System ([bresinck.com](http://bresinck.com)), you can view and change ACLs with ease. While they can get you into trouble if you’re not careful, it’s frustrating that Apple uses them but doesn’t trust us to know about them.

## How a processor can reach 1,600%

What does CPU % mean in Activity Monitor, and how can it exceed 100%?

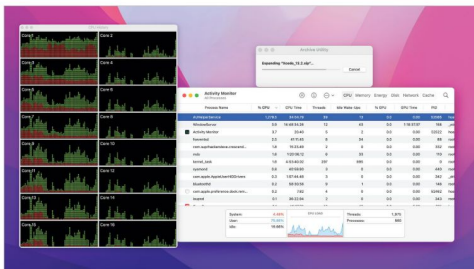
by CHRIS PARRY

Although Apple doesn’t provide any explanation, this figure seems to derive from what’s known as active residency, the percentage of processor cycles that each core in the CPU is processing instructions rather than being idle. The number shown is the total of those percentages for each core, so if your Mac has eight cores, the maximum comes to 800%.

There are two complications. Intel cores can use hyper-threading to effectively double their throughput when under stress. Each core

can then run up to 200%, so those eight cores could come to a total of 1,600% when the pressure is on. ARM cores in MI chips don’t have hyper-threading, instead their frequency or clock speed can change, most often seen in Efficiency cores. Unfortunately at present no allowance is made for this, so 100% could be at a frequency of less than 1GHz, or over 2GHz, which represents a big difference in work done.

So CPU percentage is an approximate indicator of the total workload performed by your Mac’s processor, on a scale from 0 to over 200%, depending on the number of cores, and whether they’re hyper-threaded. More accurate figures are available from the expert’s command-line tool Power Metrics.



This eight-core Xeon processor in an iMac Pro has almost reached 1,300% CPU as its cores go fully hyper-threaded.



# iOS software >

Swipe away your touchscreen troubles and rekindle your love of Apple's mobile devices

## Quick-fire questions >

### How to remove an app from the App Library?

> As of iOS/iPadOS 15.4 you can't remove an app from the App Library without deleting it altogether. All apps installed, even those offloaded to iCloud, are automatically added to the App Library. Touch and hold an app's icon and you're given the option to delete it altogether, not to remove it from the library.

### How to stop an app crashing repeatedly?

> Removing it and reinstalling is often curative, but deletes all its data. Less destructive is offloading it by tapping Settings > General > iPhone Storage > [app name] > Offload App. A minute later, tap Reinstall App, and it may be fixed. Also check for updates in the App Store.



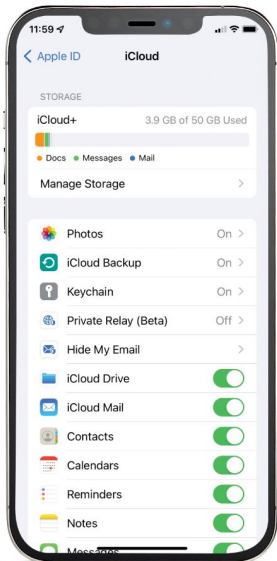
## Where to back up to?

**Q** Should I back up my iPhone to iCloud or my Mac?  
by MARY BRIDGER

**A** It's really important that you choose one or the other, although which comes down to personal preference and convenience. The most immediate difference between them is that backups made to iCloud use up some of your paid-for storage allowance. If you're already using most of that and would need to increase your subscription, that's a significant step. Although you don't pay monthly for storage on your Mac, you still need free space there.

Both types of backup exclude most of the data already stored in iCloud, such as Contacts, Calendars, Notes, iMessages and text (SMS and MMS) messages. Neither do they include data from Apple Mail, or content purchased through the App Store, Music or Books. iCloud backups don't include Activity or Health data, although they're always encrypted; if you encrypt your backup to a Mac, that will include both.

Accessibility is another concern. So long as you can hook up your iPhone to a decent Wi-Fi connection, you can back it up and restore it anywhere. If your backups are on your Mac and that's sick or unavailable, then you have no backups. On the other hand, you control how long you keep your backups on your Mac, which you can archive to more permanent local storage.



To use iCloud Backup, you need ample free space in your storage allowance and a good Wi-Fi connection.

Many users have been caught out by the fact that iCloud backups are only kept for 180 days after you stop or disable iCloud Backup, and there's no option to retain them any longer than that even when you have space.



# Mac hardware >

We help to solve your hardware hassles, from interrupted upgrades to running diagnostics

## Quick-fire questions >

### Is it safe to use a vacuum cleaner on my Mac?

> Cleaners are useful for removing dust and gunk which accumulates in cooling slots, through which air is ducted to stop the internals from getting too hot. It's wise to do this before the summer. Don't apply excessive suction, though, and use a small nozzle with great care.

### How to check video memory use on my M1 Pro?

> Unlike Intel Macs, M1 models don't have dedicated video memory, as their GPUs access main memory. You can check how much is allocated for use by the GPU, and how much is being used, with CPUSetter from [bit.ly/mac378cpusetter](http://bit.ly/mac378cpusetter), but there's nothing that you can do to change it, as memory is fixed.



**Aim to minimise storage space use for virtual memory, as indicated by Swap Used in Activity Monitor, and the VM volume.**

Process Name	Mem.	Threads	Ports	PID	User
WindowServer	395.4 MB	21	2,425	383	launchd
Web	10.10 MB	5	496	1007	rootless
System	55.5 MB	4	482	1210	rootless
Kernel	502.5 MB	7	276	1437	rootless
App Store	86.0 MB	5	353	1424	rootless
Messages	71.5 MB	4	369	1336	rootless
Disk Utility	64.9 MB	4	251	1480	rootless
Finder	64.4 MB	5	431	374	rootless
Dock	63.4 MB	3	357	1489	rootless
System Preferences	60.9 MB	5	337	1242	rootless
Activity Monitor	50.7 MB	7	476	1432	rootless
Calendar	52.2 MB	4	258	1312	rootless
Services	47.5 MB	3	67	1220	rootless
SystemPolicyAgent (System Preferences)	42.9 MB	4	295	1202	rootless
System	19.1 MB	5	168	1434	rootless

**MEMORY PRESSURE**

Physical Memory	32.00 GB	App Memory	6.23 GB
Memory Used	7.55 GB	Virtual Memory	3.50 GB
Cached Files	8.44 GB	Compressed	0 bytes
Swap Used	0 bytes		

**Storage Information:**

- Macintosh HD: 16.76 GB used, 121 GB free
- VM: 23.6 GB used, 474.8 GB free
- Product: 1.15 GB used, 1.66 TB free

**Storage Details:**

- Volume count: 5
- Type: APFS Container
- Capacity: 3.7 TB
- Physical storage: 484GB2
- File: 1.68 TB
- Connection: Apple Feltic
- Used: 108.32 GB
- Device: d463

## More memory or storage in an M1?

### When I choose my new M1 Mac, should I get more memory or a bigger SSD?

by RODDY MARTIN

Apple silicon models come with special high-speed memory mounted in the M1 chip carrier which can't be upgraded or replaced, and their internal storage is soldered in, again for performance and security. While you can always add external storage, it's essential to get both right when you order.

M1 Macs use memory differently from Intel models. They don't have any graphics memory, as all parts of the chip including the GPU share main memory to deliver the best performance. This doesn't mean that you have to add on an allowance for graphics use, like

the dedicated memory in graphics cards, as they use memory much more efficiently. But you do want to avoid them using 'swap' space in storage. For most users, 16GB is a good minimum, rising with your need for more heavyweight apps.

Although it's possible to put your Home folder on external storage, and some external SSDs make claims of speeds approaching those of M1 internal SSDs, unless they have active cooling systems with fans they'll undergo thermal throttling when used hard.

Apple's pricing may seem high, but its SSDs are high performance, and larger SSDs not only perform better but last longer too. What you save by skimming on internal storage could increase wear and shorten life, as well as being more work to manage. For most users, a minimum of 1TB is a good starting point.



Image credit: iFix.com

Replacing internal storage of most iMacs isn't easy, and should be left to a trained technician to perform.

## Replace a Fusion Drive

**Q** What should I replace the Fusion Drive in my iMac 27-inch 2017 with?  
by BRENDAN SMITH

**A** As your Mac is still supported by Apple, you should be able to obtain a replacement Fusion Drive, although that will need to be fitted by an Authorised Service Provider, and will possibly cost close to the resale value of the Mac. A better option, available at lower cost, would be to replace it with an SSD, which will also be faster. The

most common problem doing that is the Mac then struggles to update its firmware with its new internal storage. You may be able to sort this by installing new versions of macOS on an external disk, which also updates the firmware in the Mac itself, but some Macs refuse.

Either way, replacement requires tricky internal surgery, as the display has to be separated and left speaker moved, as shown in iFixit's guide at [bit.ly/mac378imacdrive](http://bit.ly/mac378imacdrive). You'll almost certainly want to pay a qualified Apple technician to do that for you.

### How to repair a scratch on my MacBook Pro screen?

> Because of its materials and structure, you can't do anything effective to remove scratches. Cleaning with solvent can damage its coating, petroleum jelly smears, and toothpaste is abrasive. Decide whether to live with it or pay for a replacement.

### How to test whether my Mac's memory is faulty?

> Simplest is extended testing in Diagnostics mode, engaged by holding the  $\square$  key during startup (Intel), or through Recovery (M1). Try this with your Mac cold, first thing, and when warm later on. Micromat offers tests in Techtool Pro, and its dedicated ATOMIC.

## Is the internal SSD wearing out?

**Q** Is there a reliable way to check whether my Mac's internal SSD is wearing out?  
by DAVID WRIGHT

**A** Although macOS does monitor the condition of internal storage using SMART status indicators, the most information it gives about this is in Disk Utility, where it simply reports the disk status as 'verified', which is of no help in assessing SSD wear.

There are two ways to estimate wear in an SSD. One is to check the disk's SMART health indicators such as Life Percentage Used, which should be available for all recent Apple internal SSDs. The other is to work out what proportion of its life has been used

according to the amount of data written to the drive. For either of these you'll need a third-party app such as DriveDx from [bit.ly/mac378drivedx](http://bit.ly/mac378drivedx).

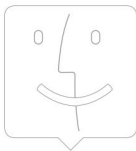
Each storage unit in an SSD can only be written to around 10,000 times. That means that a 500GB SSD can have 10,000 x 0.5TB written to it before it's likely to fail through wear. If the indicated Data Units Written is 1,000TB, then it's roughly 20% of the way through its life.

Both of those options are also available for most Thunderbolt disks,



Specialist third-party disk utilities like DriveDx are needed to discover how worn out your Mac's SSD is.

but not for those connected by USB, which require a free kernel extension installed before their SMART indicators can be read.




# macOS >

Shine a spotlight on the solutions to your most irritating Mac problems

## Quick-fire questions >

### How to archive important messages in Mail?

> Select the messages, -click and select Archive. To free up storage create a new mailbox, and move messages to that before exporting that mailbox.

You can also set up Smart Mailboxes to automate this, and apps like Moth's Mail Archiver at [mothsoftware.com](http://mothsoftware.com) are even better.

### Can I stop apps hogging my M1 Mac's CPU?

> Most user apps run on the M1's Performance cores. When they hog them, particularly with long tasks to perform, you can force them to be run on Efficiency cores instead, which are slower but use less power and don't get in the way of other apps. This is a feature of St. Clair Software's App Tamer from [bit.ly/mac378apptamer](http://bit.ly/mac378apptamer).




## App Dock icons don't work properly

**Q** I normally open recent documents through an app's Dock icon, and clear that list in the app itself. Why doesn't that work the same with apps like NeoOffice, LibreOffice and OpenOffice?

by DAVID LISTER

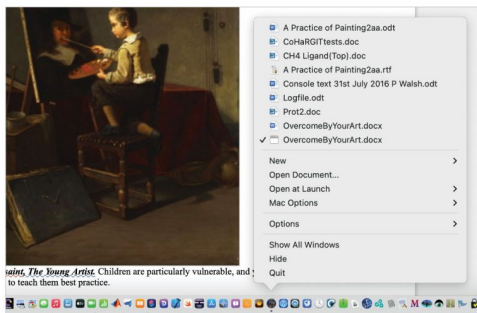
**A** Normally, when an app opens a document, details of that are recorded by Launch Services, part of macOS which operates many of the features associated with the Finder and common human interface. Launch Services adds that to the list of documents opened by that app, and puts it into the list shown in the app's Open Recent menu command.

Not only is this accessible within the app, but those recent documents are also listed at the top of the menu shown when you -click on that app's icon in the Dock. That lets you

open any of those documents immediately, without having to open the app first then use its Open Recent menu command.

For this to work, apps have to work with Launch Services, something built into support in the AppKit framework in macOS. Some apps, like OpenOffice and its descendants LibreOffice and NeoOffice, bypass that mechanism and provide their own replacement services for opening recent documents. Because those aren't integrated with Launch Services, they don't work outside the apps, most obviously in the Dock. As this can't be fixed readily in the apps' code, nor altered by the user, it looks as if it's here to stay in those apps.

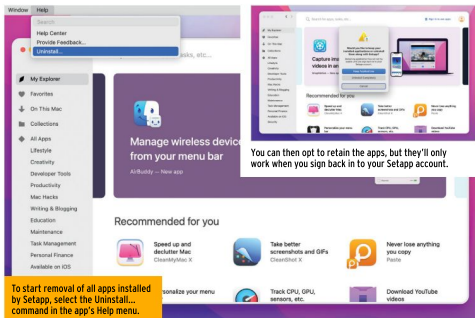
As with any bug in an app, you should report it to the developer, but in this case they're probably only too well aware of this particular shortcoming.



paint, *The Young Artist*. Children are particularly vulnerable, and to teach them best practice.

Some apps like NeoOffice don't fully support macOS features for managing recent document lists in the Dock.





To start removal of all apps installed by Setapp, select the Uninstall... command in the app's Help menu.

You can then opt to retain the apps, but they'll only work when you sign back in to your Setapp account.

## How to wrap text to fit cells in Numbers?

> **⌘-click** on a single cell, and select Wrap Text in the shortcut menu. For whole rows, columns, or tables select the area then click the Text tab in the Format sidebar. The Style button offers Wrap Text in Cell.

## How to un-Setapp

**Q** About 40 new apps suddenly appeared in Launchpad, none of which I installed. When I click on them, I'm told I need a Setapp account. How to remove them?

by DAVY HENDERSON

**A** This is probably because you inadvertently installed Setapp, which is a subscription service to those apps. If you can find the Setapp app in your Applications folder, open it and use

its Uninstall command in the Help menu to remove it and installed apps.

If that doesn't work, you'll need to try a manual removal. You'll find there's a full list of all the components the service could install in [bit.ly/mac378setappfiles](http://bit.ly/mac378setappfiles).

These include the contents of ~/Library/Application Support/Setapp, and two launch agents whose names start with com.setapp in the ~/Library/LaunchAgents folder.

You can also remove any of the apps installed by Setapp in the normal way.

## How to start chapters with drop caps in Pages?

> Select the letter you want to set as a drop capital, then select the Style section in the Format sidebar. Tick Drop Cap and set style, depth and options. You can also then add this as a new style to apply it easily at the start of each chapter.

## Stop Skype Integrated Calling

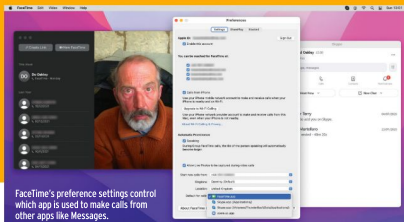
**Q** Whenever I click to make a Call in Messages, instead of FaceTime opening and making my audio call as I'd expect, Skype opens to make my call. How can I stop that from happening?

by MARTINA WATSON

**A** This is a feature in Skype sometimes referred to as Integrated Calling, in which the Skype app diverts calls which you had intended to go through FaceTime. It has long troubled iPhone users, and as a result can now be disabled on iOS and iPadOS devices. On the Mac, its equivalent is a control tucked away in FaceTime's preferences, which you almost certainly haven't changed, as it appears that Skype may change this for you when it's installed.

