

The UK's best selling Mac magazine

> Issue 367 > August 2021
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Mac FORMAT



ON TEST:
New M1 iMac
> iPad Pro 12.9in > Apple TV 4K

FIRST LOOK



macOS Monterey

> What's in your next free Mac upgrade

PLUS

> iOS/iPadOS 15, watchOS 8 and tvOS 15 updates



Win!
> CorelDRAW Graphics Suite, prizes worth **£598**

AMAZING PROJECTS

PROJECTS

Tips, tricks and incredible apps for Mac, iPhone, iPad and Watch



Lock down your logins

> Easily secure all your devices



New reviews

- > ViewSonic M2e projector
- > Fauna audio sunglasses
- > Keychron K3 keyboard



Get started with AirTag

> Track down your stuff



You're spoilt for choice when it comes to all things Apple this issue. We kick off with news of the latest updates to macOS, iOS, iPadOS, watchOS and tvOS on p6 and p14, and then starting on p74, you'll discover in-depth reviews of the new iMac 24-inch, iPad Pro 12.9-inch and Apple TV 4K.

In between, you'll find plenty to surprise and delight you - in our massive 13-page lead feature (p18), you'll find 57 ways to do more with all of your Apple devices - from tips and tricks to make using them easier, to incredible apps and features, as well as plenty of things to see and do.

On p58 we turn our attention to the Apple Watch, which has turned from a nice-to-have luxury to the most personal computer you'll ever use over six generations. Our eight-page feature will show you how to make the most of it.

Also inside the issue are 22 pages of Genius tips and how-tos that cover everything from decluttering your Mac to making socially distanced band compositions. Plus there's a back-to-basics guide to Apple's spreadsheet app, Numbers on p67, a weather apps group test (p86), and our pick of the best gardening apps (p96) to help you make the most of the summer. You'll also be able to enjoy in-depth reviews of Fauna's stylish audio sunglasses (p83) and much, much more. Enjoy the issue and take care,

ROB MEAD-GREEN
EDITOR
 editor@macformat.com

Meet the team



Jo Membery
Operations Editor

> Jo's so taken with her audio sunglasses that she's now wearing them indoors. Or at least that's why she says she's wearing them... Hmm...



Paul Blachford
Art Editor

> Paul's really excited about Universal Control in macOS Monterey. He can now seamlessly share his cat memes from any device. Joy.



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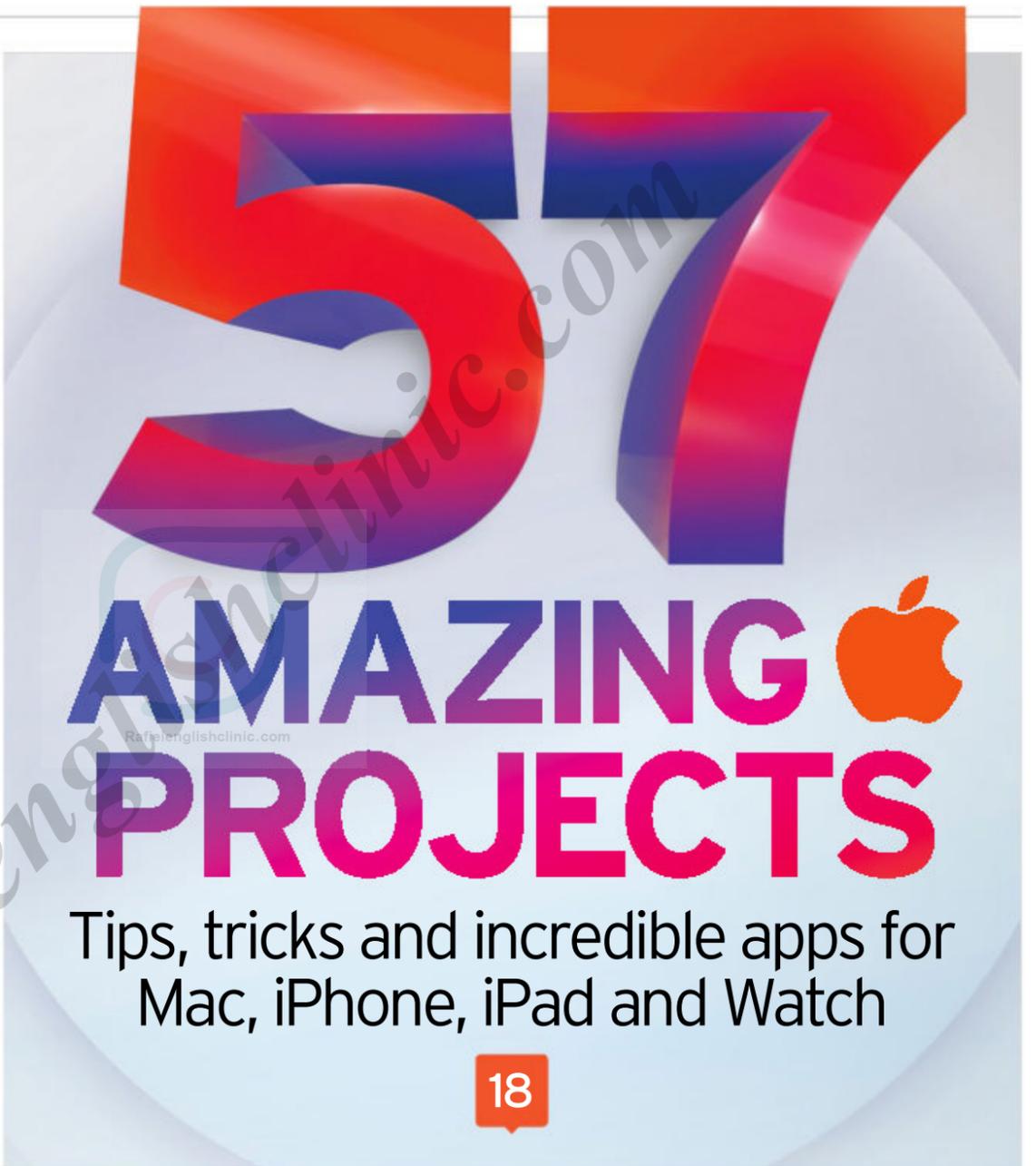
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> WWDC 2021 - macOS Monterey, iOS 15, watchOS 8, and more...



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APPLE CORE

EDITED BY **ROB MEAD-GREEN** >



HOT TOPIC!

Can your iPad replace your Mac?

If your work involves heavier workloads, you will probably want to stick with a Mac for now.

It might be time to switch thanks to iPadOS 15

Apple's Worldwide Developers Conference (WWDC) keynote, on 7 June 2021, featured no new hardware, to the disappointment of anyone hoping for a new MacBook Pro or an AirPods redesign. But that doesn't mean it was totally devoid of interesting news - as we discuss in MacFormat Investigates on page 14, it was full to the brim with new software features.

Some of those updates weigh in on what's becoming an age-old question: can you now replace your MacBook with an iPad? Ultimately that depends on how you use both devices, but the new features in iPadOS 15 will certainly have an impact on that.

At WWDC, Apple spent a lot of time talking about iPadOS 15's new multitasking abilities, which are a step up from what was possible before. For instance, multi-window management is an oft-requested feature among iPad power users, and Apple is now granting it with iPadOS 15. If you have multiple app windows, you can switch between them using a kind of 'shelf' that acts a little like a Dock for that specific app.