To correct this, open the FaceTime app's Preferences dialog and select its Settings tab. Right at the bottom is a menu to set Default for calls; change that from Skype.app to FaceTime.app, and you should be able to use Skype, Messages and FaceTime properly again. If that doesn't work, it might help if you sign out of Skype first,


then change that preference setting in FaceTime. Older versions of the Skype app could also be more difficult, but if you're running the current release (8.81 or later) and still can't disable Integrated Calling, then you may be forced to make a choice between using Skype and uninstalling it altogether.



FaceTime's preference settings control which app is used to make calls from other apps like Messages.

> Email your queries and your questions to [genius@macformat.com](mailto:genius@macformat.com)





# The ultimate iPad buyer's guide

Written by Cliff Joseph >

**With a range of screen sizes and more power than ever, there's now an iPad to suit everyone's needs**

**W**hen the iPad first launched in 2011, it was very much intended as a device for entertainment, rather than work, with a focus on web browsing, music, video and FaceTime.

More recently, Apple has attempted to position the iPad – especially the iPad Pro – as a versatile and lightweight alternative to a laptop, providing enough graphical horsepower for serious design and video-editing work.

Last year's adoption of the M1 processor in the 11- and 12.9-inch iPad Pro – and now the 10.9-inch iPad Air in 2022 – takes the iPad into entirely new territory. A decade on from the iPad's inception, these three iPad models now provide the same levels of power as the M1-based 13-inch MacBook Pro, Mac mini or 24-inch iMac, making them a genuine alternative to a MacBook Pro or even a larger desktop Mac.

2021 saw the continuing convergence of iPadOS and macOS, with features such as Universal Control promising to make the iPad a versatile companion for your Mac. Admittedly, Universal Control only arrived with the macOS Monterey 12.3 update in March 2022, but your Mac and iPad can now share the same mouse and keyboard while you work, and even enable you to quickly drag and drop files from one device to the other.

Of course, not everyone needs a top-of-the-range iPad with M1 chip; the standard 10.2-inch iPad still provides an affordable option for entertainment and web browsing. And, for people who need to opt for an ultra-portable device, there's the iPad mini, with its 8.3-inch screen and max 297g weight.

The current iPad range really does have something for everyone, so read our Ultimate Guide to find the iPad that's right for you.

## Choose your size

The iPad now comes in four models with five different screen sizes

**T**here are now four different iPad models available, ranging from the 8.3-inch iPad mini to the 12.9-inch iPad Pro. So the first thing to do when buying a new iPad is simply to decide on the screen size that you need.

The iPad mini's compact design is ideal for travelling, and the A15 Bionic chip provides plenty of power. However, the 8.3-inch display doesn't lend itself to precise graphics or video-editing work, and the small on-screen keyboard isn't ideal for typing anything longer than a few emails. It's a great option for entertainment on the go, though, from simple web browsing and ebooks, to gaming or watching a few films on a long journey.

### Portable pad

If you don't need an ultra-portable design, the 10.2-inch iPad is the most affordable option. The size and weight means it's still very portable, and is great for most forms of entertainment, and it'll enable you to type up a storm in Pages, Mail or other apps. Its A13 Bionic chip is a few years old, though, and doesn't have the graphical horsepower needed for the latest games or top-level graphics apps.

The next step up in screen size is the 10.9-inch iPad Air - although this is where things get a bit tricky. The

screen size and resolution of the iPad Air are very similar to those of the 11-inch iPad Pro, and both models have the same M1 chip, which provides strong performance for graphics, design and video work. However, the iPad Air is limited to 256GB storage, while the iPad Pro can go up to 2TB. The iPad Pro also includes Face ID and a Thunderbolt 4/USB 4 connector, while the iPad Air sticks with USB-C.

And, of course, the iPad Pro is also available with a 12.9-inch screen. It's the heaviest iPad of the lot, but it's still only around half the weight of an M1 MacBook Air. It has a higher screen resolution than the MacBook Air too, making it a great option for pro-level graphics work on the go.

**The screen size and resolution of the iPad Air are very similar to those of the 11-inch iPad Pro**

### Video values

Professional video editing work uses a standard known as P3 - or DCI-P3 - to ensure that video files display consistent colours on a variety of different devices. Most iPad displays now support P3, so they're well suited to graphics and video work.

Aside from display resolution and storage, the screen size and weight of the iPad will play a big part in your decision process.

### Display differences

**The entry-level iPad has a Retina display with 2160x1620 resolution, but the latest iPad models step up to newer Liquid Retina technology.**

A Liquid Retina display increases the screen resolution to the point where you can't see the individual pixels on the screen anymore - up to 2732x 2048 in the 12.9-inch iPad Pro. This provides visual quality that is similar to, well, reading an issue of *MacFormat* printed on paper.

# Which processor?

The chips in the latest iPads are as powerful as those in desktop Macs

**T**he CPU - central processing unit - is the heart of any computing device, providing the speed and power that it needs to perform a variety of tasks. For many years, the iPad was limited in power compared to the various desktop and laptop Macs, as the iPad's compact design simply couldn't handle the power-hungry Intel processors used in the Mac range, or the heat generated by those powerful processors either.

All that changed when Apple began to develop its own range of Apple silicon chips, starting with the M1 system-on-a-chip (SoC) used in most of the latest Macs. Apple also introduced the M1 to the iPad range with the 11-inch and 12.9-inch iPad Pro in 2021, which meant that the iPad Pro could now provide the same impressive performance as the M1-based MacBook Pro, Mac mini and 24-inch iMac. The iPad Air was also updated recently, gaining its own M1 processor in early 2022. However, the current ninth-gen iPad and sixth-gen iPad mini still have older A-series processors, so it's worth thinking about your choice of processor when choosing a new iPad.

The ninth-gen iPad is very much the affordable, entry-level option, and is powered by an A13 Bionic

chip that is a few years old now. It's no weakling, as the A13 Bionic is a 6-core processor running at 2.6GHz, along with an 8-core Neural Engine that handles advanced machine learning tasks, such as the Live Text feature introduced with iPadOS 15. That's more than adequate for routine tasks such as web browsing, watching films and video, or doing some office work with Pages or Numbers. However, the A13 Bionic lacks the graphical horsepower of newer processors, so it won't be able to handle the latest 3D games, or high-end graphics or video work.

## Different league

There's a similar Bionic chip in the current sixth-gen iPad mini, although the mini steps up to the more recent A15 Bionic. This is a 6-core chip running at 2.9GHz, with a more powerful 16-core Neural Engine. It's also backed by a

5-core GPU that provides extra power for demanding graphics tasks, which means that the little iPad mini can provide surprisingly strong all-round performance for such a compact device.

However, the M1 chip used in the latest iPad Air and iPad Pro is in a different league entirely, with Apple claiming that the M1 iPad Pro models

provide 50% faster CPU performance than previous versions, and 40% faster graphics performance. This means that the current iPad Air and Pro provide a genuine alternative to conventional laptop and desktop Macs (such as the MacBook Air) because they're now using the very same processors as the Mac for the first time.



The 12.9-inch iPad Pro boasts the M1 processor, making it a great choice for graphics work.

## Put a SoC in it

The M1 processor is known as a system-on-a-chip (SoC) as it includes all the main components of a powerful computer system combined together on a single chip. The M1 processor includes an

8-core CPU running at 3.2GHz, with four of those being high-performance cores for handling the most power-intensive tasks, along with four 'efficiency' cores that can handle more routine tasks without

draining the iPad's battery too much. The M1 has a 16-core Neural Engine, and also adds an 8-core GPU (graphics processing unit) to provide extra power for demanding games, graphics and video work.

## iPad cameras

Neglected in the past, iPad cameras have had big updates recently

**W**hile the iPad can't quite match the Hollywood ambitions of the iPhone 13 Pro, with its three cameras and telephoto lens, it's no slouch when it comes to high-quality video and photography.

The cinematic baby of the group is the ninth-gen iPad, whose rear camera provides a relatively modest 8-megapixel (MP) resolution, which only allows it to record 1080p HD video at 25-30 frames per second (fps).

However, all other iPad models can now record 4K video, with the iPad Air and iPad mini providing wide-angle 12MP rear cameras that can record super-smooth video at up to 60fps. The two iPad Pro models go one step further, providing two rear cameras - a 12MP wide-angle camera and a 10MP ultra-wide camera that provides 122° field of view. The iPad Pro also offers 2x optical zoom, while other iPads are limited to less effective digital zoom only.

The front camera on the iPad has been a little underpowered in the past - it took Apple ages to ditch the ageing 720p cameras used on many Macs and iPads -



The rear cameras on the latest iPad models offer such a vast improvement over earlier incarnations in terms of stills and video.

but it has had a number of improvements recently. This reflects the 'new normal', which sees many people now working from home and using FaceTime or Zoom for video calls with family, friends or work colleagues.

All five current iPad models now have a 12MP ultra-wide front camera to provide a good field of view for video calls. Video resolution is still only 1080p for all models, but they can all record at 60fps. The iPad Pro can also use Face ID with its front camera in order to unlock the device.

## LiDAR, AR and VR

**T**he LiDAR (Light Detection and Ranging) sensor used by the rear cameras of the iPad Pro and recent iPhones is a key part of Apple's grand plans for the future of AR and VR technology.

The LiDAR sensor helps to improve camera performance in low-light conditions, but it can also calculate depth within an image or scene. This is similar to the TrueDepth technology used with the front-facing camera to map the contours of your face so that you can use Face ID to unlock the iPad Pro or an iPhone.

However, the LiDAR sensor is more precise than Face ID as it uses lasers to bounce rays of light off objects and measure their distance from the camera. This enables you to shoot photos and videos that contain accurate 3D data, which can then be used in AR and VR apps - all ready for Apple's long-awaited VR headset.



The LiDAR sensor used by the rear cameras of the iPad Pro will play a significant role in Apple's AR/VR future.



## Centre Stage

As well as updating the iPad's front camera to improve the quality of video calls, the current iPad range can all use Apple's Centre Stage feature too.

Centre Stage uses machine learning technology to automatically pan the camera and keep you in the

centre of the image at all times. This enables you to put the iPad down and move around, perhaps while giving a presentation to colleagues or clients at work. If someone else enters the image, Centre Stage can also zoom out to make sure that both of you are kept in view.

# Accessories

Expand your iPad's abilities with the latest accessories and add-ons

**A**s we've mentioned, the iPad is a tremendously versatile device, but most iPad owners still need to buy an assortment of cables and adaptors in order to connect the iPad to other non-Apple devices.

Apple makes its own range of cables and adaptors, with options such as its Digital AV adaptors (£49-£79) for HDMI displays and TVs proving essential for many. Apple's accessories are expensive, though, so it's worth exploring alternatives from companies such as Belkin, which makes a wide range of Lightning and USB-C adaptors that enable the iPad to work with external displays, wired Ethernet networks, and audio devices.

## Just in case

**Folio Cases are one of the most popular purchases for any owner of a new iPad, providing wrap-around protection for both the back panel and the front screen.**

Apple has two options; the basic Smart Cover (£45-£99), or the Smart Keyboard Folio with built-in keyboard (£159-£329).

Apple cases are expensive though, and there are some great alternatives, such as the rugged Defender cases from Otterbox (£59-£89.99), or Logitech's Keyboard Folio cases with built-in trackpad (£89.95-£199.95).



Apple accessories come at a premium price, but they do of course work like a dream with your iPad.

Of course, many iPad owners also have an iPhone, as well as AirPods and an Apple Watch, and we've seen some great multi-charger devices, such as the BaseLynx from Scosche (£139.95) and Kensington's StudioCaddy (£125), which can charge multiple mobile devices at the same time.

## Adding extra kit

Beyond basic chargers and adaptors, you'll no doubt want accessories and devices that can improve your productivity when working with an iPad. The Apple Pencil (£89/£119) has been a great success, proving popular for graphics and design work, and iPadOS now works with Bluetooth mice and keyboards, so popular models

such as Logitech's MX range for the Mac will also work with the iPad too; in fact, Logitech had a feature similar to Apple's 'innovative' new Universal Control about five years ago.

It's also worth remembering that the USB-C and Thunderbolt ports used on the iPad mini, Air and Pro enable you to connect USB storage devices for backing up your work files too. And if you really want to go to town, you can buy a device such as Kensington's StudioDock (£369.99), which turns your iPad Air or Pro into a proper desktop computer, with a multi-charger for the iPad and other devices, multiple USB ports, headphone socket, SD card reader, Ethernet port, and HDMI for an external display.

## Compatibility

**As well as coming in five different sizes, the iPad range includes a range of connectors for charging and accessories.** The entry-level iPad still has a Lightning connector, while the iPad mini and Air have USB-C ports. The iPad Pro now has

Thunderbolt 4/USB 4, which still uses the oval-shaped USB-C connector, so that's compatible with many accessories that also use USB-C. However, it's essential to check the compatibility info provided by accessory manufacturers first.





# Connectivity Wi-Fi and 4G/5G

You're always online and connected with the latest iPads

**M**ost iPad models now support the latest Wi-Fi 6 standard, with only the entry-level iPad still using the older Wi-Fi 5 (formerly known as 802.11ac). However, mobile broadband - referred to as cellular in the US - is an optional extra that costs £120-£150, depending on which model you're buying.

The iPad draws the short straw, only offering 4G LTE support for mobile broadband. In the UK, the Uswitch comparison website reports that the EE network provides the best 4G performance with average download speeds of 20-30Mbps. All other current iPad models support 5G mobile broadband, which currently provides average speeds of around 150Mbps. However, speeds vary a lot depending on your network provider and coverage in different parts of the country.

If you buy a 'cellular' iPad model then it will have a slot for a nano-SIM card that works with most mobile broadband networks. Current iPads also contain an eSIM though, which is a small chip that can work just like a SIM card in order to connect to mobile phone and broadband networks.

Ordinary SIM cards are locked to individual networks, like Vodafone or EE in the UK, so if you travel to another country, or simply want to switch to a different network, then you have to go to the hassle of getting a new SIM card to install in the iPad.

An eSIM is generally a better solution - especially when travelling - as it can work with many different mobile networks. However, not all networks currently work with eSIM technology! So you should check on eSIM compatibility before you go travelling. Find out more at [apple.co/3Nnhs86](https://apple.co/3Nnhs86).



Apart from the entry-level iPad, all other models now support Wi-Fi 6.

## How much storage?

**A**pple can be really annoying at times. The iPad, iPad mini and iPad Air all start with just 64GB of built-in storage - which really isn't enough. This means you're pretty much forced to pay around £140 to upgrade to 256GB. However, that's the maximum storage available for those iPad models, so if you need more than 256GB of storage, you'll have to pay for a top-of-the-range iPad Pro. The iPad Pro can be upgraded to 512GB, 1TB and even 2TB - although that 2TB option weighs in at almost £2,000.

But don't forget that the iPad mini, Air and Pro now have USB-C ports, which enable you to connect an external USB drive or a flash drive. It's not an elegant solution, but it's a lot cheaper than Apple's storage upgrades.



Consider what you want to do with your iPad the most. If it's editing photos and videos, plenty of storage is a must.

## iCloud storage

**There's one other option for adding some extra storage to your iPad - or any other Apple device for that matter.**

As well as features like Hide My Email, all iCloud+ subscriptions include a certain amount of online storage too. They're not bad value either - 50GB of storage only costs 79p per month, while 200GB costs £2.49, and 2TB costs £6.99. Many apps, such as iMovie, enable you to store your work files on the iPad itself, or in iCloud. And, of course, files saved in iCloud can be shared with all your other Apple devices too.



	<b>iPad mini</b> (6th gen)	<b>iPad</b> (9th gen)	<b>iPad Air</b> (5th gen)	<b>iPad Pro 11in</b> (3rd gen)	<b>iPad Pro 12.9in</b> (5th gen)
<b>Colours</b>	Space Grey, Starlight, Pink, Purple	Space Grey, Silver	Space Grey, Starlight, Pink, Purple, Blue	Space Grey, Silver	Space Grey, Silver
<b>Screen size</b>	<b>8.3 inch</b>	<b>10.2 inch</b>	<b>10.9 inch</b>	<b>11 inch</b>	<b>12.9 inch</b>
<b>Display</b>	Liquid Retina Display	Retina Display	Liquid Retina Display	Liquid Retina Display	Liquid Retina XDR Display
<b>Display specification</b>	<b>2266x1488</b> , 326ppi, P3, True Tone	<b>2160x1620</b> , 264ppi, True Tone	<b>2360x1640</b> , 264ppi, P3, True Tone	<b>2388x1668</b> , 264ppi, P3, True Tone	<b>2732x2048</b> , 264ppi, P3, True Tone
<b>Price/storage</b> (Wi-Fi only)	<b>64GB</b> £479 <b>256GB</b> £619	<b>64GB</b> £319 <b>256GB</b> £459	<b>64GB</b> £569 <b>256GB</b> £719	<b>128GB</b> £749 <b>256GB</b> £849 <b>512GB</b> £1,049 <b>1TB</b> £1,399 <b>2TB</b> £1,749	<b>128GB</b> £999 <b>256GB</b> £1,099 <b>512GB</b> £1,299 <b>1TB</b> £1,649 <b>2TB</b> £1,999
<b>Mobile broadband</b> (upgrade)	E140	E120	E150	E150	E150
<b>Broadband connectivity</b>	Wi-Fi 6/5G	Wi-Fi 5/4G	Wi-Fi 6/5G	Wi-Fi 6/5G	Wi-Fi 6/5G
<b>SIM support</b>	nano-SIM/eSIM	nano-SIM/eSIM	nano-SIM/eSIM	nano-SIM/eSIM	nano-SIM/eSIM
<b>Rear camera</b>	<b>12MP</b> Wide	<b>8MP</b> Wide	<b>12MP</b> Wide	<b>12MP</b> Wide + 10MP Ultra Wide	<b>12MP</b> Wide + 10MP Ultra Wide
<b>Rear camera video recording</b>	<b>4K</b> @ 24/25/30/60fps; 1080p @ 25/30/60fps	<b>1080p</b> @ 25/30fps	<b>4K</b> @ 24/25/30/60fps; 1080p @ 25/30/60fps	<b>4K</b> @ 24/25/30/60fps; 1080p @ 25/30/60fps	<b>4K</b> @ 24/25/30/60fps; 1080p @ 25/30/60fps
<b>Front camera</b>	<b>12MP</b> Ultra Wide, Centre Stage	<b>12MP</b> Ultra Wide, Centre Stage	<b>12MP</b> Ultra Wide, Centre Stage	<b>12MP</b> Ultra Wide, Centre Stage	<b>12MP</b> Ultra Wide, Centre Stage
<b>Front camera video recording</b>	<b>1080p</b> @ 25/30/60fps	<b>1080p</b> @ 25/30/60fps	<b>1080p</b> @ 25/30/60fps	<b>1080p</b> @ 25/30/60fps	<b>1080p</b> @ 25/30/60fps
<b>Chip</b>	<b>A15</b> Bionic	<b>A13</b> Bionic	<b>M1</b>	<b>M1</b>	<b>M1</b>
<b>Charging</b>	USB-C	Lightning, Smart Connector	USB-C, Smart Connector	Thunderbolt 4 / USB 4, Smart Connector	Thunderbolt 4 / USB 4, Smart Connector
<b>Weight</b> (Wi-Fi/Cellular)	293g/297g	487g/498g	461g/462g	466g/470g	682g/685g



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and get an issue for free\*



In iOS 11 or later, point the Camera app's photo mode at this QR code to download our app.

\*First-time digital subscribers only.





# Get started with Shortcuts on Mac

Automate repetitive tasks, save time, and be more productive with the Shortcuts app

WRITTEN BY **KENNY HEMPHILL**

**S**hortcuts started life as a way to automate tasks on iOS. So, you could, for example, create a shortcut that played the latest episode of your favourite podcast in the Podcasts app and trigger it by activating Siri and saying the podcast name, or by tapping an icon on the Home Screen.

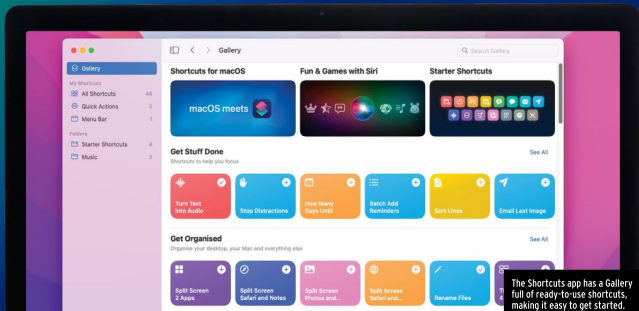
With the release of macOS Monterey, Shortcuts arrived on the Mac, taking over

from the Automator app. Shortcuts on the Mac works the same way as, and syncs with, the iOS version. Though shortcuts you create on one platform won't necessarily work on the other.

Shortcuts are comprised of actions. Each action is a step in the process like, say grabbing some text from an application, or passing that text to a different application. Actions are created and made available by app developers.

So if you want to use Shortcuts with a third-party app, the app needs to have support built in. You can see the available actions for applications installed on your Mac in the Shortcuts app.

Actions have parameters you need to set to make the Shortcut do what you want; you build a shortcut by dragging and dropping actions in a series of steps. It really is very simple, and we'll show you how to get started. ●



# Create your first Shortcut

Start simple and, before you know it, you'll have mastered the process

## Creating your own Shortcuts if you're starting from scratch can be quite daunting.

So Apple has built a Gallery of pre-cooked Shortcuts in the app. All you have to do is decide which ones you want to use and how you want to activate them. Once you've got used

to the way shortcuts work, you can edit them to make them do different things, or dive right in and create your own.

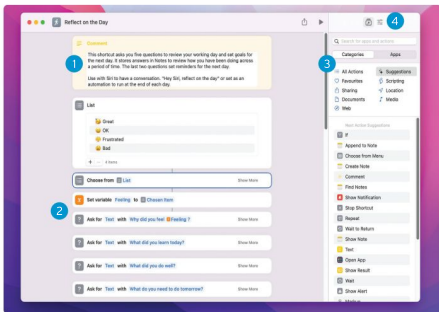
When it comes to triggering shortcuts, you have a choice of using Siri, a keyboard shortcut, Spotlight, or placing an icon for the shortcut in the menu bar or Dock, or by including it in Quick Actions or the Services menu.

In this section, we'll start by showing you how to use and modify an existing shortcut and then move on to creating your own simple shortcut. We'll use stock macOS apps for the tutorial, but once you've got to grips with how Shortcuts work, you'll want to explore how you can improve them, perhaps by replacing stock apps with third-party tools.

## EXPLAINED... The anatomy of a shortcut >

**1 Add comments**  
> You can add comments to actions to describe what they do and how they work.

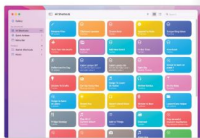
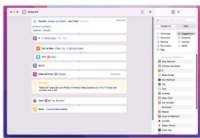
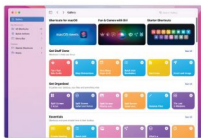
**2 Action types**  
> Action types are denoted by icons. 'X' for a variable, '?' for a request for your input, and so on.



**3 Actions view**  
> You can view all the available actions at once, choose a category, or let Shortcuts suggest some.

**4 Settings**  
> The Settings button enables you to choose how you will activate the shortcut.

## HOW TO Create and use your first Shortcut >



### 1 Explore the Gallery

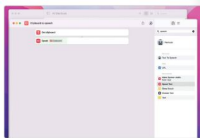
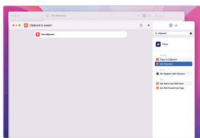
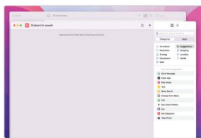
Launch the Shortcuts app and click Gallery in the sidebar. Explore the available shortcuts as you would apps in the App Store. Click one to find out what it does. Click the '+' to add a shortcut to All Shortcuts.

### 2 Examine a shortcut

Having a poke around under the hood is a good way to understand how shortcuts work. Choose one in All Shortcuts and double-click it. Examine the way actions fit together. Press the Play button to run it and see it in action.

### 3 Organise shortcuts

Once you have lots of shortcuts, you should put them in folders. Hover the pointer over Folders and click the '+'. Give the folder a name and press ⌘. Drag shortcuts from All Shortcuts on to the folder to add them.



### 4 Start a simple shortcut

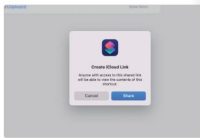
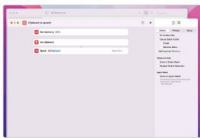
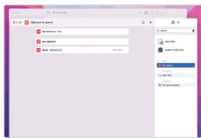
This shortcut will take text from the clipboard and read it aloud. You will need to copy the text before running it. Click the '+' in the toolbar to create a new Shortcut. Click in the Shortcut toolbar and type a name for it.

### 5 Add actions

Click Action Library (a '+' inside a box) on the sidebar and search for 'clipboard'. Drag the Get Clipboard action on to the main window. Next, search for 'speak text' and drag that action on to the window under Get Clipboard.

### 6 Finish and test

The variable in the Speak Text action should automatically change to Clipboard. You can now test the shortcut by pressing the Play button. You should hear the text you previously copied being read back to you.



### 7 Modify the shortcut

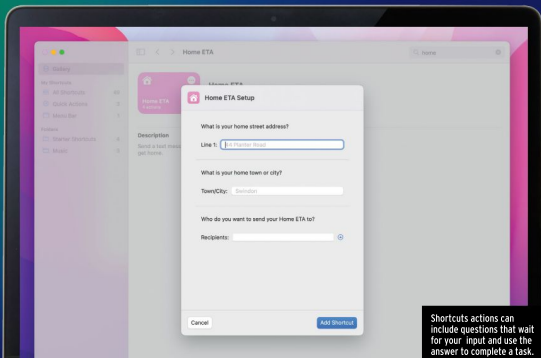
You can now play around with the shortcut to modify it. For example, you could reduce the volume of your Mac's speakers. Find the Set Volume action, drag it above Get Clipboard and choose a value to set the volume at.

### 8 Add it to the menu bar

There are a few ways you could activate this shortcut, including using a keyboard shortcut or adding it to the Services menu. We'll add it to the menu bar. Click Settings > Details (in the sidebar), and check 'Pin in Menu Bar.'

### 9 Share the shortcut

You can share a shortcut with other Mac users by generating an iCloud URL. With the shortcut edit window open, click the Share icon in the toolbar. Click Copy iCloud Link, then click Share. The link is now in the clipboard.



Shortcuts actions can include questions that wait for your input and use the answer to complete a task.

# Do more with Shortcuts

There's much more you can do with Shortcuts when you dig a little deeper

**O**nce you've mastered the basics of choosing shortcuts from the Gallery, running them, creating your own and sharing with others, you're ready to dig deeper. The shortcuts we've discussed so far are simple, with only a few actions and limited inputs. However, they can include

questions that ask for your input before running. Apple's Home ETA shortcut, for example, asks for your home address and who you want to notify before it calculates an ETA. Shortcuts can also have 'if then else' statements, where the result of the action varies according to conditions set. And you can set and call variables to store content in a shortcut.

Third-party apps you've installed on your Mac may have their own pre-cooked shortcuts. The note-taking app Bear, for example, has a shortcut that enables you to dictate a note directly to that app.

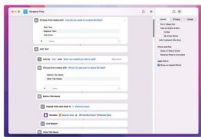
You can also change the name of an app at any time, and even change how it looks in the Gallery, menu bar and Dock by changing its icon.

## HOW TO Add a shortcut to Quick Actions >



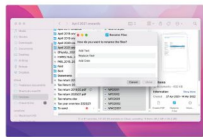
### 1 Choose a shortcut

Quick Actions are performed in the Finder by clicking a button in the preview window, so choose a shortcut that makes sense to be triggered in this way. One example is a shortcut that renames files in batches.



### 2 Enable Quick Actions

Double-click the shortcut in All Shortcuts. Click the Settings icon in the sidebar and then choose the Details tab. Check the box labelled 'Use as Quick Action'. Check the box next to Finder so it appears in Finder windows.

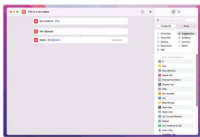


### 3 Use the Quick Action

In a Finder window, choose the file or files you want the shortcut to apply to. In Columns or Gallery views, look for the Shortcut icon at the bottom of the preview window and click it. If it's not there, click More and select it.

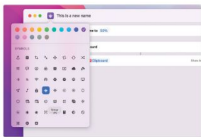


## HOW TO Customise shortcuts >



### 1 Change its name

The name of a shortcut isn't just important for identifying it, it's how you trigger it from Siri or Spotlight. To change a name, double-click the shortcut in All Shortcuts and click anywhere in its name. Edit the name as required.



### 2 Change its icon

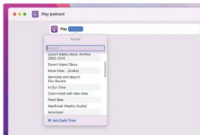
With the shortcut still open from step 1, this time click its icon. Choose a colour from the options, and then choose a symbol for its icon. Make it as easy to identify as possible from Quick Actions, the menu bar, or the Dock.



### 3 Work with folders

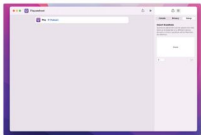
To add shortcuts to folders you've created, drag them from All Shortcuts onto the folder in the sidebar. Do the opposite to remove them from a folder. To change a folders icon,  $\text{⌘}$ -click on it and choose Edit Icon.

## HOW TO Add a question to a shortcut >



### 1 Create shortcut

We'll create a shortcut to play a podcast. Click '+' in the toolbar and give your new shortcut a name. Drag Play Podcast from the Action Library to the main window. Click the blue Podcast badge and choose Ask Each Time.



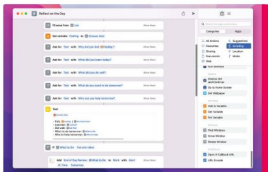
### 2 Add question

When you run the shortcut on your own devices, you will be able to select a podcast from your library. If you want to share it, you can type a question to prompt the recipient to choose. Click Settings and then choose Setup.



### 3 Type the question

Click the '+' beneath Import Questions, then click Podcast. Type a question in the text box, then choose a default answer if you want to set one. Click Done when you're finished. You can add as many questions as you need.



## Introduction to variables

### Use variables to do more with Shortcuts

Variables are containers used to label and store content like text or images. Shortcuts has two types of variable besides the regular manual ones. The most useful of these is Magic Variables, which can store the output of any action for use later in a shortcut. The other type is Special Variables - variables you can add to text or to a parameter setting. For example, you can use the Current Date variable to append the current date to text, or the Clipboard variable to use the contents of the Clipboard in an action.

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- > Make any Mac easier to use (and your iOS devices too)
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# APPLE CHOICE

EDITED BY **ROB MEAD-GREEN** >



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> Our reviews are totally independent; we're not affiliated with Apple or anyone else, nor are we influenced by advertisers.



> A truly exceptional product. Award given solely at the discretion of the editor.



> The best example of its kind when pitted against comparable products.