As well as that, you can now start a new Split View by simply dragging one app on top of another in the App Switcher. Or tap the top of an app window and you'll reveal new controls to quickly start Split View, Slide Over, or make

AirTag gets anti-stalker update

AirTag, Apple's device-tracking product that can clip to a keyring or be stashed in a bag, has been updated to better protect users against tracking efforts by bad actors.

When AirTag was released at Apple's Spring Loaded event in April, the company said it had designed privacy into the product. Yet concerns were raised that someone with bad intentions could conceal an AirTag in your belongings and use it to track you. This issue was compounded because AirTag would only buzz three days after being separated from its owner, making it much easier to hide one without



An update now means an AirTag separated from its owner will make a sound within 24 hours.

it being noticed. Apple has now issued a software update that makes AirTag play a sound between eight and 24 hours after being separated, making it easier to detect an unwanted AirTag. In addition to that, Apple is working on an Android app that will alert you if it detects an unknown AirTag, like the Find My app does on iPhone. Apple has said the Android app will be ready later in 2021.

the app full screen. While these multitasking tweaks and improvements are not particularly revolutionary, they should help to alleviate some of the gripes with previous incarnations of iPadOS.

If you love the iPad's form factor and want a portable device to be your main daily driver, iPadOS 15 might be enough to make you switch from Mac. Pair it with a keyboard case and it becomes a lightweight laptop that, in the iPad Pro at least, has the same M1 chip as many of the latest Macs. In fact, the iPad does plenty of things the Mac cannot, thanks to its touchscreen and Apple Pencil support.

The pro user problem

There is a snag, though. The M1 chip inside the new iPad Pro means it blows away just about every other tablet on the market, but hardware has never been the iPad's main shortfall. Instead, it is being held back by



The gap is closing on macOS and iPadOS, but the divide means benefits and frustrations with both.

the same software that Apple made such a fuss about at this year's WWDC. The new features in iPadOS 15 are a good start, but they still deliver less flexibility and ease of use than you get on a Mac.

Most average users can probably live with that, but for power users the situation is much worse. Apple makes iPad and iPhone apps available on the Mac using a framework called Mac Catalyst, but steadfastly refuses to let apps flow the other way, leaving the iPad with hobbled versions of video editing and music production apps. If that is your main workload, you will likely lament the lack of full-powered Mac apps on your tablet.

There is a probable cause: Apple does not want to cannibalise its own products. If it makes iPad software more capable, people might wonder why they need a Mac at all. That makes sense, and for a lot of users, the updates to iPadOS are more than enough. If you are a power user, though, you might be left frustrated that your iPad cannot do more.

So, back to that age-old question. For a huge number of people, the iPad is now quite capable of replacing their laptop, offering plenty in the way of productivity and entertainment while adding some neat new productivity type features in iPadOS 15. If you have demanding work, though, the likelihood is you will be sticking with your Mac for the foreseeable future.

Mac
FORMAT

THE POLL

WE ASKED...

What's your favourite new feature from WWDC 2021?



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

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iPhone 13: 1TB storage and LiDAR scanner

> According to Daniel Ives at industry analysts Wedbush, the iPhone 13 Pro and iPhone 13 Pro Max could come with up to 1TB of storage. Ives also predicted that all models in the iPhone 13 range would come with LiDAR scanners as standard, a feature that is currently restricted to Apple's Pro and Pro Max phones.

However, reputable analyst Ming-Chi Kuo stated in March 2021 that LiDAR would remain a top-end exclusive for the Pro and Pro Max devices. Leaker Jon Prosser, who claims to have obtained CAD files of the iPhone 13 range, also doubted that all iPhone 13 models would gain LiDAR scanners. Time will tell who is correct.



The LiDAR scanner is currently only found in the iPhone 12 Pro and iPhone 12 Pro Max.

APPLE NEWS ROUNDUP

APPLE WATCH REDESIGN

NEW COLOURS AND FLAT EDGES

> Apple Watch 7 could come in a range of colours. According to leaker Jon Prosser, Apple is testing “new experimental colours” for the device’s body. Prosser’s renders depicted Watches in red, pale green, light blue, and more. Prosser also stated the Apple Watch 7’s body will also feature flat-edged sides, which follows a report from analyst Ming-Chi Kuo in September 2020 that advanced a similar idea.

AIRPOWER NOT DEAD YET - REPORT CHARGER ALLEGEDLY STILL IN THE WORKS

> After teasing AirPower in 2017, Apple ditched its wireless charging mat, reportedly due to overheating concerns. Yet it might not be dead - Bloomberg’s Mark Gurman has stated Apple is “exploring a future wireless charger” that could work similarly to AirPower. The company is also experimenting with wireless chargers that can juice up over the air, he claimed, but this is “several” years away.

Future iPads could get OLED displays, with the iPad Air most likely to be the first in line.

OLED panels coming to future iPads

LCD screens are on the way out

After rumours persisted for months, Apple released its first miniLED display at its Spring Loaded event in April 2021. This screen was outfitted into the iPad Pro, upgrading it from an LCD panel and giving it superb colours and contrast, making it the best display in any Apple tablet. According to South Korea’s ETNews, other iPads will also move on from LCD panels, with OLED the most likely replacement tech.

The report from ETNews does not go into too many specifics, and instead says only that “some” iPad models will get OLED displays starting in 2022. While the report is a little vague, there are a few substantial reasons

to suspect the iPad Air will be the first to make the leap to an OLED display. One is that reliable industry analyst Ming-Chi Kuo stated in March 2021 that he expects the iPad Air will switch to OLED displays in 2022, with Apple reserving a miniLED display for the iPad Pro. That would give the iPad Air a noticeable improvement in display quality without undercutting the iPad Pro’s flagship status.

As well as that, the iPad Air was the first iPad to follow the iPad Pro and abandon the Home button, and is seen as the next down the pecking order below the iPad Pro. It therefore stands to reason it will be the next to ditch LCD panels as well.

New iPads on the horizon

Both iPad Pro and iPad mini in line for some major changes

Apple will update the iPad Pro and the iPad mini with new features and designs, says Bloomberg’s Mark Gurman.

The redesigned iPad Pro is due to be released in 2022, while the iPad mini is scheduled for later this year.

According to Gurman, the iPad Pro will get a glass back to allow wireless charging, replacing the current aluminium surface and bringing it in line with the glass-backed iPhone. Apple is also testing a MagSafe charger for the iPad Pro, plus a ‘reverse wireless charging’ feature that would let the tablet wirelessly charge an iPhone that is placed onto its surface. It is not clear if either

of these features will be ready in time for the next iteration of the iPad Pro.

The iPad mini, meanwhile, will get thinner bezels and could ditch its Home button, says Gurman. That could mean it joins the iPad Pro and iPad Air in having an all-screen display. Gurman also claimed Apple is working on a

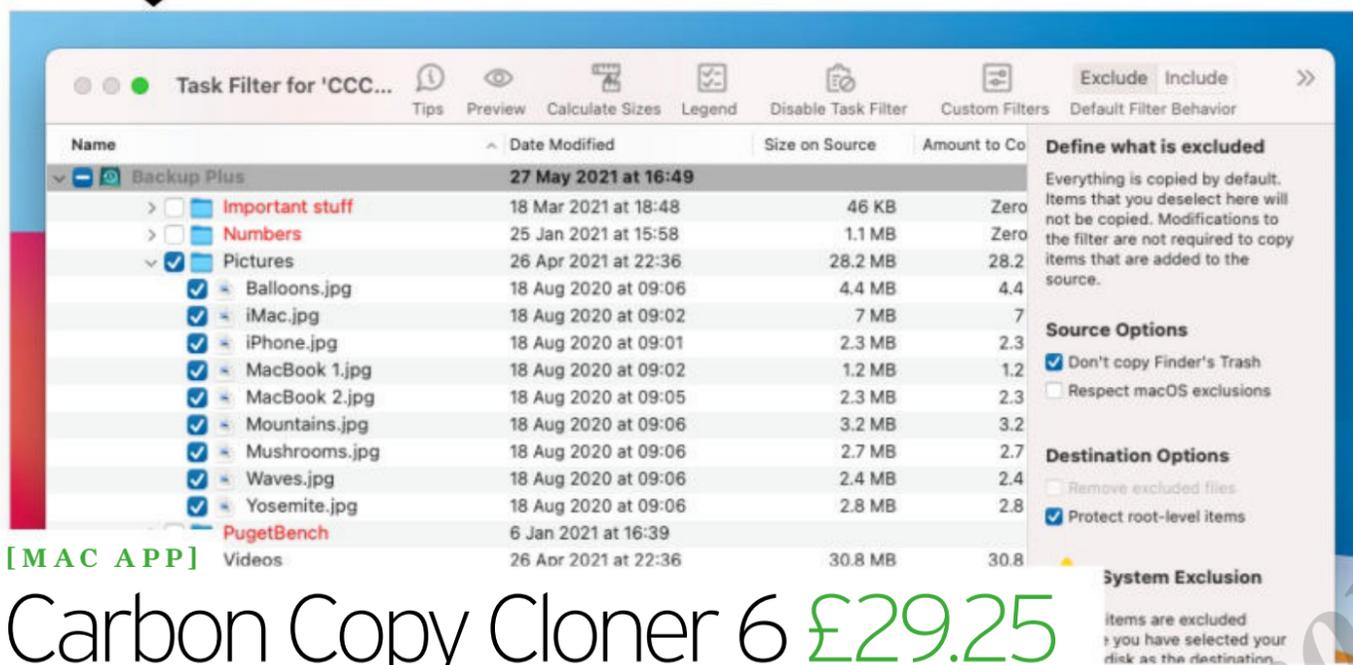
thinner entry-level iPad aimed at students, which could be released around the same time as the new iPad mini.

Gurman cautioned that these new features were still being tested and could be changed or cancelled in due course. If they come to fruition, though, they would be intriguing updates.

The iPad mini could soon get its first update since March 2019.



APP OF THE MONTH



[MAC APP]

Carbon Copy Cloner 6 £29.25

Backing up your Mac gets faster and easier



When it comes to backups, Carbon Copy Cloner (CCC) can be a lifesaver. It goes beyond what Time Machine offers, with fine-grained backup options. Version 6 brings a selection of new features, and its wide-ranging overhaul touches almost every area of the app. The changes combine to make using the app speedier and snappier. For example, CCC's file copier has been revamped, resulting

in backups that complete up to 20 times faster. You can now preview exactly what each backup process will do before you start, too. The result is less time spent backing up and more confidence when you do it.

There's a new menu bar widget for quick tasks and alerts, a Backup Audit and a Snapshot Navigator to make examining backups easy, a new interface with dark mode, and more. Check out our review next issue!



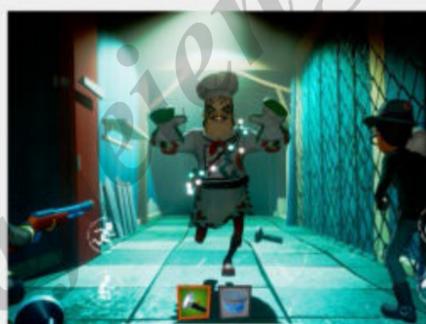
[iOS APP]
AR Pianist - 3D Piano Concerts

FREE (offers IAPs)



> AR Pianist makes clever use of augmented reality (AR) to help you learn piano. It can listen to what you're playing and show you what to play next, and the AR piano superimposes piano keys that you can play in real time. You can even watch AR concerts with virtual pianists.

Why you need it: AR tech meets musical virtuosity.



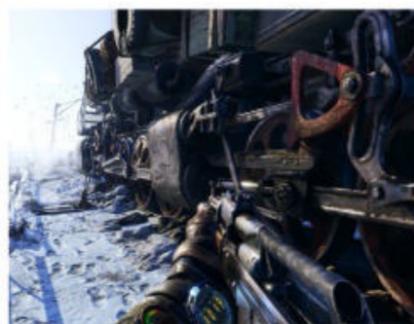
[iOS GAME]
Secret Neighbor

FREE (offers IAPs)



> A spin on 2017's Hello Neighbor, Secret Neighbor tasks you and a group of friends with infiltrating a neighbour's basement to uncover their dark secret. Yet one of your group is the neighbour in disguise - can you uncover them before they pick you off and suspicion tears your team apart?

Why you need it: Tension and mistrust breed excitement.



[MAC GAME]
Metro Exodus

£54.99



> Guide a group of survivors from the shattered ruins of underground Moscow across post-apocalyptic Russia in search of a future for humanity. Metro combines stunning visuals, immersive stealth and frantic combat to forge a superb survival game. Now on Mac, you get all the expansion packs included, too.

Why you need it: It's a top-tier gaming experience.

Media Picks

> What you should be playing and reading this month

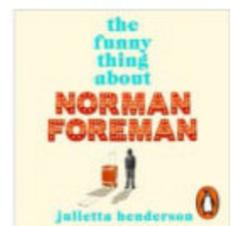


[ALBUM]

Hi

Texas
£6.99

> The latest album from a resurgent Texas sees them mix soulful rhythms with unexpected twists and influences from the 70s and 80s. It's their best album in years.



[AUDIOBOOK]

The Funny Thing...

Julietta Henderson
£7.99

> After his friend's death, 12-year-old Norman begins a journey to look after his mother, find his father, and become a comedy legend. Heart-wrenching and hilarious.



[PODCAST]

Simplify

> If you despair at life's complexity, let the Simplify podcast try to help find ways to manage habits, health, happiness, and more.

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Crave

THE GEAR WE'RE LUSTING AFTER



1

DJI FPV Combo

> £1,249 > dji.com/uk

> **All it takes is a little move of the lens position to turn a camera drone from a serene filming experience into a full-on thrill ride of a flyer; placing the camera on its nose makes DJI's first-person-view drone the latter.** Of course, the idea is you'll be using

the FPV to make a big move rather than a little one, so it's a camera made to be viewed through goggles at speed: a 150° 4K viewpoint - broadcast at HD resolutions back to DJI's own headgear at up to 120Hz - gives you a slick experience, essential in a world where

low frame rates can cause motion sickness. Every early report says it's an absolute blast to fly, and while we don't see DJI troubling the dedicated racing drone market any time soon, this seems to be the best way for a beginner to get into the world of face-first flying.