> A brilliant thing



> Strongly recommended



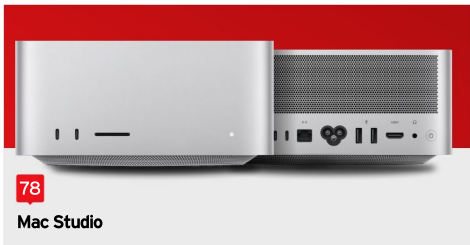
> Worth considering



> Notable flaws



> A waste of your money

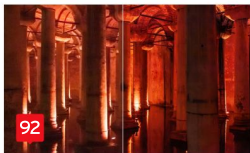


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# Mac Studio

Apple's most powerful desktop Mac is brilliant for creative pros, but it won't be for everyone

> **£6,199 (model on test)** > FROM Apple, [apple.com/uk](https://apple.com/uk)

> **FEATURES** Apple M1 Ultra chip (20-core CPU, 64-core GPU, 32-core Neural Engine), 2TB storage, 128GB of unified memory, Wi-Fi 6 (802.11ax), Bluetooth 5.0, 6x Thunderbolt 4 ports (2x front, 4x rear), 2x USB-A ports, 1x 10Gb Ethernet port, 1x HDMI 2.0 port, 1x 3.5mm headphone jack, 1x SDXC card slot, 197x197x95mm, 3.6kg

**E**ver since Apple introduced its first Apple silicon Mac in 2020, its direction of travel has been crystal clear. First to arrive were the M1-powered MacBook Air, Mac mini and 13-inch MacBook Pro in 2020, followed by the gorgeous 24-inch iMac in April last year. Last October, Apple moved things on again with the new 14-inch and 16-inch MacBook Pro offering up new members of the M1 family, the M1 Pro and M1 Max. Now there's this, the new Mac Studio – a Mac mini on steroids, armed with a choice of either an M1 Max or the new M1 Ultra, making it the most powerful desktop Mac ever made – or at least until the new Apple silicon-sporting Mac Pro arrives sometime in the next few months.

Thanks to the power of Apple silicon, even an M1-powered Mac mini or MacBook Air should have enough oomph for most of us, so it should come as no surprise to find that the Mac Studio isn't really aimed at us – instead Apple's target market is the creative pros who edit 8K videos, render complex graphics-heavy scenes and produce multitrack audio streams all day long. And the new Mac Studio is priced accordingly. £1,999 buys you a Mac

Studio equipped with an M1 Max chip with a 10-core CPU, 24-core GPU and 16-core Neural Engine), 32GB of unified memory and 512GB of solid-state drive (SSD) storage. Spending £3,999 takes you into M1 Ultra territory, complete with a 20-core CPU, 48-core GPU and 32GB Neural Engine, 64GB of unified memory and a 1TB SSD. The model on test here shows just how far Apple can push even that. Priced at £6,199 (via the Mac Studio's Configure To Order options), it comes with a 20-core CPU, 64-core GPU, 32-core Neural Engine M1 Ultra, plus 128GB of unified memory and 2TB of SSD storage. Increasing the storage to 4TB will cost you another £600, while adding 8TB costs £1,800. It's not really a machine for a spot of web-surfing and the odd email then.

No matter which build-to-order Mac Studio you buy, the rest of the specs largely remain the same. On the front, you'll find two USB-C ports (M1 Max versions) or two Thunderbolt 4 ports (M1 Ultra versions), plus an SDXC card slot, while on the rear all variants get four Thunderbolt 4 ports, a 10Gb Ethernet port, one HDMI 2.0 port and a 3.5mm headphone jack. On the underside of the unit you'll also find a security slot, enabling you to lock the Mac Studio to your desk, making it less likely someone will walk off with your prize possession.

When it comes to design, the Mac Studio really is just like an oversized Mac mini – it has the same 197x197mm footprint as the mini, but stands taller at 95mm (compared to the Mac mini's 36mm), and its aluminium shell has cheese-grater-style vents on its rear and underside, enabling the huge twin fans inside to suck in air and draw it over the built-in power supply and logic board. Like most other Macs, these days, the Mac Studio also comes with Wi-Fi 6 (802.11ax Wi-Fi) and Bluetooth 5.0 wireless connectivity.



Paul says...

> If you're a creative pro, the Mac Studio ticks all the right boxes. Dedicated hardware for video encoding, a powerful GPU for running multiple 4K screens – if you need this, go buy! But if you don't deal with ProRes codecs and don't need gigabytes of memory, your best bet for a desktop Mac is to grab a Mac mini and save some serious money.



The Mac Studio is festooned with ports, including four Thunderbolt 4 ports on the rear as well as 10Gb Ethernet.



It's worth noting at this point that just like the Mac mini, the Mac Studio is sold without either an accompanying mouse, trackpad or keyboard. To that end, Apple has launched special black editions of the Magic Mouse (£99), Magic Trackpad (£149), and Magic Keyboard with Touch ID and Numeric Keypad (£199). It hasn't taken the opportunity to change the way the Magic Mouse charges, though, or added backlighting to the Magic Keyboard's keys (which seems like a bit of a missed opportunity given that the Mac Studio is likely to be used studio environments with low lighting, especially when editing video).

The Mac Studio is also decidedly non-user upgradeable, with [ifixit.com](https://www.ifixit.com) awarding it 6 out of 10 for reparability, noting that while you could potentially swap out the removable storage using another SSD of the exact same specification, attempting to replace it with higher capacity storage is a no-go (for now). As for rest of the components, you're stuck with what you chose when placing your order.

When it comes to design, the Mac Studio really is just like an oversized Mac mini

### Ultra powerful

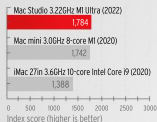
While you could buy the Mac Studio with an M1 Max (instead of, say, the far more portable MacBook Pro with the same chip inside), most creative pros are likely to opt for the M1 Ultra, as that's where this machine's true power lies. As Apple pointed out during its Peek Performance event, the M1 Ultra is essentially two M1 Max die 'joined' together with computing tasks distributed between them using Apple's proprietary UltraFusion architecture. This, Apple says, delivers up to 2.5TB/s of low-latency inter-processor bandwidth, which in turn helps the M1 Ultra deliver up to 3.8x faster CPU performance, 4.5x faster GPU performance and 3x faster machine learning performance than the Intel-powered Mac Pro and iMac models Apple chose to benchmark the Mac Studio against. Apple even says the Mac Studio outperforms many desktop-class PCs, and that's true to an extent, although in reality things are somewhat more nuanced than that.

Just like all the other Apple silicon Mac's we're tried, the Mac Studio is quick to start up and super-slick to use, with almost every application we tried typically launching within a single bounce of its icon in the Dock. ●



You also get two USB-A ports and an HDMI port, as well as a 3.5mm headphone jack.

## BENCHMARKS Our analysis explained >



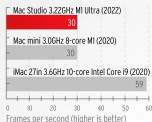
### GEEKBENCH 5 SINGLE-CORE TEST

> This tests the capability of a single processor core. Many more common tasks on a Mac will only use a single core at a time. Geekbench 5 is a universal app running on Monterey.



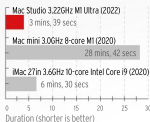
### HANDBRAKE VIDEO ENCODING

> We transcode a Blu-ray-quality video file into H.264 format using HandBrake to test the multicore processor performance. Handbrake 1.4 or later runs natively on the M1.



### RISE OF THE TOMB RAIDER (1920X1080)

> For a real-world gaming test, we use the benchmarking tool in this game, with the graphics quality set to High and the resolution set to 1920x1080. Not yet optimised for M1.



### DAVINCI RESOLVE

> In Blackmagic Design's editing tool for video professionals, we exported an effects-laden, 2.5-minute project to the H.264 format. The app has been optimised for M1 performance since the release of version 17.1.



The front of the Mac Studio gets either two USB-C ports or two Thunderbolt 4 ports, depending on configuration.

## Mac FORMAT VERDICT

> Super-quick and powerful, the M1 Ultra Mac Studio is overkill for the most of us.



- ★ Ultra-fast CPU performance
- ★ Good port selection
- ★ Very, very expensive
- Not for gamers

As you'd expect, editing images in apps such as Photos, Pixelmator Pro or Affinity Photo is friction-free too and even rendering 3D scenes in Blender gave us super-quick results, often taking just minutes where it can take hours on the Intel-based MacBook Pros we normally use in the *MacFormat* office.

In Geekbench 5's single-core processor test, the Mac Studio hit a consistent score of 1,784, putting it on a par with other M1 Macs (see the M1 mini score in the table above). This isn't too surprising as the underlying architecture is the same. Where the Mac Studio really hits it out of the ballpark is in the multicore test, where that 20-core M1 Ultra CPU achieved 23,944 – or over twice that of a 27-inch iMac with a 3.6GHz 10-core Intel Core i9, which averaged 10,002.

The Mac Studio ace our DaVinci Resolve benchmark test too (which involves rendering an effects-laden 2.5-minute video), taking just 3 minutes, 39 seconds to produce the finished clip, compared to 6 minutes, 30 seconds on the 27-inch Intel iMac, and 28 minutes, 42 seconds on a Mac mini equipped with a standard M1.



The two huge fans behind the Mac Studio's grille are mercifully quiet, even when the machine is working hard.

## The Mac Studio may be a great rendering machine, but games console it is not

However the Mac Studio delivered mixed results in our next two tests. In Handbrake, the Mac Studio managed to transcode a one-hour long 4K video into MP4 in 9 minutes, 10 seconds; 2 minutes, 13 seconds slower than an Intel Core i9 iMac. Gaming performance in Rise of the Tomb Raider was also sub-par, averaging 30 frames per second (fps), compared to the Intel Core i9 iMac's 59fps. That could be because the game isn't optimised for the M1, but the Mac Studio also performed surprisingly poorly during our Shadow of the Tomb Raider test. While there it managed to clock up 117fps, it did so only by frequently dropping frames using the in-game benchmark setting at 1980x1080 resolution, while actual use in-game resulted in the same jerky performance. The Mac Studio may be a great rendering machine, but games console or even gaming PC replacement it is not.

So should you buy the Mac Studio? If you're a creative pro who edits 8K video or renders graphics all day, the answer is undoubtedly yes. But for the rest of us? You could just about justify buying the £1,999 M1 Max version as an ageing iMac replacement. But the M1 Ultra? No. As interesting and as powerful as it is, it's overkill for the day-to-day tasks you're most likely to want to do and we're not convinced (yet) that it's worth the premium you have to pay. **Rob Mead-Green**

# Studio Display

The 27-inch 5K Retina display has surprise hits - and misses

> **£1,499** > FROM Apple, [apple.com/uk](https://apple.com/uk)

> **FEATURES** 27-inch 5K Retina display (5120x2880 pixels), 600 nits brightness, True Tone, 1x Thunderbolt 3 port, 3x USB-C ports



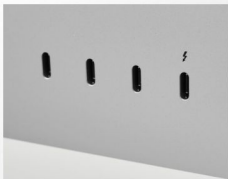
The Studio Display is powered by the same A13 Bionic chip used by the ninth-gen iPad

**N**ow that the 27-inch iMac has joined the Power Mac G4 Cube and the original MacBook in the great big Apple resting place in the sky, the new Studio Display could be the next best thing.

Maybe. Released alongside the new Mac Studio, the Studio Display sports a 27-inch 5K Retina display (just like the 27-inch iMac) and even bears a passing resemblance to the 24-inch iMac. It is also only Apple's second display of the modern era, joining the 32-inch Pro Display XDR (£4,599), but at a more reasonable £1,499.

We say 'reasonable', but there's a catch. The £1,499 price either gets you a Studio Display with a fixed height but tilt-adjustable stand or a VESA mount. For a height-adjustable stand you'll need to spend an extra £400. Where rival monitors often include a height-adjustable stand and a VESA mount option as standard, Apple forces you to choose the one you want at buying time - unless you change your mind later and take the Studio Display to your local Apple Store and get the stand swapped out for another. And if you want non-reflective nano-texture glass? That'll be an extra £250 please.

Also controversial is the use of a braided power cable that comes pre-attached to the display and can only be removed using a



The Studio Display only has a single Thunderbolt 3 input, but at least it can charge your MacBook at the same time.

The perfect partner for the new Mac Studio - but it doesn't have all the bells and whistles that you might expect.

proprietary tool (or very carefully). The Studio Display also comes with a single Thunderbolt 3 input. While this means you only need to connect one cable to your Mac (and have it charge at the same time if it's a MacBook Air or MacBook Pro), anyone needing HDMI or DisplayPort connections will need to buy an adaptor (there are none included).

## Missing in action

While the Studio Display's 5K Retina screen looks great, it's also missing the kind of features you'd expect to find in a monitor at this price - such as High Dynamic Range (HDR) support or a 100Hz or higher refresh rate. The lack of the former seems particularly egregious when the Studio Display is supposedly aimed at creative pros (or anyone who wants to watch HDR videos they've bought on iTunes), and also odd given that the Mac, iPhone and iPad all support HDR, with some (the iPad Air and iPad Pro) supporting 120Hz refresh rates too.

Things get odder still when you discover that the Studio Display is powered by the same A13 Bionic chip used on the ninth-gen iPad and runs iOS 15.4. Still at least there's always the 12MP Ultra Wide webcam and Centre Stage - only the jury's still out on that one, as Apple's promised update to fix a webcam quality issue is still to materialise as we went to press.

At least the Studio Display sounds as good as it looks - with six speakers and support for Spatial Audio as well as three studio-quality microphones. It also comes with a three-port USB-C hub, enabling you to hook up peripherals directly to the display rather than your Mac.

**Rob Mead-Green**

## Mac FORMAT VERDICT

> While it's great to have another monitor option from Apple, the Studio Display has limited appeal.



- ★ Bright, colourful 5K Retina display
- ★ Built-in USB-C hub
- ★ Costly stand options
- No HDR or high refresh rate support

# Lenco LS-440 Turntable

Enjoy your vinyl with the minimum of fuss

> **£249.99** > FROM Lenco, [lenco.uk](http://lenco.uk)  
> **FEATURES** Bluetooth 5.0, four built-in speakers, 50W RMS power, 33 and 45rpm turntable, moving magnetic cartridge



The four speakers kick out a pleasing sound stage with a range of musical styles

## Mac FORMAT VERDICT

> A compact and stylish solution for listening to records, but lacking computer integration.



- Amp and speakers built in
- Solid and warm sound
- No USB audio
- No Bluetooth out

### Vinyl continues to enjoy a renaissance but not everyone has space for a full hi-fi setup.

Lenco's small range of all-in-one turntables offer a way to listen to records while taking up as little space as possible, combining a belt-drive platter with four built-in speakers, two rated at 15 watts and two at 10 watts, and running off mains power. The LS-440 is finished in beige or grey fabric which lends it a pleasingly retro feel and the design is sure to be a talking point in any home. Other models in the series use plastic or even wood finishes.

There are two speed switches for 33 or 45rpm playback and the cartridge is from pro audio specialists Audio Technica. The arm is nicely counterbalanced and the unit comes with a plastic dust cover to keep everything running smoothly by minimising buildup on the record's surface. A 3.5mm headphone jack lets you listen privately, while tone and pitch knobs let you adjust the playback speed and the high- and low-end of the signal respectively. The headphone jack could ideally have been on the front panel for convenience, but it's not a deal breaker. The tone control also provides an easy way to squeeze a bit more, top or bottom end, out of the sound.

Sonically it's quite evenly balanced, and capable of going fairly loud. While a compact unit is never going to challenge floor-standing

speakers for clarity, the LS-440's four speakers kick out a pleasing sound stage with a range of musical styles. You can use Bluetooth to connect other devices wirelessly to the speakers, though the turntable itself can't send sound to a Bluetooth speaker, which seems like a missed opportunity.