2

Kasa Smart Video Doorbell

> £TBC > tp-link.com/uk

> **Kasa's home security products all have two things in common - they're cheap and they work well.** The Smart Video Doorbell, then, has the chance to be a really popular option. It stores locally on a MicroSD card or can send footage to the cloud, sports a full 2K sensor capturing footage in 1080p, has built-in face recognition, two-way audio, a plug-in chime released alongside it, and everything else

you'd expect from a smart doorbell. And all at what will almost certainly be a lower price than its rivals.

We say 'almost certainly' because parent company TP-Link has so far said little. We're not even sure when the Smart Video Doorbell will be out, but if previous trends hold true, keep a look out for an even cheaper specced-down version potentially landing under the TP-Link brand.

3

Devialet Phantom I

> From **£1,890** > devialet.com

> Devialet's new speaker, the Phantom I, can hit between 103dB and 108dB depending on how much you spend. Both models make the most of Devialet's fondness for acronym-based technology: the company's patented ADH (Analog/Digital Hybrid) amplification; SAM (Speaker Active Matching) tech

accurately balances the amplifier to the output of the drivers; ACE (Active Cospherical Engine) doctors sound output to emit it evenly in all directions; and HBI (Heart Bass Implosion) smashes you around with sound. There's better connectivity, too, with the ability to now plug in analogue sources.



4

Nomadplug

> **\$76.44** (about **£55**) > nomadplug.com

> **The Nomadplug has been on our gadget radar since it was first Kickstarted in 2018, but it's only now coming to the market.** A travel adaptor that

(at last!) doesn't look like it was designed and manufactured in the 1970s, the Nomadplug is modular, colourful, and clever, and suitable to just toss

in your bag. You can chop and change to convert any kind of plug into any other, and the socket section cleverly folds down so you won't be creating a tripping hazard if it's plugged into the wall. It also includes a matching 18W USB-C charger, itself adaptable to fit international plugs, so you can (in theory) cut down on the number of devices in your hand luggage.



5

Pixels

> From **\$40** (about **£30**) > pixels-dice.com

> **Tabletop gaming has taken a serious knock over the past year, and so many sets of polyhedral dice remain unrolled.** But what if there was a way to smarten those platonic solids up; get them connected to the world? That, to us, is the real selling point of the Pixels.

They can have all the flashing lights they like, and indeed they do pack individual

RGB LEDs that can glow through translucent dice or shine only through the numbers on the opaque versions, but it's their connectivity that really sells them. Roll, and your phone will know exactly what you've rolled; in turn, that means your gaming friends playing on services like Roll20 will know about it - and they'll know you haven't been fudging any rolls.





MATT BOLTON...

IS REDISCOVERING HIS MUSIC THANKS TO SPATIAL AUDIO, BUT HASN'T DECIDED YET IF HE ACTUALLY LIKES IT OR NOT...

This issue, I wanted to write something about spatial audio, because it's just arrived in the Music app as I write this, yet only a fraction of people who see that Dolby Atmos logo next to songs will be able to actually try it, because it remains limited to AirPods Pro and AirPods Max owners so far. Well, I say people will see the Dolby Atmos logo next to songs, but the selection it's available on right now is both limited and kind of odd – an alarming amount of hair metal and 2000s emo rock – so maybe you won't see it that often yet.

And the reason I want to tell you what it's like is because it's... not what I expected.

It's not the same as increasing the quality of your music source, or even your speaker system. But it is a *little* bit like that. And it's not like moving from mono to stereo. Though it's not *not* like that.

Spatial audio is like listening to a live version instead of a studio recording

What it's most like is listening to a live version of an album instead of the regular studio recording. Not a live album recorded on stage with a crowd, and the chaos that comes from that. It's a live version like Pink

Floyd in Pompeii, playing a deliberately different and crafted version of a song you know. But it feels even more like you're there, because of the object-based nature of the format.

Dolby Atmos' big innovation is that it can support sounds as 'objects' – rather than just having songs flattened into a set number of sound channels, instruments can all remain as

their own individual elements, which means they can be positioned in 3D in your ears, and treated in different ways. I'd actually say that music sounds more like 2.5D than 3D – like you've opened it from being flat on the page to being a pop-up book. It's not like it's coming from all around you, but it's not pumping straight from headphones into ears any more. There's a bubble around you with music positioned in it. Adding to this is that all the parts of the track feel more separated, like they're being played by a group of people, rather than being squished into one file.



I've been listening on AirPods Max, but there's an AirPods 3-shaped hole in this entire conversation. Coming soon, surely.



Weirdly, Atmos tracks are all quieter, so having the volume way up (as we have here) is necessary.

As I mentioned, though, the mixes have been tinkered with. Voices are raised or lowered, instruments have new effects, extra flourishes are thrown in. I kind of hated it at first – like someone snuck in and swapped my pillow for another one that's really nice, but I liked my old one! Still, I started switching back to the non-Atmos version of songs just as a trial, and they felt so... flat. I immediately missed having Lady Gaga warbling around my head like a tuneful ghost who haunts me.

Now I'm enjoying working through as many Dolby Atmos songs as I can find just to hear what the new spin on them is. So it's fair to say I'm coming around quickly. Though I'm getting to the point where all that's left is Sum 41, so I really hope Apple has a robust schedule for adding new songs.

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 hyperbole, but still gets warm and fuzzy on hearing "one more thing".

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Win

A copy of CorelDRAW Graphics Suite 2021 for all your graphic design needs

> Whether you work with vector projects or digital painting and pixel editing, CorelDRAW Graphics Suite 2021 is a superb option. As we said in *MF365*, it is “an excellent choice for almost any graphic design work.” This issue, two lucky winners will each receive a one-year subscription to the suite.

The Graphics Suite comes with several bundled apps, with one of the best being CorelDRAW. This vector drawing tool is perfect for all manner of graphic design tasks, from preparing marketing materials to creating detailed architectural blueprints

to making beautiful artwork and illustrations. It is full of new features, including perspective and progressive image-editing tools, plus a more flexible design space. It even lets you collaborate and comment in real time on almost any device.

If pixel painting is more your style, there's Corel PHOTO-PAINT. This has had a major update, and we love the revamped colour replacement tool. PHOTO-PAINT is even better when paired with an iPad and Apple Pencil in Sidecar mode, letting you make quick, fluid, pressure-sensitive adjustments that feel utterly natural.

There's even more included, like Corel Font Manager that comes with over 1,000 bundled fonts, the AfterShot 3 HDR raw image editor, the PowerTRACE bitmap-to-vector tracer, and much more. That means whatever your flavour of graphic design, you will have the tools on hand to do the job.

> THE QUESTION

To be in with a chance of winning one of two one-year subscriptions to CorelDRAW Graphics Suite 2021, just answer this question:

How many fonts are included with CorelDRAW Graphics Suite 2021?

- A) 250
- B) 500
- C) Over 1,000

> For more information about CorelDRAW and Corel's other apps for your Apple devices, head to the company's website at corel.com.

HOW TO ENTER...

- > To enter the competition, you can visit our website at bit.ly/MFCorelDRAW (web address is case sensitive).
- > For full terms and conditions, go to bit.ly/MFCorelDRAW. 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 **26 July 2021**. Over 18, GB residents only.
- > The winners' details will be shared with Corel Corporation for the purpose of providing prizes.