### More options

Around the back are a couple more options, starting with dual RCA phono outputs, for connection to an external amplifier or powered speakers, which can be switched between phono or line out modes depending on what you're connecting to. There's also a 3.5mm aux input for connecting external gear to the speakers via a cable. So you are able to send the audio from the vinyl out to bigger speakers if you want though only over an analogue connection. It would have been nice to see a USB option here to send audio to a computer for playback and also for digitising your records, especially since this model is at the pricier end of Lenco's lineup.

Most audiophiles are going to go for a dedicated separates system and the associated costs that entails, but this all-in-one system is a great way to enjoy your vinyl collection with the minimum of fuss and wiring. It looks good, sounds decent and doesn't cost the earth. Adding USB audio would have been the icing on the cake. **Hollin Jones**



# Joby Swing Complete Kit

Add pro tracking moves with this slider

> **£164.95** > FROM Joby, [joby.com](http://joby.com) > **FEATURES** GorillaPod 3K stand, BallHead 1K, phone mount, Bluetooth

**P**rofessional movie makers can make a clip look more interesting (or tell a story) by tracking the camera.

The Joby Swing enables you to track your iPhone as smoothly as a top cinematographer.

The dedicated Joby Motion app enables you to set the Swing's start and end points by tapping on the iPhone's display. Tap Go and it tracks in either Video or Timelapse mode. The Kit also ships with a sturdy GorillaPod 3K tripod, so you can mount the device in a variety of locations using the tripod's flexible legs.

The Joby Swing tracks slowly so the moves that it makes are subtle. For more noticeable results, you need to have an object in the foreground so that you can track from it to reveal a background subject.

The tracking span is also short at 42cm, so your range of movement is fairly limited (and it risks toppling over when fully extended unless you place the tripod legs carefully). We also found that

the tripod could occasionally vibrate while tracking, but applying pressure with a finger can smooth things out.

The Joby Swing will be useful to add a little movement to your clips but for an electronic tripod that's has more range of speed and movement, we'd recommend the panning Joby Spin - which is also cheaper than its swinging sibling.

**George Cairns**



Add precise and smooth motion-controlled tracking moves to your video and timelapse sequences.

## Mac FORMAT VERDICT

> The Swing's range of movement may be subtle but it works well with the right subjects.



- Smooth tracking shots
- Relatively expensive

# ShiftCam ProGrip Starter Kit

Turn your iPhone into a pro camera

> **£129.99** > FROM ShiftCam, [shiftcam.com](http://shiftcam.com) > **FEATURES** Wireless powerbank, Bluetooth shutter, ergonomic grip, landscape/portrait

**T**he act of capturing a perfect shot on your iPhone can be a challenge. You need two

hands to snap a shot safely when tapping the Camera app's shutter button. When switching between lenses, you may not realise that one of them is obscured by a finger. On an intensive shoot, you'll drain the iPhone's battery more quickly and may miss a photo opportunity.

The ShiftCam ProGrip solves these problems, and makes your iPhone feel more like a traditional camera. Its ergonomic non-slip rubber



The starter kit ships with a protective case and cold shoe mount for external devices.

grip lets you hold your iPhone comfortably (and securely, thanks to a strap) in one hand.

You can capture a shot by pressing a button (triggering the Camera app's shutter via Bluetooth). Thanks to a built-in wireless powerbank you can shoot for up to three times longer, so there's no need to carry an external charger. Like a DSLR it feels satisfyingly heavy, encouraging you to compose a shot rather than grabbing a quick snap.

When mounting an iPhone 13 Pro Max into the ProGrip, we were concerned about it slowly sliding out of the rubber grips due to the iPhone's shiny surface. The smaller 13 Pro felt very loose. However by enclosing both models in a protective case, we were then able to safely secure them in the ProGrip and shoot with confidence. The ProGrip will certainly take your iPhone photography to the next level.

**George Cairns**

## Mac FORMAT VERDICT

> Helps you shoot like a DSLR user and prolongs your ability to keep on shooting.



- Bluetooth shutter
- Doesn't grip tightly enough



# NOISE CANCELLING OVER-EAR HEADPHONES

Immerse yourself in a world of wireless sound



## Group test

Reviewed by **HOLLIN JONES**

### ON TEST...

- › Apple AirPods Max
- › Bowers & Wilkins PX7
- › JLab Studio Pro ANC
- › Sennheiser Momentum 3
- › Shure Aonic 40
- › Sony WH-1000XM4
- › SoundCore Life Q35
- › Urbanista Los Angeles
- › Yamaha YH-E700A

**W**hen it comes to audio fidelity, over-ear headphones are almost always going to offer a superior listening experience compared to earbuds. This is due to their bigger size and the fact that their drivers are many times larger, which enables them to move more air and thus achieve a richer soundstage. An over-ear design means that the ear cups completely surround each ear, minimising sound leakage both in and out. Additionally, noise cancelling technology, when activated, analyses ambient sound and then cancels it out, providing you with an even more immersive listening experience.

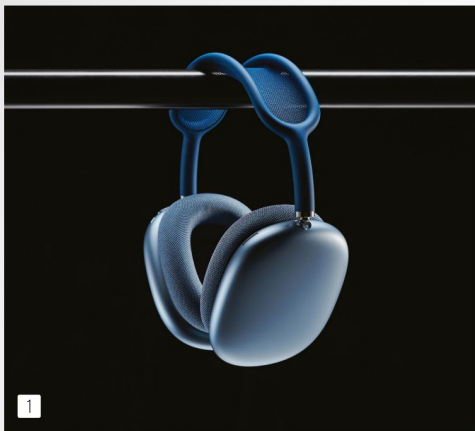
All of this plus wireless operation uses power of course, but these larger bodies are able to house batteries with impressive performance, often going for 20 hours or more on a single charge. These models will pair with any device that has Bluetooth, though they're designed less for sporting use than for the enjoyment of music and movies from your Mac, iOS device, Apple TV, or Bluetooth-enabled hi-fi system. Any of these headphones will significantly enhance your listening experience.

### How we tested

› The ease of pairing and switching between Bluetooth devices was tested, as well as overall comfort during long listening sessions. A range of audio sources was used including Apple Music, movies streamed over Netflix, and ripped, lossless audio originally from CD. The headphones were tested with noise cancelling on and off, and an assessment made of the quality and accuracy of reproduction. Where advanced features like Apple's Spatial Audio were available, these were also tested with a range of relevant sources.

## Things to consider...

- 1 Size and weight**  
 > All the models are designed for comfort but some with larger batteries will be a little heavier.
- 2 Battery life**  
 > The less often you have to recharge, the better. All these models will see you through at least half a day of listening, but some go much further than that.
- 3 Extra tech**  
 > Some models offer advanced features, particularly Apple's AirPods Max with Spatial Audio, dynamic head tracking, and the tight macOS and iOS integration that only Apple can offer.
- 4 iOS integration**  
 > Many of the models can be customised in various ways, like changing their EQ via a companion iOS app, while others are more standalone products.



## Apple AirPods Max

> £549 > FROM [apple.com/uk](https://apple.com/uk)

**1 The most expensive headphones on test, the AirPods Max feature Apple's high-end build quality and design.** Naturally, the headphones integrate well with macOS and iOS, with seamless switching between Apple devices. The AirPods Max sound rich and balanced with any source, and boast an array of features powered by Apple's multicore H1 chips. Constantly listening with six external and two internal microphones, the processing adapts the EQ based on the fit of the ear cushions. As well as superb noise cancelling, you get an optional Transparency

mode that allows outside sound in. Gyroscopes and accelerometers enable Spatial Audio with head tracking, moving sounds dynamically when used with Apple Music, or providing virtual surround sound for movies and TV. You'll get 20 hours of power on a single charge. Always-on Siri, notification announcements, and on-head detection round out this highly advanced feature set.

> **VERDICT**             
 ● Gorgeous sound  
 ● Excellent Apple integration  
 ● Very advanced feature set  
 ● Expensive  
 ★★★★★

## Bowers & Wilkins PX7

> £249 > FROM [bowerswilkins.com](https://bowerswilkins.com)

**2 B&W has an illustrious history in high-end hi-fi and the 43.6mm drivers used in the PX7 are larger than most of the others on test.** Despite this, the headphones still only weigh 310g. They use the aptX Adaptive codec over Bluetooth, which delivers up to 24-bit/48kHz sound while minimising interference from devices. Comfortable to wear, a three-button panel lets you control playback, and a proximity sensor will pause and restart sound when you lift a cup from your ear. Battery life is 30 hours, with a 15-minute charge giving you

up to five hours of playback. Although they look less iconic than some models on test, the PX7 headphones sound excellent, providing a detailed soundscape, beautifully balanced in terms of tone. Noise cancelling has low, medium, and high modes, and all work very well, as does the ambient listening mode. A companion iOS app lets you manage connections and noise

> **VERDICT**             
 ● Excellent, detailed sound  
 ● Fast charging  
 ● Effective noise cancelling  
 ● No EQ support in app  
 ★★★★★



## JLab Studio Pro ANC

> \$99 (about £90) > FROM [intl.jlab.com](http://intl.jlab.com)

**3** By far the most affordable pair on test, JLab's Studio Pro ANC headphones have a battery life of 45 hours, dropping to 43 hours with noise cancelling on. Not bad considering they weigh just 221g.

AAC and SBC codecs are supported as well as wired operation, and they're comfortable, though have a more lightweight build than some. Three EQ modes are available, changed on-body not via an app. There's a 'burn-in' app, curiously, that plays tones to 'break them in'.

Four microphones power the active noise cancellation

which has four modes – high, low, off, and passthrough. It's pretty decent, though can't compete with the costlier contenders. The microphone quality is acceptable and audio playback is solid though a little flat and mid-heavy. These are decent headphones for the price, which is much more accessible, though you also have to accept some of the evident compromises.

### > VERDICT

- Very affordable
  - Great battery life
  - Middling performance
  - No aptX or HD
- ★★★★★

## Sennheiser Momentum 3

> £349 > FROM [en-uk.sennheiser.com](http://en-uk.sennheiser.com)

**4** Able to fold down to a very portable size, Sennheiser's Momentum 3 are beautifully designed and come with a 3.5mm cable and USB-C, as well as USB-A options for charging. Their battery life is slightly disappointing by comparison at just 17 hours, though you get not only transparent listening but three types of noise cancelling – max, anti-wind, and anti-pressure. Ranging from most to least intense, these are all very effective in everyday use. Frequency response is a low 6Hz-22kHz.

On-body controls let you take calls and activate Siri,

and the Smart Control app for iOS lets you set up EQ presets and enable smart pause when one cup is lifted. Sennheiser's pro audio pedigree really shines through when it comes to sonics too, with music and movies coming across as dynamic, nuanced, and detailed, closer to audiophile quality than wireless headphones. These are an excellent meeting point between hi-tech and hi-fi.

### > VERDICT

- Stunning, detailed sound
  - Flexible ANC modes
  - Superb build quality
  - Battery life
- ★★★★★



## Shure Aonic 40

> £215 > FROM [shure.com](https://www.shure.com)

**5** With their all-plastic design, the Shure Aonic 40 headphones are comfortable to wear though lack the premium feel of other, admittedly pricier options. The headphones use Bluetooth 5.0 and support aptX, HD, AAC, and SBC codecs, as well as wired use via a 3.5mm port.

A decent 25-hour battery life can be topped up with a 15-minute quick charge for an extra five hours of use, and there are three noise cancellation modes which work well, though others on test do better here. An 'environment' mode allows ambient audio in.

Audio performance overall is good, with most sources coming across as punchy and rich. Multipoint Bluetooth is supported meaning you can flip easily between devices, and there's a free ShurePlus PLAY app that includes among other things a range of EQ presets, as well as the ability to set up your own. These are solid headphones, even if they perhaps lack a killer feature.

### > VERDICT

- Decent all-rounder
  - Fast charging
  - ANC is middling
  - Build is lightweight
- ★★★★★

## Sony WH-1000XM4

> £259 > FROM [sony.com](https://www.sony.com)

**6** Sony's popular WH-1000XM4 headphones have a unique aesthetic and fold down to a portable size. With 30 hours of battery, a 10-minute charge will get you another five hours of playback with an optional AC adaptor. Alexa and Google Assistant are supported, as well as a feature that pauses playback if you speak. They use the LDAC codec, which transmits at a higher bit rate and boasts a frequency response of 4Hz-40kHz. Wired operation is also available.

The soundstage is pleasingly wide and rich, and the headphones handle

dynamics brilliantly, producing a powerful sound. They are excellent with music, movies, and also when making calls. The onboard QN1 noise cancelling processor constantly monitors audio and noise both inside and outside the cups, resulting in excellent noise cancellation performance. A companion app provides useful tweaking and set-up options.

### > VERDICT

- Superb sound
  - Excellent ANC performance
  - Comfortable and stylish
  - Good app
- ★★★★★





## SoundCore Life Q35

> £129.99 > FROM [uk.soundcore.com](http://uk.soundcore.com)

**7** Designed for use on the move, the Life Q35 are lighter than some others at just 272g. Nevertheless they boast a battery life of 60 hours with noise cancelling off, or 40 with it on. Fast charging is also supported and a five-minute charge can provide up to four hours of playback.

They use LDAC tech to transmit at a higher bit rate of up to 990kbps as opposed to SBC's 328kbps, which does seem to make a small appreciable difference. There's also a wired option via the 3.5mm port, charging is over USB-C, and they can pair with two separate devices.

They tend to be bass-heavy and while solid with most sources, they won't trouble the pricier models on test. The onboard microphones do a good job with voice calling and though noise cancelling is average, there's handy features like tap-to-activate transparency mode. The Soundcore iOS app lets you set up custom EQ profiles and control other settings.

### > VERDICT

- Great for using on the move
- Fast charge, good battery
- Sonically a little average
- ANC is just OK

★★★★★

## Codex explained

> **All Bluetooth audio must be compressed and converted to some extent before it can be streamed to your headphones.** As things stand, sending uncompressed sound requires too much bandwidth. The codecs used for this have improved a great deal, and as well as AAC and SBC there's now aptX and HD, supported by many of the models on test, that improve sample and bit rates along with the reliability of the stream. Some use the LDAC codec, which transmits at a higher bit rate.

Although higher data rates are preferable, they're only one part of the signal chain. A 'simple' AAC stream still sounds good, and it's things like the design of the cups and the tuning of the drivers that also play a big role in how headphones sound. Most models on test support wired listening as well as wireless, where codecs aren't in use at all.



## Urbanista Los Angeles

> £169 > FROM [urbanista.com](http://urbanista.com)

**8** Urbanista's Los Angeles have a remarkable and unique feature in the form of solar charging that works both indoors and out. They also charge over USB-C and offer a massive 80 hours of use, or 50 hours with noise cancelling on, but exposed to light they are essentially always charging and this works surprisingly well.

With a simple design, they support SBC and AAC codecs over Bluetooth 5.0 and have a companion app that lets you monitor charging and turn features on and off, with controls also available on-body.

Sonically they are a little bass-heavy and not as sharp as others, though perfectly decent, especially with electronic music. The active noise cancelling struggled a little with higher-pitched sounds, though ambient listening mode worked well and on-head detection is handy. Voice assistants are also supported. If you're a bit eco-conscious, these are certainly worth a look.

### > VERDICT

- Staggering battery life
  - Innovative solar charging
  - A little bass-heavy
  - ANC is middling
- ★★★★★



## Yamaha YH-E700A

> £369 > FROM [uk.yamaha.com](http://uk.yamaha.com)

**9** Yamaha's history as a pro audio company informs the tech in these headphones, which provide 35 hours of battery life on a single charge. They also offer a 3.5mm audio jack and are also one of the largest models on test. A frequency response of 8Hz-40kHz ensures an accurate sound, with an excellent balance across low, mid, and high frequencies.

There's plenty of tech, with Listening Care Advanced constantly analysing volume, and optimising EQ over time to smooth out variations between tracks.

A combination of in-ear and external microphones power the active noise cancellation, which uses a unique algorithm and is among the best-performing here. Ambient listening is available, too. A Listening Optimiser function can train the headphones to suit your ear shape and a companion app lets you control functions. These are excellent all-rounders - ideal for music.

### > VERDICT

- Crisp, accurate sound
  - Long battery life
  - Excellent ANC
  - Physically quite large
- ★★★★★



THE WINNER

Mac  
FORMAT  
BEST ON  
TEST

# Sony WH-1000XM4

Superb all-rounders with bags of features and great sound

**A**pple's AirPods Max are the most advanced and most convenient for users of Apple hardware, but their high price is an issue. They're far and away the costliest models on test.

Special mention goes to the Yamaha, Sennheiser, and Bowers & Wilkins models, all of which reflect the long track records of their respective companies in the high-end hi-fi and pro audio worlds. They all to a degree feel as much like audiophile headphones as they do high-tech ones. Urbanista's Los Angeles also have a unique

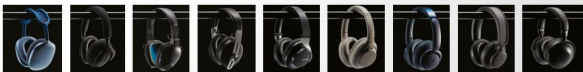
take on proceedings with their solar charging technology.

Ultimately though, it's Sony's WH-1000XM4 that build on that company's vast experience of audio and design to provide stunning sound and excellent noise cancelling performance, at a price that's slightly less than you might expect given the competition.

While perhaps lacking the sheer style of Apple's AirPods Max, they offer the best of all worlds when it comes to sound, price, and performance. And the software, for so long Sony's weak spot, appears to be much improved too.



>How do they compare?



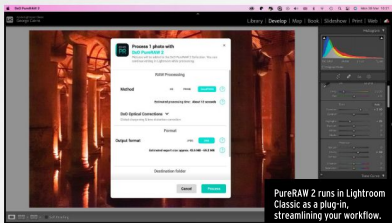
Specs	Apple AirPods Max	Bowers & Wilkins PX7	JLab Studio Pro ANC	Sennheiser Momentum 3	Shure Aonic 40	Sony WH-1000XM4	SoundCore Life Q35	Urbanista Los Angeles	Yamaha YH-E700A
Price	£549	£249	\$99 (about £90)	£349	£215	£259	£129.99	£169	£369
Website	<a href="https://apple.com/uk">apple.com/uk</a>	<a href="https://bowerswilkins.com">bowerswilkins.com</a>	<a href="https://jlab.com">jlab.com</a>	<a href="https://en-uk.sennheiser.com">en-uk.sennheiser.com</a>	<a href="https://shure.com">shure.com</a>	<a href="https://sony.com">sony.com</a>	<a href="https://uk.soundcore.com">uk.soundcore.com</a>	<a href="https://urbanista.com">urbanista.com</a>	<a href="https://uk.yamaha.com">uk.yamaha.com</a>
ANC modes	2	4	4	4	4	3	4	2	2
Battery life	20 hours	30 hours	45 hours	17 hours	25 hours	30 Hours	60 hours	80 hours	35 hours
Fast charge	Yes	Yes	No	No	Yes	Yes	Yes	No	No
Codecs	AAC	aptX Low Latency	AAC, SBC	aptX, AAC, SBC, aptX Low Latency	aptX, HD, AAC and SBC	LDAC	LDAC	SBC, AAC	SBC, AAC, Qualcomm aptX Adaptive
Wired option	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
Companion app	macOS / iOS	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Overall	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★

Note: The final verdict scores reflect the overall opinion of a product and are not necessarily an average of the criteria listed in the table.

# DxO PureRAW 2

Polish a Raw picture's pixels to perfection

> **£115** > FROM DxO, [dxo.com](http://dxo.com)  
> **NEEDS** macOS 10.15.7 or later



PureRAW 2 runs in Lightroom Classic as a plug-in, streamlining your workflow.

PureRAW 2 enables you to revisit very old Raw files in Lightroom Classic and give them a new lease of life

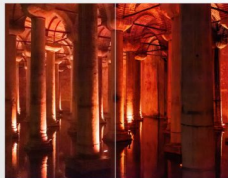
**D**xO PureRAW 2 uses DeepPRIME machine learning to counteract a range of artefacts that can spoil a Raw format photo. It will reduce noise, correct optical lens distortion and colour fringing, counteract vignettted edges and sharpen details. It does this more effectively than the native tools in apps such as Adobe Lightroom Classic. And once PureRAW 2 has preprocessed a shot, you can use Lightroom Classic or Photoshop's Camera Raw tools to process other picture properties such as colour, composition and tone.

The app enables you to revisit old Raw files in apps such as Lightroom Classic. For example, some of your old Raw shots may have been rejected by a stock photography site's inspectors for suffering from too much ISO noise. Now thanks to PureRAW 2's machine learning powers you can smooth out unwanted noise while preserving (and sharpening) important info.

Prior to this latest version, you needed to export your Raw files into the standalone PureRAW application, preprocess the pixels

to reveal more detail, reduce lens distortion and denoise them. You then had to export a DNG version of the cleaned-up file back into a digital darkroom app such as Lightroom Classic for further tweaks. With PureRAW 2, you can access the app directly from within Lightroom Classic as a plug-in. The plug-in is implemented well and any previous noise reduction or lens corrections made with Lightroom Classic's native tools are ignored in favour of PureRAW 2's more effective results. The downside is that it can take a minute or so before the PureRAW 2 processed version appears in Lightroom Classic.

The streamlined workflow lets you browse shots in Lightroom Classic, apply the AI-assisted tools to clean them up and then process them to perfection using Lightroom Classic's wide range of digital darkroom tools. Sadly, you can't enjoy the app directly from within Photoshop Camera Raw as that workspace is already a plug-in to Photoshop. However, you can still process a file in the standalone version of PureRAW 2 and then open it in the Photoshop Camera Raw editor.



On the left is a soft and noisy look from Lightroom Classic. On the right, a sharper clearer shot from DxO PureRAW 2.

## Swings and roundabouts

If you shoot Raw files on iPhone and organise them in Photos, give PureRAW 2 a miss. It doesn't support native DNG files created by the iPhone's Camera app. However if you're a traditional DSLR photographer who has shot in Raw format for years, it's worth investing in, especially if your shots have been organised into a Lightroom Classic catalogue.

PureRAW 2 does do an amazing job of revealing detail while reducing artefacts, making it a valuable addition to Lightroom Classic's toolset and a valuable stand-alone resource. **George Cairns**

## Mac FORMAT VERDICT

> Makes your DSLR's old camera Raw files look better than ever before thanks to AI assistance.



- ★ Standalone app
- ★ Plugs into Lightroom Classic
- ★ Doesn't support native iPhone DNG files
- ★ Takes a while to process on older Macs

# Effie

Focus on your writing

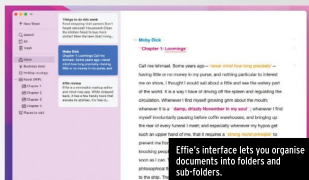
- > **Free** (IAPs) > **FROM** 752P Inc, [effie.pro](http://effie.pro)
- > **NEEDS** macOS 10.13 or later

**E**ffie is a minimalist Markup editor and mind map app.

While stripped back, it has a few handy tools. It's free to download, but some options require a subscription.

Effie uses a three-column layout, with folders, files, and workspace ordered left to right, and you can hide the first two columns to aid concentration.

Press '?' and you'll see a cheat sheet of Markup shortcuts – helpful if you're new to the syntax. You can also add Markup stylings from the Markup menu bar. You can display a character counter and



Effie's interface lets you organise documents into folders and sub-folders.

## Mac FORMAT VERDICT

> A great writing tool that has potential for more.



- Well thought-out features
- Some small bugs and issues

pin it on your writing space. You can also export to various file types and publish to Effie's companion [mindhub.pro](http://mindhub.pro) website or to your own WordPress blog. Publishing a file creates a QR code so you can view it on another device.

Effie is also strong as a mind map tool, with five mind map styles to choose from, including a family tree.

There's a dark mode with a 'Match System' option, but this

didn't work for us, so we had to set dark mode manually. While **⌘+⬅** highlights entire words as it should, **⌘+⬅** does not. And there doesn't seem to be a way to move documents from one folder to another.

Effie lacks some of the advanced tools of rivals, like iA Writer's movable text blocks or syntax highlighting. Overall though, it's an adept Markup editor with some clever touches. **Alex Blake**

# WonderPen 2

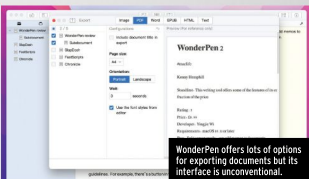
Useful writing tools at a low price

- > **£8.99** > **FROM** Tominlab, [tominlab.com/wonderpen](http://tominlab.com/wonderpen)
- > **NEEDS** macOS 10.11 or later

**T**he feature that differentiates WonderPen from many other writing apps is its document tree.

This sidebar contains thumbnails of docs that you drag and drop to change where they sit in the final document. In that sense, it's a bit like Scrivener's binder. WonderPen shares a few other features with Scrivener, such as the ability to add memos to documents. And there's a whiteboard where you can keep tables, notes, or images.

Many of WonderPen's features are not immediately obvious. There's a typewriter



WonderPen offers lots of options for exporting documents but its interface is unconventional.

mode, and a split-screen mode to view two documents side by side, and snapshots that allow you to create a backup of a document at any stage and return to it should you need to.

Text formatting options are tucked away so that the interface remains uncluttered. The interface itself doesn't conform to standard macOS practice. For example, there's a button in the toolbar that's part of the app that looks like the

Share one in most Mac apps, but is an export button.

Also, there's no iOS or iPadOS version, so you can't sync with iPhone or iPad. And while you can change the backup location to a shared drive, there's no easy way to sync with another Mac.

At £8.99, it can't compete with the Word or Scrivener. But if other apps seem a little overwhelming, WonderPen is worth a try. **Kenny Hemphill**

## Mac FORMAT VERDICT

> There's a lot to like about WonderPen, but many rough edges, too.

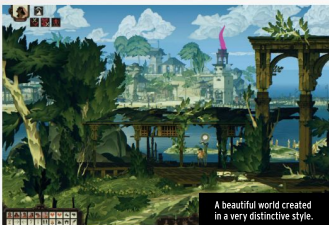


- Split-screen mode
- No iOS version

# Book of Travels

Who said RPGs have to be hectic?

> £23.79 > FROM Might and Delight. [tmorpg.com](#)  
> NEEDS macOS 10.15 or later



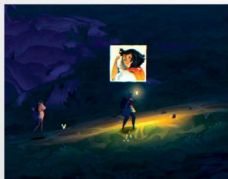
A beautiful world created in a very distinctive style.

You delight in every chance encounter, forming wordless bonds with complete strangers

**B**ook of Travels bills itself as a 'tiny multiplayer online RPG', or a **TMORPG**. It eschews the huge battles and multitudes of players that you'll find in traditional massively multiplayer online RPGs for a much slower pace of life. The game is in early access, but it was so intriguing we couldn't wait to give it a try.

We were hooked right from the off. At character creation, each archetype has various unusual buffs and debuffs, such as having items move around in your backpack because you're disorganised. The land of Book of Travels – the Braided Shore – is a place where magical teas are brewed and letters are written with knotted ropes. The music is esoteric and enchanting, the graphics beautiful and peculiar. Diving in, everything feels otherworldly and original.

Book of Travels' best moments come from interacting with real-world people. While there are reams of AI characters, each server can only host seven human players at a time. The map is large and travel is slow, so meeting another human is a rare and exciting event.



You can't type messages to other players, but you can communicate with emotes.

You can't type or talk to other players, but you can call out or display images and emotes. Conveying your meaning isn't always straightforward, but if you're successful you can pool your abilities, such as working together to lift a heavy boulder that reveals a secret passage. Because it's so unusual to see another player, you delight in every chance encounter, forming wordless bonds with complete strangers to solve problems, find riches, or simply explore the world together.

## Quest notes

Being an early-access game, some elements needed work when we played. Bugs and unfinished ideas were not uncommon. Trading and inventory management, such staples of RPGs, were both lacklustre and uninformative. Combat was also a tad confusing, especially for beginners, but luckily you can mostly avoid it if you want.

Book of Travels is meant to be a slow game where you take a moment to breathe in your surroundings, and it requires patience. There are few fast-travel points and no quest log (so keep a pen and paper handy). However, not every area rewards this pace, and some feel empty and unfulfilling. The lack of fast-travel points makes walking from one side of the map to another feel laborious, especially since you have so little stamina when you run.

Still, that doesn't take away from the magic Book of Travels conjures up. Whether you're immersing yourself in its lore or working with a stranger to overcome an obstacle, it is deeply rewarding, and no matter what you do, it feels like the Braided Shore has more to offer. If you want an RPG bursting with different and original ideas, this is a must-try game. **Alex Blake**

## Mac FORMAT VERDICT

> A deep, engaging world that rewards patience and cooperation. It breaks the RPG mould.



- ★ Makes human interaction magical
- ★ Lots of original ideas
- ★ Gorgeous, immersive world
- ★ Early access quirks

# Get Sum

Shopping for a grocery app?  
You're in luck

> **£1.79** > **FROM** Shihab Mehboob, [penguin.app](#)  
> **NEEDS** iOS 15 or later

The app's power lies in its flexibility, and it can be as simple or as complex as you like

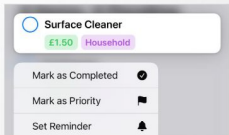
**F**or many of us, plans for grocery shopping are often relegated to a simple bulleted list in Notes. But this option isn't really up to the task, and it quickly falls apart when you want to track prices and sort things into categories. Luckily, Get Sum is a great solution.

Open it up and you'll see a large '+' button - tap this to add the name of a grocery product. You can leave it at that, or tap the item to add details, such as price and quantity. At the top are buttons for settings, filtering, and sorting. The rest of the screen is taken up by your shopping list.

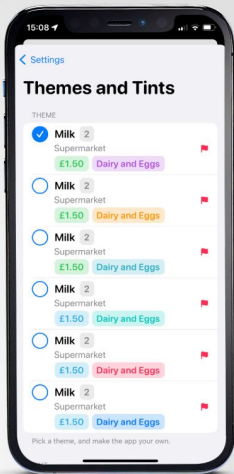
The app's power lies in its flexibility, and it can be as simple or as complex as you like. For instance, you could simply add a few items to a bulleted list in Get Sum and call it a day. At the other end of the spectrum, you can add prices, quantities, images, and store locations. You can define a grocery item as a priority or set a reminder for it. Get Sum gives you the power to add these details if needed, but doesn't require them in order to work.

## Options galore

Underneath all these features lies an almost unbelievable level of customisation. You can change the theme, set new gesture controls, toggle haptics and shadows, enable highlighting, capitalise titles. There are plentiful sorting choices, filtering options, and categories (and you can add your own).



Simply long-press on a list item to access an impressive bevy of filtering or administrative options.



Get Sum looks gorgeous while still conveying plenty of important information.

If control is what you're after, Get Sum provides it in spades.

Get Sum's budgeting tools are somewhat rudimentary. These are mostly confined to spending limits, which can go up to £100 per item (with a custom option as well). If an item exceeds that limit, there are options to remove it or ignore its price. However, in our testing this didn't seem to work - expensive items were added to our lists without consequences, regardless of whether we defined the prices when entering the items or afterwards.

There are a few other things we'd like to see improved. Pricing, for one thing, lacks clarity. When you tell Get Sum that two boxes of cereal cost £2, does that price refer to the cost per box or for both boxes combined? The app doesn't make it clear. As well as that, you can't search for a store's address when adding one. Instead, you need to drop a pin on a map, which isn't ideal if you don't know the shop's location beforehand.