Mac FORMAT

INVESTIGATES



macOS Monterey, iOS/iPadOS 15 and watchOS 8 revealed!

Discover the new features coming to your Apple kit this autumn – from major FaceTime changes to iCloud+

WRITTEN BY **CHARLOTTE HENRY** >



Whatever Apple device or services you use, there was a lot packed into Tim Cook's WWDC

2021 keynote address in June.

iOS and iPadOS 15 were previewed, as were watchOS 8 and tvOS 15. For developers, there were a host of new APIs too. One of the fun bits of information that we learn at every WWDC is what the latest version of macOS will be called. Apple has once again decided to continue the theme of naming it after places in California, calling the upcoming iteration 'Monterey', and it looks like

it'll be known as macOS 12 too – if the screenshots of the developer beta posted online prove to be accurate.

macOS Monterey

Productivity is key to macOS Monterey. For instance, it will bring Shortcuts to the Mac, meaning you can more easily perform regular tasks. Both pre-built actions and fully customisable options will be available, with Shortcuts Editor coming to the Mac too. It will also be possible to import existing Automator workflows into Shortcuts, and Shortcuts will be integrated across the whole operating system, including Finder,

Spotlight, and Siri. Any Shortcut can be shared with one click the same way other links currently can be.

AirPlay to Mac will enable you to share content from an iPhone or iPad and play it on a Mac whilst also using the computer's speakers. There are new accessibility features coming to the Mac too, including alternative image descriptions from Markup and improved Full Keyboard Access and new cursor customisation options.

On all devices

Many of the new features previewed will work across macOS Monterey,

For our latest
subscription offer
see page 32!





WWDC21

iPadOS and iOS. This includes Quick Note, which lets you jot down notes on any app or website in order to capture a thought or idea. Links from an app, websites in Safari or addresses in Maps can be saved within Quick Notes.

These are all saved in the Notes app, which is getting a refresh too. Mentions will enable you to tag friends, family, or co-workers so they can be kept informed and collaborate with you, and the handy Activity View gives an overview of everyone's' edits. Tags can be added to Notes to make them easy to find in the new Tag Browser and tag-based Smart Folders.

One of the new features that really caught our eye is Live Text, which works across iOS, iPadOS and macOS. It means any writing contained in a photo can be turned into text on your Mac, iPhone, or Pad. The examples used in the keynote included a photo with a phone number on an awning outside a restaurant. With all the new operating systems, you will be able to highlight that kind of text and make the call directly. Another good example from the presentation showed notes written on a whiteboard. Take a snap and all the points written down can be converted into text in a document. Brilliant.

Then there's Focus. This is a set of tools that lets users decide what alerts get through and even influences the layout of a device's Home Screen. There are both out-of-the-box and customisable options on all devices. On iPhone and iPad, it's possible to create Home Screen pages with apps and widgets that apply to different settings.

More FaceTime

FaceTime took up a significant chunk of the presentation, mostly thanks to SharePlay. This lets a group of people watch or listen to the same content at the same time. It works with Apple Music 



Continuing with the theme of California landmarks, Craig Federighi introduces Monterey.

and third-party content providers including Disney+. Apple is taking a leaf out of Zoom's playbook too, enabling you to schedule calls in FaceTime and send other participants a link. And this even works on Android and Windows devices via the web.

An upgrade for Safari

The Safari web browser is getting an upgrade across all platforms. The colour of the tab bar will dynamically change to match whichever website you're currently on. Also new are Tab Groups, which will let you save and organise a group of webpages around a topic or project and these sync across Mac, iPhone and iPad.

iCloud+

iCloud+ is premium iCloud, but with more features and at no extra cost. Many of the additional features focus on privacy. They include Hide My Email, which generates a random, single-use email address, useful



SharePlay means you can share all sorts of content with friends or colleagues on a FaceTime call.

For Apple silicon only >

> While there are lots of exciting new features in Monterey, a significant number of them will only work on Macs powered by an M1 chip (and, no doubt, future generations of Apple silicon). The new Portrait Mode in FaceTime, Live Text in photos, and improvements to maps such as a 3D globe of the earth and more detailed maps in major cities, including London, will only work on M1 machines. And the expansion of text-to-speech to more languages, and on-device and unlimited keyboard dictation, will also not work on Intel Macs. This is particularly notable because a lot of Mac users still have Intel devices, and Apple is even expected to release new ones in the future, with an Intel-equipped Mac Pro reportedly scheduled for next year.

for when you're signing up for things; expanded HomeKit Secure Video support; and iCloud Private Relay. The latter is similar to a VPN. It routes your web traffic through other servers, hides your IP address from websites, and hides your web traffic. It also adds a second server to the chain, meaning that not even Apple can follow you around the web. iCloud+ will work on all Apple devices running iOS 15, iPadOS 15, and macOS 12.

Other privacy controls

Building on App Tracking Transparency, Apple is introducing Mail Privacy Protection. This will enable you to decide whether emails can collect data about you, such as whether you've opened a message opened or not.

macOS Monterey also comes with a recording indicator, just like in iOS 14, enabling you to see whether apps are accessing your microphone or not.

iOS 15

Weather is getting an overhaul in iOS 15. It will offer full-screen maps and the layouts will change based on the condition. The animated backgrounds are being redesigned too in a bid to better reflect the position of the sun and precipitation levels. There will be notifications that highlight when rain or snow starts and stops.

Maps has also been upgraded. There will be enhanced details in cities to provide better reflections of neighbourhoods, commercial districts, elevation, and buildings. There are also new road colours and labels, as well as



Focus enables you to filter notification types so you can receive important info but not be distracted by other stuff.

custom-designed landmarks. And Maps will finally get a new night-time mode too.

iPadOS 15

iPadOS 15 will finally bring the full widget experience to iPad, after mysteriously missing out last year. You will be able to customise and place different-sized widgets on your Home Screen with new widgets for the App Store, Find My, Mail, Contacts and more. iPadOS 15 also sees the arrival of an iOS 14-style App Library on iPad, making it easy to cut Home Screen clutter, while neatly automatically arranging apps by category.

Multitasking has been improved with a new menu at the top of apps, making it easier to access Split View and Slide Over mode (see p6), but one of the most impressive additions is Universal Control, which enables you to seamlessly move files between your iPad and Mac using your Mac's trackpad. You can even use your Mac keyboard to type on iPad too.

The iPhone's Translate app is also coming to iPad in iPadOS 15, enabling you to receive live translations during face-to-face chats. Finally, Swift Playgrounds is coming to iPad, enabling you to create and submit your own app to the App Store from the device.

And there's more... >

> **Apple crams a lot into its keynote presentations, and there were a lot of new things in all the updated operating systems.** There are also features that don't quite make it to the stage (or screen). Here are some of the new features that you may have missed.

> **Low Power Mode** - this mainstay of mobile devices is now coming to your Mac, helping you to keep it running longer when you can't charge.

> **Account Recovery Contacts** - users can set these to help make it easier to regain access if you need to reset your password and regain access to your account.

> **Digital Legacy** - each user can designate people as Legacy Contacts who will be able to access the account should they pass away.

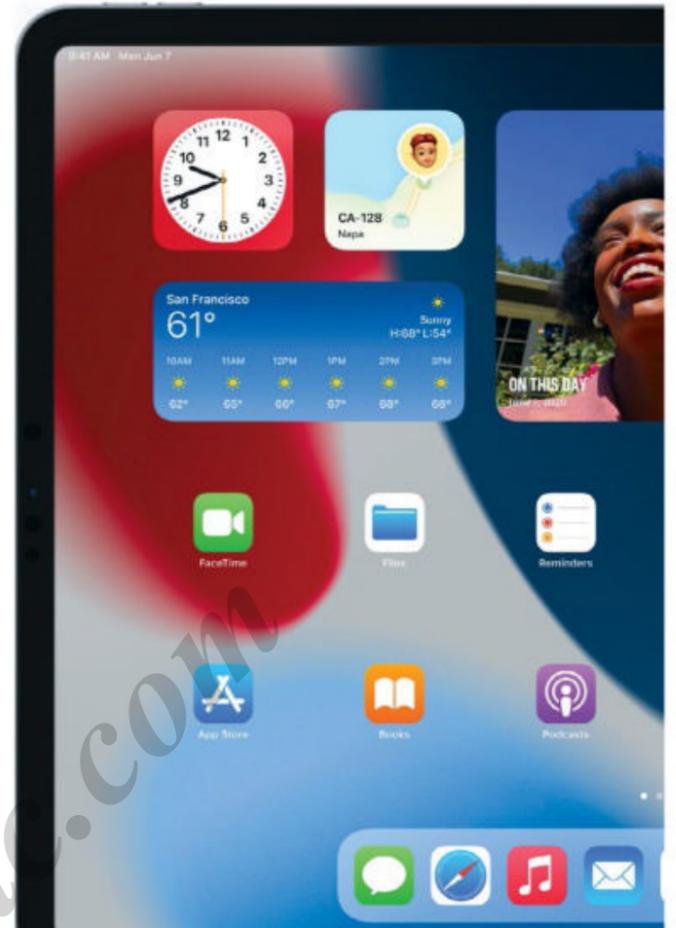
> **Translation** - available system-wide, you'll be able to translate text from a web page, photo, etc.

> **Notifications for AirPods** - in iOS 15, Siri can announce notifications on AirPods.

> **Spatial audio** - AirPods Pro and AirPods Max will deliver surround sound and 3D audio when used with your Mac.



macOS is getting spatial audio support with AirPods Pro and Max.



A little late to the iPad party, iPadOS 15 brings the full Widgets experience to the tablet screen.

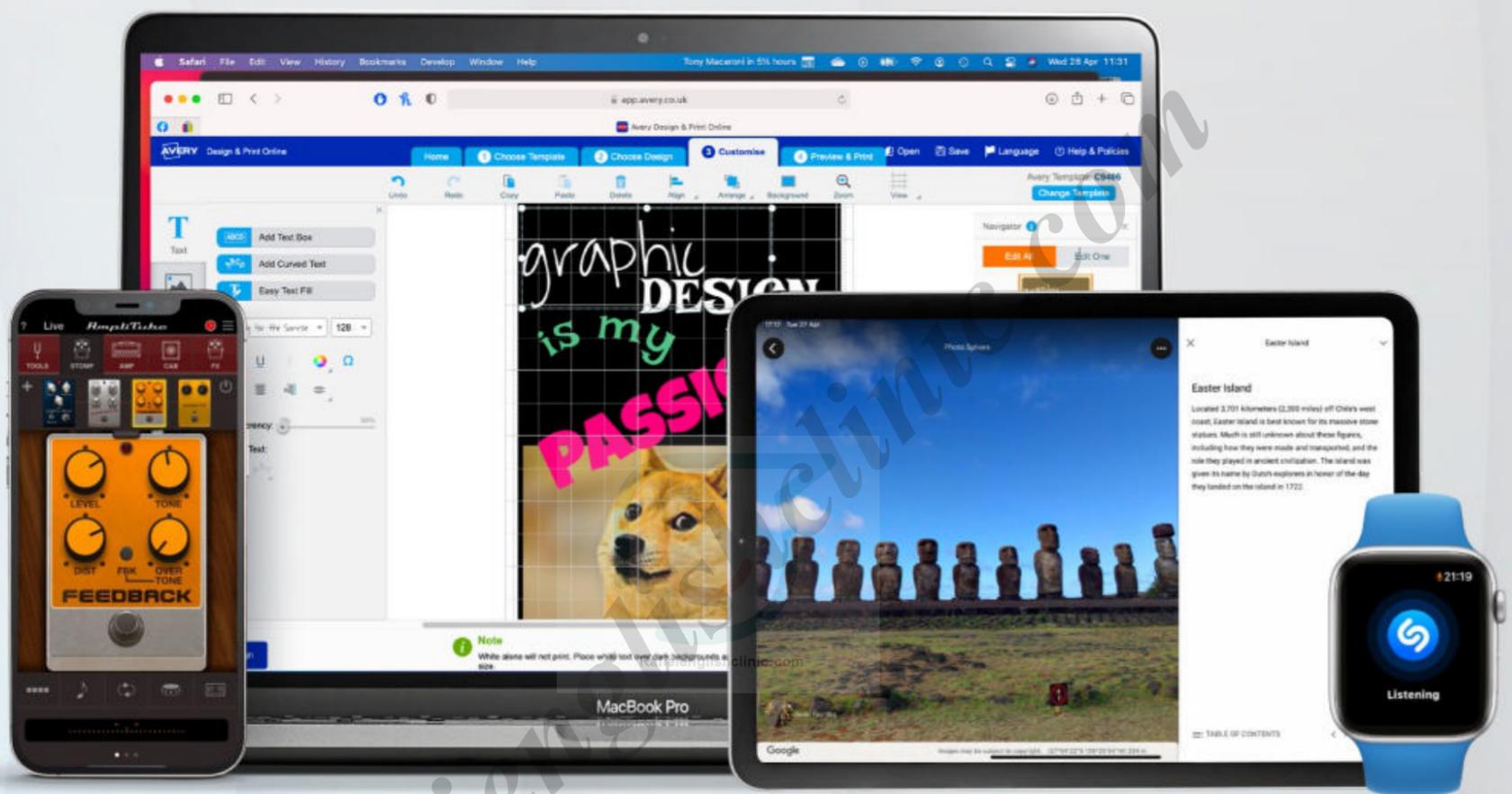
watchOS 8

Big changes are coming to the Apple Watch. watchOS 8 will bring a redesigned Home app and improvements to messages, enabling you to combine Scribble, dictation, and emoji in one message. Also new is the Contacts app, plus Breathe is being renamed Mindfulness and will offer improved breathe functionality and include a new Reflect session type. Fitness+ is also getting new sessions - Tai chi and Pilates. Staying with health and fitness, watchOS 8 will also enable you to track your sleep respiratory rate. Accessibility features designed to support those with limb differences is also new.

Apple made a big deal about new Key functionality that is part of both iOS 15 and watchOS 8 (on an Apple Watch Series 6) - participating car manufacturers and other providers will enable you to use your watch or iPhone to unlock things like your vehicle, your hotel room, and so on. US users will be able to store ID cards too.

tvOS 15

While tvOS doesn't normally get major changes, new features this year include SharePlay and Shared with You, as well as spatial audio. You'll also be able to set your HomePod mini as the default audio output, instead of having to select it manually.