But compared to most of the other options out there, Get Sum is leagues ahead - and it's affordable, too. A deeply customisable, tailor-made grocery list app for just £1.79? That's a bargain we can't resist. **Alex Blake**

## Mac FORMAT VERDICT

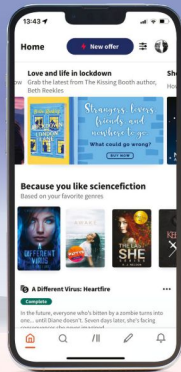
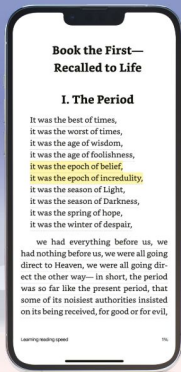
> Get Sum overhauls grocery lists in a clever, attractive way, all for a very reasonable price.



- ★ Plenty of helpful features
- ★ So much customisation
- ★ Looks great
- Budgeting options are a bit weak

# 6 apps to... read and listen to literature

Step into a new world of digital storytelling



## Kindle

> Free (IAPs) > FROM Amazon, [amazon.com/kindleapp](https://amazon.com/kindleapp) > NEEDS iOS 12 or later



The Kindle app has a huge library of titles, including comics and magazines as well as books. It also gives you plenty of control over how those titles appear. You can tweak alignment, margins, fonts, and more to give yourself a truly comfortable reading experience on your device. With bookmarks, zoom, word look up, and many other useful features, the app is ideal for anything you want to read – and it syncs with apps for the Mac and iPad too.

## Libby

> Free (IAPs) > FROM OverDrive, [overdrive.com](https://overdrive.com) > NEEDS iOS 10 or later



You don't have to buy books to enjoy their content – your local library has plenty on offer. You can register your library card, browse your library's catalogue, and access titles from the comfort of your couch. The app enables you to download content to your device for offline reading, and it can also play audiobooks if you prefer to listen to literature. There are customisation options, too, like background colour, book design, and text size.

## Wattpad

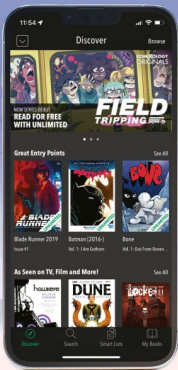
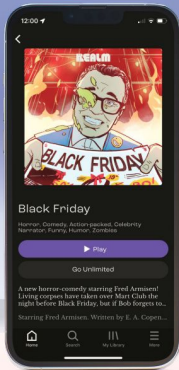
> Free (IAPs) > FROM Wattpad, [wattpad.com](https://wattpad.com) > NEEDS iOS 12.2 or later



This app is all about connecting authors and their fans. Helping readers discover new literature to love, and writers to find and expand their audiences. With a huge community of 90 million users, Wattpad always has something new for you to explore – from sci-fi to comedy, action adventure to romance. With this app's help, you could unearth your next favourite novel, or even write your own, and content is available in over 50 different languages too.

**T**hese days, you needn't read physical books to enjoy literature, because you can do it on your iPhone instead. Whether you want to wolf down the latest bestseller or listen to spooky

podcasts before bed, there are plenty of apps available to sate your appetite for prose, poetry, and more. Here are six of the best – from lending library app Libby to comic book app ComiXology. **Alex Blake**



## Realm

> **Free** (IAPs) > **FROM** Serial Box Publishing, [realm.fm](http://realm.fm) > **NEEDS** iOS 13 or later

**R**Sometimes, listening to literature is even better than reading it. This app shows how true that is. It hosts a plethora of curated shows and stories from best-selling authors, all narrated by famous names such as George Takei (*Star Trek's* Mr Sulu) and Canadian actress Tatiana Maslany. Each audio story is accompanied by a transcript, so you can read along or take it at your own pace. There's even a sleep timer so you can drift away to the dulcet tones of George Takei's voice.

## Overcast

> **Free** (IAPs) > **FROM** Overcast Radio, [overcast.fm](http://overcast.fm) > **NEEDS** iOS 14.5 or later



**P**odcasts have changed the way we listen to literary content. Authors, storytellers, and reporters are taking to the airwaves to share their tales and experiences in bite-sized chunks. Whether you want to listen to works of fiction or the latest dispatches from famous journalists, Overcast is one of the best podcast players you'll find. With tons of clever features – like a voice booster and smart speed controls – it's the ideal companion for your well-deserved downtime.

## ComiXology

> **Free** (IAPs) > **FROM** ComiXology, [comixology.com](http://comixology.com) > **NEEDS** iOS 12 or later



**L**ove Comics? Try ComiXology, which has over 100,000 comics, graphic novels, and manga to choose from. This app serves as an all-in-one comic catalogue, letting you buy and download your favourites from Marvel, DC, Image, Dark Horse, and many more publishers. It's full of features that make reading comics on your device easier, like its Guided View that displays strips panel by panel, making it simpler to enjoy content even on a small iPhone screen.

# STORE GUIDE

EDITED BY **ROB MEAD-GREEN** >

Your complete guide to the best Apple hardware and third-party accessories

EXPECTED  
JUNE 2022  
UPDATED  
APR 2021

## iMac > From £1,249

> Ever since the Bondi Blue iMac debuted in 1998, Apple's all-in-one desktop computer has been setting standards in gorgeous design and powerful performance. And Apple's April 2021 Spring Loaded event delivered the new, colourful 24in iMac, available in Green, Yellow, Orange, Pink, Purple, Blue, and Silver. The larger screen has also been bumped up to a 4.5K Retina display with a 4480x2520 resolution.

Inside, Apple's own M1 chip combines with macOS Monterey, and Apple promises up to 85% faster CPU performance and up to two times faster graphics performance than the 21.5-inch iMac models. All the models come with 8GB of unified memory (upgradeable to 16GB). The 8-core CPU/7-core GPU option comes with a 256GB SSD (configurable to 512GB or 1TB). The 8-core CPU/8-core GPU versions come with either a 256GB or 512GB SSD and can be upgraded to 1TB or 2TB.

The new iMacs all feature a 1080p FaceTime camera, a high-fidelity six-speaker system, a studio-quality three-mic array and support for spatial audio. You'll also find two Thunderbolt/USB 4 ports on each model, with middle- and high-end options gaining two additional USB-C ports. Thunderbolt 2, HDMI, DVI and VGA are supported using adaptors. All come with a Magic Keyboard, with the mid- and high-end versions boasting Touch ID. Prices start at £1,249.

In a surprise move, following its Peek Performance event in March 2022, Apple discontinued the 27-inch version of the iMac - one of the last Intel holdouts in its Mac lineup. While Apple is currently said to have no plans to replace its biggest all-in-one desktop, it may not stay that way for long. Several analysts are predicting that a new iMac Pro may surface either later this year or in 2023, echoing the design of the current 24-inch Mac and possibly sporting M1 Pro or M1 Max chips.



The 24in iMac released in April 2021 brought with it a return of colour to the Apple spectrum.

## > Choose an iMac

	MODEL	KEY SPECIFICATIONS	PRICE
ENTRY LEVEL	24in, M1	MEMORY 8GB of unified memory GRAPHICS Seven-core GPU STORAGE 256GB SSD DISPLAY Retina 4.5K (P3 gamut) ALSO Magic Mouse, Magic Keyboard	£1,249
UPGRADER	24in, M1	MEMORY 16GB of unified memory GRAPHICS Eight-core GPU STORAGE 512GB SSD DISPLAY Retina 4.5K (P3 gamut) ALSO Magic Mouse with Touch ID, Magic Keyboard	£1,849
HIGH END	24in, M1	MEMORY 16GB of unified memory GRAPHICS Eight-core GPU STORAGE 2TB SSD DISPLAY Retina 4.5K (P3 gamut) ALSO Magic Mouse with Touch ID, Magic Keyboard	£2,449

◆ = Retina display



EXPECTED  
OCT 2022  
UPDATED  
OCT 2021



The MacBook Pro 14- and 16-inch models can be specced with either an M1 Pro or an M1 Max chip.

## MacBook Pro > From £1,299

> In October 2021, Apple released the first MacBook Pros with its revolutionary new M1 Pro and M1 Max chips. While the 8-core, 13-inch MBP is still available with an M1 chip, Apple launched new 14- and 16-inch supercharged MacBook Pros.

The base 14-inch model comes with an 8-core CPU but can be configured to 10-core. The 14-inch also comes with either a 14- or 16-core GPU but can be customised with an up-to-32-core GPU. All the 16-inch variations come with a 10-core CPU as standard and an up-to-32-core GPU.

The upgraded CPU is said to offer up to 3.7 times faster performance over its predecessor, while going for the 32-core GPU means up to 13 times faster graphics performance. Combined with the 16-core Neural Engine, the new models boast up to 11 times faster machine learning.

Both models start with 512GB of storage but this can be upped to 8TB. And both can be ordered - thanks to the M1 Max chip - with up to 64GB of unified memory.

The 70W battery in the 14-inch MBP provides up to 17 hours of movie playback and 11 hours of wireless web browsing, while the 100W battery in the larger model offers

up to 21 hours movie watching and 14 hours' web surfing. Both models boast a Liquid Retina XDR display, with a 3024x1964 resolution on the 14-inch model, and 3456x2234 on the 16-inch. Both offer Extreme Dynamic Range (XDR) for up to 1,000 nits of brightness. There are also more ports - an SDXC card slot, HDMI port, 3.5mm headphone jack, MagSafe 3 port, and three Thunderbolt/USB 4 ports. All three models are available in Space Grey or Silver.

### > Choose a MacBook Pro

	MODEL	KEY SPECIFICATIONS	PRICE
ENTRY LEVEL	13in, M1 8-core CPU, 8-core GPU	MEMORY 8GB of unified memory STORAGE 256GB SSD TOUCH BAR Yes TOUCH ID Yes	£1,299
UPGRADER	14in, M1 Pro 8-core CPU, 14-core GPU	MEMORY 16GB of unified memory STORAGE 512GB SSD TOUCH BAR No TOUCH ID Yes	£1,899
HIGH END	16in, M1 Max 10-core 32-core GPU	MEMORY 64GB of unified memory STORAGE 8TB SSD TOUCH BAR No TOUCH ID Yes	£5,899

Liquid Retina XDR

EXPECTED  
MAR 2022  
NEW  
MAR 2022

## Mac Studio

> From £1,999



> Launched in March 2022, the new Mac Studio takes all the things we love about Apple silicon and turns them up to 11.

Looking like an oversized Mac mini, its capacious aluminium body is still remarkably compact for a desktop Mac, measuring 197x197x95mm, but it's what's inside that really counts.

The £1,999 entry-level model packs the same M1 Max chip as the MacBook Pro, with a 10-core CPU, 24-core GPU and 32GB of unified memory, but it's the step-up models that are the most interesting.

That's because you can also buy a Mac Studio with the M1 Ultra - a powerhouse piece of Apple silicon with a 20-core CPU, and up to 64 graphics cores, as well as up to 128GB of unified memory. Storage options also scale up to an impressive (and impressively expensive) 8TB.

With M1 Ultra Mac Studio prices starting at £3,999, it's not for everyone - particularly as you'll also need to add a display, a keyboard and a mouse or trackpad too. But even the base model gets a decent array of connectivity options, including 4x Thunderbolt 4 ports, 2x USB-C ports, 10Gb Ethernet, HDMI 2.0, Wi-Fi 6 and Bluetooth 5.0.



The rear of the Mac Studio is awash with ports, including HDMI and a headphone jack.

STOP

EXPECTED  
OCT 2022  
UPDATED  
NOV 2020



The M1-equipped MacBook Air (Late 2020) is an incredible portable performer.

## MacBook Air > From £999

> **Apple's thinnest, lightest laptop now also gets the M1 treatment.**

And without a price hike too, as prices still start at just £999. The next-step model (with increased SSD storage and 8-core GPU) even costs £50 less at £1,249. Like the MBP, Apple's own unified memory silicon enables faster performance and better graphic speeds. And the 16-core Neural Engine results in nine times faster machine learning.

It may be Apple's most affordable laptop, but the MacBook Air certainly doesn't feel like a budget machine, thanks to its 100% recycled aluminium unibody, and 13.3-inch LED-backlit Retina display, which has a resolution of 2560x1600 (227ppi) and True Tone, which automatically adjusts the display's colour temperature depending on the ambient light.

The inclusion of the M1 chip has changed none of the Air's physical characteristics - the portable laptop is still just 1.61cm thin, and weighs 1.29kg. Despite the performance boost, the Air is now fanless, using an aluminium heat dissipating panel instead - which also means that it runs in complete silence.

The base model comes with an 8-core CPU, but a 7-core GPU, and 256GB SSD storage. While on the step-up model, the CPU and GPU are both 8-core, and the storage starts at 512GB. Both offer the option to upgrade to 16GB memory, and are configurable with increased

storage; you can add up to 2TB of SSD storage for £800 on the entry-level model or £600 on the 8-core GPU version.

The M1 MacBook Air can be teamed with Apple's Pro Display XDR, although none of the M1 Macs can be used with an external GPU (eGPU). You also get Touch ID for secure logins, and a Force Touch trackpad.

The MacBook Air is also equipped with two Thunderbolt/USB 4 ports and a headphone socket. The laptop now supports 802.11ax Wi-Fi (aka Wi-Fi 6), has Bluetooth 5.0 onboard, and comes with a 720p FaceTime camera for video chats.

So with the new internal upgrades, does the MacBook Air still boast its legendarily long battery life? Yes, and some! You can now get up to 18 hours of Apple TV app movie playback, or 15 hours of wireless web surfing, thanks to its 49.9Wh battery. Like the earlier 2020 incarnation, the new MacBook Air comes with Apple's Magic Keyboard for fast, fluid typing.

### > Choose a MacBook Air

	MODEL	KEY SPECIFICATIONS	PRICE
ENTRY LEVEL	13in, M1 8-core CPU, 7-core GPU	MEMORY 8GB of unified memory STORAGE 256GB SSD TOUCH BAR No TOUCH ID Yes	£999
UPGRADER	13in, M1 8-core CPU, 8-core GPU	MEMORY 16 GB of unified memory STORAGE 2TB SSD TOUCH BAR No TOUCH ID Yes	£2,049

EXPECTED  
JUNE 2022  
UPDATED  
NOV 2020



## Mac mini > From £699

> **Despite a near two-year wait for the last update to the Mac mini, within just eight months Apple released it again, adding the homegrown M1 chip in December 2020.**

The processor boasts far superior processing and graphics performance to the Intel innards of the previous incarnation. Like the MacBook Pro and MacBook Air, the base model starts with 8GB of memory that can be boosted to 16GB. The SSD options go from 256GB all the way up to 2TB.

The Mac mini now supports Wi-Fi 6 and Bluetooth 5.0. You get two Thunderbolt/USB 4 ports, as well as two USB-A ports, an HDMI 2.0 port and a 3.5mm headphone jack.

The entry level Mac mini is available for £699. Taking it to its max memory and SSD capacity will set you back £1,699. The 3.0GHz Intel Core i5 model is still available from £1,099.



## Studio Display

> £1,499

> **Launched alongside the Mac Studio in March 2022, the Studio Display is a great addition to any Mac setup.**

Powered by Apple's A13 Bionic and running iOS, it features a 27-inch Retina display with 5K resolution (5120x2880 pixels) and True Tone, a 12MP Ultra Wide camera with Centre Stage, and a six-speaker sound system with support for Spatial Audio. A range of stand options are available, and you can choose nano-texture glass for £250 more.

EXPECTED  
SEPT 2022  
UPDATED  
SEPT 2021



## iPhone

> From  
**£679**

> In September 2021, Apple launched the iPhone 13 family of handsets. All four models boast many of the same features... Apple's A15 Bionic chip, Super Retina XDR screen with True Tone, Portrait mode, HDR video with Dolby Vision, 5G, Face ID and Haptic Touch.

The Pro model has a 6.1-inch display, and there's a 6.7-inch screen on the Pro Max version. These two handsets boast LiDAR scanners and ProMotion tech, and 5-core GPUs. The Pro and Pro Max come in 128, 256, 512GB or 1TB storage options. While all the handsets offer a 12MP camera system, the Pro and Pro Max boast an additional Telephoto lens.

The iPhone 13 and 13 mini only come in 128, 256 and 512GB storage options. The display measures 6.1in on the standard handset, and 5.4in on the mini.

All the handsets are water resistant up to 6m and compatible with MagSafe.

### > Choose an iPhone

	MODEL	KEY SPECIFICATIONS	PRICE
ENTRY LEVEL	iPhone 13 mini (5.4in Super Retina XDR)	CAPACITY 128GB PROCESSOR A15 Bionic FACE ID Yes CAMERA 12MP photos (dual lens), HDR video	£679
UPGRADER	iPhone 13 (6.1in Super Retina XDR)	CAPACITY 128GB PROCESSOR A15 Bionic FACE ID Yes CAMERA 12MP photos (dual lens), HDR video	£779
HIGH END	iPhone 13 Pro Max (6.7in Super Retina XDR, ProMotion)	CAPACITY 1TB PROCESSOR A15 Bionic FACE ID Yes CAMERA 12MP photos (triple lens), ProRes video	£1,549

EXPECTED  
SEPT 2022  
UPDATED  
SEPT 2021



## iPad

> From  
**£319**

> This autumn, Apple brought out the 9th-gen iPad 10.2in featuring an A13 Bionic chip with Neural Engine and a 20% faster GPU. The front-facing camera finally incorporates a 12MP Ultra Wide lens, with support for Apple's new Center Stage feature, and the display boasts True Tone technology.

The iPad is great at multitasking. You can slide a second app over the right side of the one you're working on. Picture in Picture enables you to watch video in a corner of the screen. There's also Split View, which lets you work on two apps side by side. iPad also supports external drives and, since the iOS 14.5 update, Xbox Series X and PlayStation 5 DualSense controllers for more immersive gaming.

The new iPad comes in 64GB or 256GB options. Now only available in Silver or Space Grey.

### > Choose an iPad

	MODEL	KEY SPECIFICATIONS	PRICE
ENTRY LEVEL	10.2in iPad	CAPACITY 64GB PROCESSOR A13 Bionic CONNECTIVITY Wi-Fi CAMERA 8MP UNLOCKING Touch ID	£319
UPGRADER	10.9in iPad Air	CAPACITY 64GB PROCESSOR A14 Bionic CONNECTIVITY Wi-Fi CAMERA 12MP UNLOCKING Touch ID	£579
HIGH END	12.9in iPad Pro	CAPACITY 128GB PROCESSOR M1 CONNECTIVITY Wi-Fi CAMERA 12MP UNLOCKING Face ID	£999

EXPECTED  
MAR 2023  
UPDATED  
MAR 2022



## iPad Air

> From **£569**

> After a major redesign in 2020, this year's model builds on that success. Still sporting the same slim chassis and 10.9-inch Liquid Retina display, the 2022 model now comes with an M1 chip, making it 60% faster than before. Other additions include a 12MP Ultra Wide camera with Centre Stage, 5G on Wi-Fi+Cellular models and a faster USB-C port. Storage options start at 64GB and top out at 256GB.

## Apple Watch

> From **£369 (Series 7)**

> The world's number one smartwatch now has a bigger, always-on Retina display.

Along with the two new size options (41 and 45mm), the Watch Series 7 has a narrower bezel than before and even supports a full-size QWERTY keyboard as well as two new Watch faces.

Aside from also now boasting an S7 SiP, the Watch is otherwise largely unchanged from last year, sporting the same W3 and U1 chips, as well as an 18-hour battery life.

It also makes the most of new watchOS 8 features such as the new Mindfulness app, the redesigned Home app and other enhancements.

## Apple TV 4K

> From **£169**

> In April 2021 Apple unveiled the sixth generation of its media streamer. Running an A12 Bionic chip and its own OS (tvOS), the model offers 4K high frame rate HDR. You get Apple TV+, as well as access to third-party content. You can also use it to play Apple Arcade games, run Apple Fitness+ content, stream photos and your music library, and more. The Siri Remote has been redesigned with an improved touch-enabled clickpad.



EXPECTED  
OCT 2022  
UPDATED  
OCT 2021

## BEST BUYS... Curated picks of third-party kit >

> **DESKTOP SPEAKER**

**Ruark MRI**

**£329.99** [ruarkaudio.com](http://ruarkaudio.com)



> Winner of MF357's head to head, the MRI speaker set looks and sounds the business. The dome tweeter and long-throw woofer can handle a variety of audio styles with aplomb. You get a good variety of connectivity options, and you love the chunky function/volume dial too.

> **IN-EAR WIRELESS EARPHONES**

**Beats Fit Pro**

**£199.99** [beatsbydre.com/uk](http://beatsbydre.com/uk)



> The Beats Fit Pro are compact and sporty in design with integrated silicone ear hooks. The earbuds match Apple AirPods Pro almost

feature for feature, and cost nearly £40 less. You get Apple's H1 chip, Active Noise Cancelling (ANC), Find My, Siri support and Spatial Audio with dynamic head tracking. What's more, these Beats boast longer battery life than the AirPods Pro.

> **KEYBOARD (MAC/iOS)**

**Logitech MX Keys Mini**

**£99.99** [logitech.com](http://logitech.com)



> Beautifully and solidly made from aluminium with 79 largely concave, backlit plastic keys, this angled keyboard looks great on your desk and feels even better under your fingers, making it easy to type accurately and at speed. The keyboard can be paired with up to three separate devices, and you get a dedicated Emoji button and mic mute/unmute buttons too.

> **QHD DISPLAY**

**ViewSonic VP2768a ColorPro**

**£379** [viewsonic.com](http://viewsonic.com)



> If you're looking for a screen for creative colour work, the 100% sRGB VP2768a ColorPro should be a definite contender.

The frameless 27in 2K QHD display offers a 2560x1440 resolution, and a 14-bit 3D lookup table that generates 4.39 trillion colours. In terms of connectivity, there's an integrated Gigabit Ethernet port, USB-C, USB3.2 Gen 1, HDMI, and a DisplayPort.

> **PRINTER**

**Epson Workforce WF-110W**

**£199.99** [epson.co.uk](http://epson.co.uk)



> Epson's Workforce WF-110W is supremely portable with an integrated rechargeable battery that has good longevity, plus there are flexible connectivity options and a nicely designed iOS app. The onboard screen and controls make setup and operation easy, and black-and-white print quality is excellent, with colour certainly acceptable.

> **WI-FI ROUTER**

**Zyxel Multy U WSR30**

**£199** [zyxel.com/uk](http://zyxel.com/uk)



> Zyxel's Multy U mesh router hits the sweet spot, offering great performance at a competitive price, making it ideal for homes and small offices. The AC2100 router offers up to 280Mbps with a range of 6,000sq ft, and the nodes are easy on the eye, too. The companion app comes with helpful speed tests and diagnostic tools, as well as parental controls.

> **STREAMING SOUNDBAR**

**Sonos Beam**

**£449** [sonos.com](http://sonos.com)



> The second-generation of this streaming soundbar features a five-speaker array for a deep, rich soundstage. You get Wi-Fi, Ethernet and HDMI eARC connectivity options, and Alexa and Google Assistant built in. Dolby Atmos is supported, and the digital signal processor simulates surround sound. The Sonos app is easy to use and you can also stream audio over AirPlay 2.

> **EXTERNAL SSD**

**OWC Envoy Pro SX SSD**

**£345.99** (ITB) [owcdigital.com](http://owcdigital.com)



> Our SSD top spot used to belong to OWC's FX version of this drive, but this cheaper model is a tough cookie that offers excellent read and write speeds. It's IP67 rated so it's crush-proof, dust-proof and waterproof and is plenty zippy in the file transfer department. The SX SSD is limited to Thunderbolt/USB 4 but you can always use it with an adaptor.

> **MACBOOK BAG**

**Hex Technical backpack**

**\$149.95** (about £110) [hexbrand.com](http://hexbrand.com)



> Looking for a bag that hits the sweet spot for generous storage and stylish looks? Look no further. The Hex Technical's 17.5-litre capacity is made up of device-hugging padded pockets for a MacBook (up to 16in), iPad, power bank and more. The bag is waterproof and has a 1680D Cordura ballistic bottom so it's also reassuringly rugged.

**BEST BUYS...** Curated picks of additional apps >

## &gt; PHOTO EDITOR (MAC)

**Luminar AI**From £59 [skylum.com](https://www.skylum.com)

> If you want to improve your photos without spending too much, this is the app for you. If you're worried that you don't have

the know-how for technical image edits, this is also the app for you! The software uses artificial intelligence (AI) to analyse your photos with templates for various categories, instantly enhancing your shot. And, once the AI has worked its magic, you can make your own easy tweaks.

## &gt; TO-DO (MAC/IOS)

**Todoist**From Free [todoist.com](https://todoist.com)

> Task management apps should be clear and simple but with features on hand for you to be as productive as possible. Todoist

provides that platform, and the Premium £3.99 tier in particular gets our vote. The interface is very easy to navigate and the comprehensive toolset is accessible without being overwhelming. The price includes both Mac and iOS apps, file uploads and collaborative tools.

## &gt; VIDEO EDITOR (IOS)

**LumaFusion 3**£25.99 (IAPs) [luma-touch.com](https://luma-touch.com)

> The accomplished video editing suite can now download from various cloud services and read directly from a USB-C or

Thunderbolt drive – files can be edited at source. The Lock & Load feature provides presets and fine-grained controls for stabilisation, and a graphic equaliser can enhance or diminish audio frequencies. The interface also allows you to easily resize various windows.

## &gt; TEXT RECOGNITION (MAC)

**TextSniper**£6.99 [textsniper.app](https://textsniper.app)

> Not only can TextSniper extract and recognise text from anything you see on your Mac's screen, it can do so very quickly.

The app can handle just about any type of copy – be it a screenshot, PDF, scanned photo document, and so on. It's easy to use, works almost instantly, and we're really impressed with its accuracy. If you need a decent text recognition app, try this excellent affordable option.

## &gt; DISK UTILITY (MAC)

**Carbon Copy Cloner 6**£29.45 [bombich.com](https://bombich.com)

> If you're finding Time Machine backups somewhat inflexible, look no further than CCC for your replacement.

Carbon Copy Cloner 6's comprehensive feature set includes flexible backups, disk cloning and snapshot management. A help book is on hand which also links to the company's online Knowledge Base, so you're always assured of access to technical and specialist advice.

## &gt; CALENDAR &amp; TASKS (MAC/IOS)

**Fantastical 3**

From £3.25 per month

[flexibits.com](https://flexibits.com)

> If your calendar and reminders are getting out of control, Fantastical can sort things out. It has support for natural

language entry, so you can enter events and reminders as you would say them. It's got a nifty menu bar shortcut, plus a great interface, clever calendar management and a powerful iOS app. Its predecessor won MF338's group test.

## &gt; NOTE-TAKING (IOS)

**Notability 10**£8.99 [gingerlabs.com](https://gingerlabs.com)

> Notability is a very flexible note-taking app. It can combine different mediums, such as

illustrations, handwriting and audio recordings, and import PDFs and scan documents. Version 10 also brings an in-house Shop for purchasing additional stickers, themes and features, such as handwriting conversion. The app works well with Apple Pencil and supports a range of cloud-based services.

## &gt; SCANNER/OCR (IOS)

**Genius Scan+**£7.99 [thegrizzlylabs.com](https://thegrizzlylabs.com)

> Genius Scan uses your iOS device's camera and processing power to deliver comprehensive scanning and text-

recognition capabilities. The free app (Genius Scan 6.0) provides document detection, background removal, distortion correction, as well as the ability to export to PDF and create multi-page PDFs, but the £7.99 Genius Scan+ (available as an IAP) introduces a superb OCR engine.

## &gt; EMAIL MANAGER (MAC/IOS)

**Spark**Free [sparkmailapp.com](https://sparkmailapp.com)

> Feeling inbox anxiety? The solution could be Spark, our favourite iPhone email app after winning MF340's

group test. Its 'smart inbox' prioritises emails based on perceived importance – no more vital messages getting lost in a sea of spam. You can snooze messages to be reminded about them later, and search your mailboxes using natural language. And to top it all off, it's free.

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[www.williamgibbons.co.uk](http://www.williamgibbons.co.uk) Tel: 01902 730011

**DISTRIBUTED BY**

Marketforce, 5 Churchill Place, Canary Wharf, London, E14 5HU  
[www.marketforce.co.uk](http://www.marketforce.co.uk) Tel: 0203 787 9001

MacFormat ISSN 0969-3028, is published monthly with an extra issue in June by Future Publishing, Quay House, The Ambury, Bath, BA1 1UA, UK.

The US annual subscription price is \$58.37 (airmail and mailing in the USA by agent nearest Rhode Island, No. 150-9 8938 St., Jamaica, NY 11435 USA)

Application for Mail at Prevalence Postage Prices is Pending at Newport, Rhode Island, 02840

US POSTMASTER: Send address changes to MacFormat, World Customer Inc, 15015 85th St., Jamaica, NY 11435 USA

Subscription records are maintained at Future Publishing, c/o All Business Subscriptions, Woodhead House, Parkwood Road, Heywood, Rochdale, West Sussex, RH16 3DA, UK.

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## RANDOM APPLE MEMORY

## Power Mac G4 Cube

Former MacFormat editor Graham Barlow thinks Apple's new Mac Studio reminds him of something...

**W**hen you first cast eyes on the new Mac Studio, it's hard not to be reminded of the old Power

**Mac G4 Cube.** The G4 Cube, was released back in 2000 and was one of Apple's first attempts to produce a powerful, small form factor desktop computer without a built-in screen. The Cube itself was something of a Marmite design - a 7.7-inch computer housed in a box of clear acrylic, making it look like no computer had ever looked before. Some people loved it, others weren't sure what it was and some people thought it looked like a box of tissues.

Of course, Apple's golden boy Jonny Ive designed it, and it looked like it belonged to the same family as his other classic computers, like the iMac and the Power Mac G4. But if we're honest, it was a little more towards the 'toaster' end of the design spectrum than anything else he'd done.

As a computer the Cube wasn't half bad, but it had its problems. For a start it was quite expensive for the amount of power it provided, then there was limited expandability and the see-through acrylic started to crack on some models. To fit all the components of a computer into such a small frame, Apple had made some radical design decisions for the time. There were no expansion slots available to the user - instead you could only attach peripherals via USB. Also, the power supply was located externally to save space and the Cube shipped with round Harman Kardon speakers and a digital amplifier, which you also had to find room for on your desk.

Unfortunately, the Cube didn't really have an audience and it was an immediate commercial flop, selling only 150,000 units before being suspended. It was too expensive for the budget end of the market and too limited for the professional end. And so, the Cube was 'suspended indefinitely' in July of 2001. But while the Cube goes down in history as a failure, its legacy lived on as it went on to



The G4 Cube was Apple's first desktop computer without a built-in screen.

influence the Mac mini, and the 'trash can' Mac Pro. And now the Mac Studio is here to remind us that cubes never really went out of fashion, it just took Apple a long time to find one that we (or at least pro creatives) could really get excited about.

## ABOUT GRAHAM BARLOW

Graham Barlow is MacFormat's Editor-in-Chief. He first edited the mag in 2004 when an Apple iBook with G3 processor running OS X 10.3 Panther was 'cool', and cost a month's salary. As a podcaster, his favourite piece of Apple tech these days is his AirPods.







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