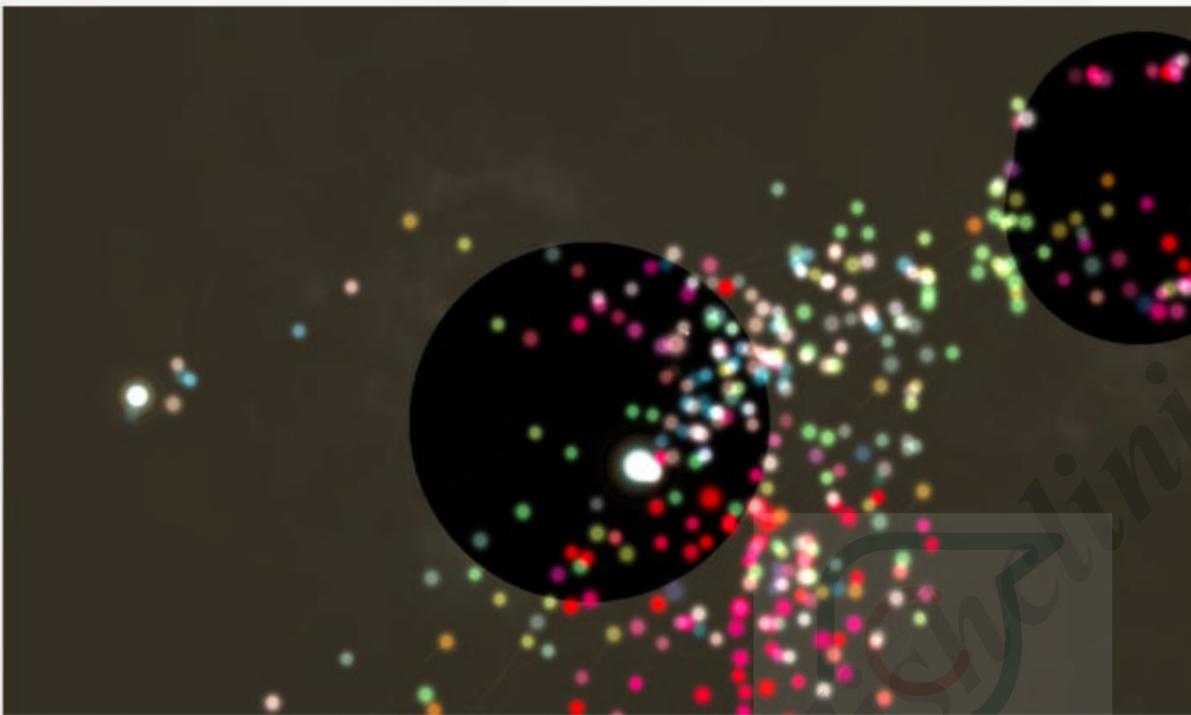
What do you love most about your **Apple devices?** For us it's that every one of them is packed with possibilities. There isn't a single day that passes when we don't discover something new our Apple devices can do, whether that's a cool thing baked into the operating system, an app that opens up a whole new world or a toggle that can turn off some of life's irritations.

In this guide, we're going to share some of our favourites from the whole Apple hardware family.

Whether you've got an M1 Mac or an iPad Air, an Apple TV or an Apple Watch, an iPhone or an iPod touch we think you'll find some surprising things in these pages: apps to excite and delight, features that'll save you valuable time, tools to help you get things done and things that'll bring you some fun when the work or school day is done. Some are serious, some are spectacular and some are silly; whether you're a Mac beginner or an experienced Apple aficionado, we think you'll find some useful ideas, apps and projects here.

Surprising things you can do on your Mac

Work, play and everything in-between



See your music

1 In the Music app (or iTunes on older macOS versions), you can display a psychedelic light show which reacts to the music as it plays.

Press **⌘+T** to start and the **⌘+I** key to display the keyboard controls: **M** changes display mode, **A** and **S** add and subtract bits to or from the light show and **I** shows or hides the track info. If you want to keep it old-school,

select Window > Visualiser Settings > Classic Visualiser and you can see the visualiser from the original iTunes. It's the same menu option to go back to the modern visualiser, but this time just choose Visualiser.

Want to see it on your smart TV? If it has AirPlay you can mirror your Mac display and see the light show on the big screen.



Do more with Spotlight

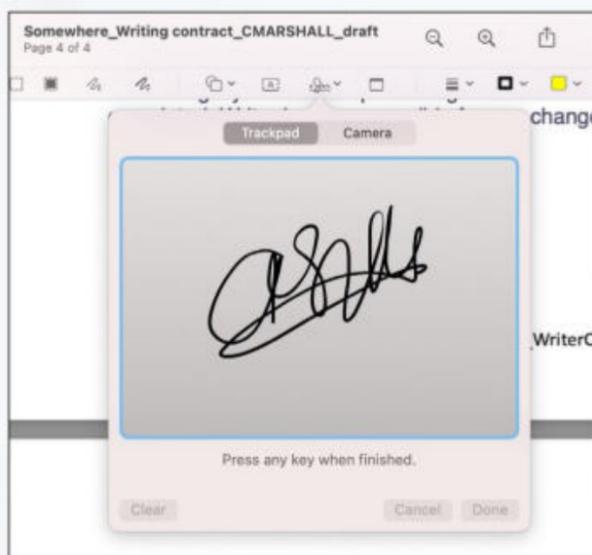
2 Spotlight isn't just there to find files and launch apps.

It can also save you from opening Safari when you need to perform a quick calculation or conversion. For example, if you press **⌘+[spacebar]** and then type '999 USD in GBP', it'll do the currency calculation for you; if you type '68F', it'll convert it to Celsius; and if you type '1249/36', it'll work out the monthly cost of buying a new 24in iMac over a three-year period.

Spotlight also enables you to search with specific criteria, such as 'kind: PDF', to get definitions by using the keyword 'define', to get the weather for a location by typing 'weather London' or get football scores with 'Man United scores'.

Sign your name

3 Need to sign a document? No problem: if you have a Mac laptop or a Magic Trackpad you can handwrite on the trackpad to sign PDFs. Simply open the document in Preview, click on the Markup logo next to the Search box and then look for the Signature icon. Select Create Signature and you can now sign with your finger.



Print T-shirts

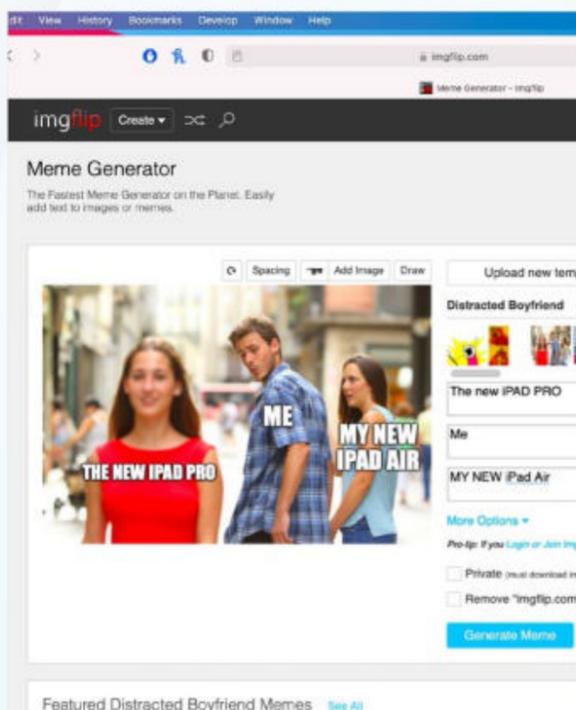
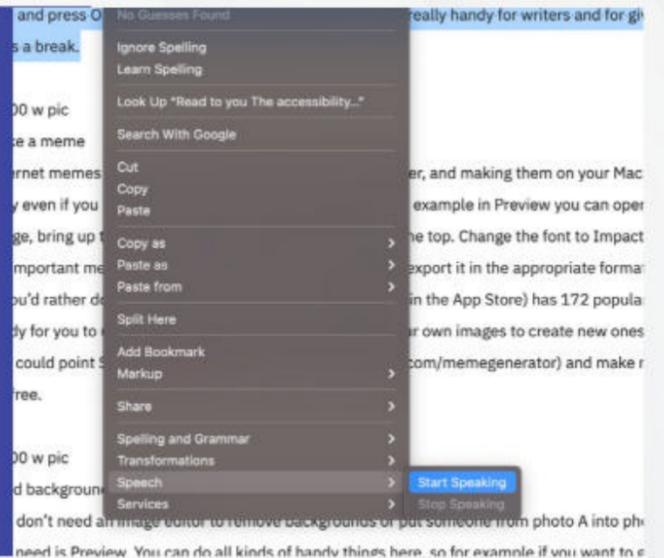
4 Avery makes T-shirt transfers to print and iron on to any garment, and has an online tool to help you with the design. Pop along to avery.co.uk/fabric-transfers, go to Templates > Design & Print, and you can do everything in Safari. Once you've printed the transfer, it just takes two minutes to apply.

Make secret notes

5 Keychain is a great password manager, but it's also a great place to keep secure notes that nobody else can access. Launch Keychain Access (it's in Applications > Utilities) and then click on File > New Secure Note Item. Once saved, the note will be password-protected so only the title is visible.

Read to you

6 The accessibility features in macOS include something that's really useful for everyone: **Speak Selection**. Once enabled in System Prefs > Accessibility > Spoken Content, you can highlight text and press **⌘+esc** to have your Mac read it out. It's really handy for writers and for giving your eyes a break.

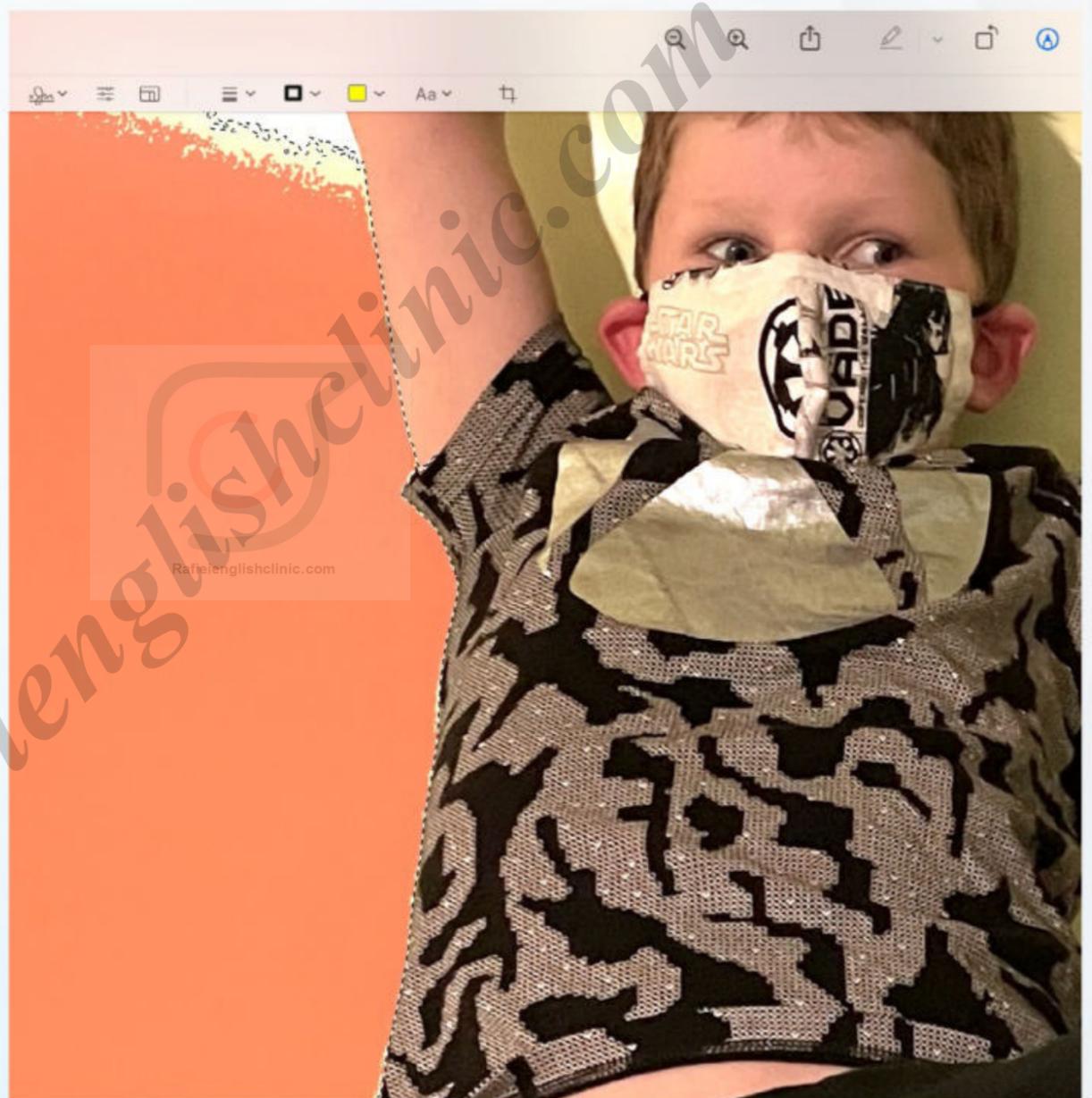


Make a meme

7 Internet memes are visual dad jokes for every age and gender, and making them on your Mac is really easy even if you don't have a photo editing app installed. For example, in Preview you can open an image, bring up the Markup toolbar and then add text over the top. Change the font to Impact for that all-important meme look and then either save the image or export it in the appropriate format.

If you'd rather do it with even less effort, Meme Maker (99p in the App Store) has 172 popular memes ready for you to use and edit, and you can drag and drop your own images to create new ones too.

Alternatively, you could point Safari at imgflip.com/memegenerator and make memes for free.



Send backgrounds to the bin

8 You don't need an image editor to remove backgrounds or put someone from photo A into photo B: all you need is **Preview**. You can do all kinds of handy things here.

For example, if you want to get rid of everything that's a particular colour, you can bring up the Markup Toolbar, select the Instant Alpha icon - it looks like a magic wand - and simply click

and drag on the colour that you want to make transparent.

If you want to copy a person or object from one photo to another, change the selection tool in the Markup toolbar to Smart Lasso, then trace the person or thing you want to copy. You don't need to worry about being accurate; Preview analyses the image to find the object or person's outline.

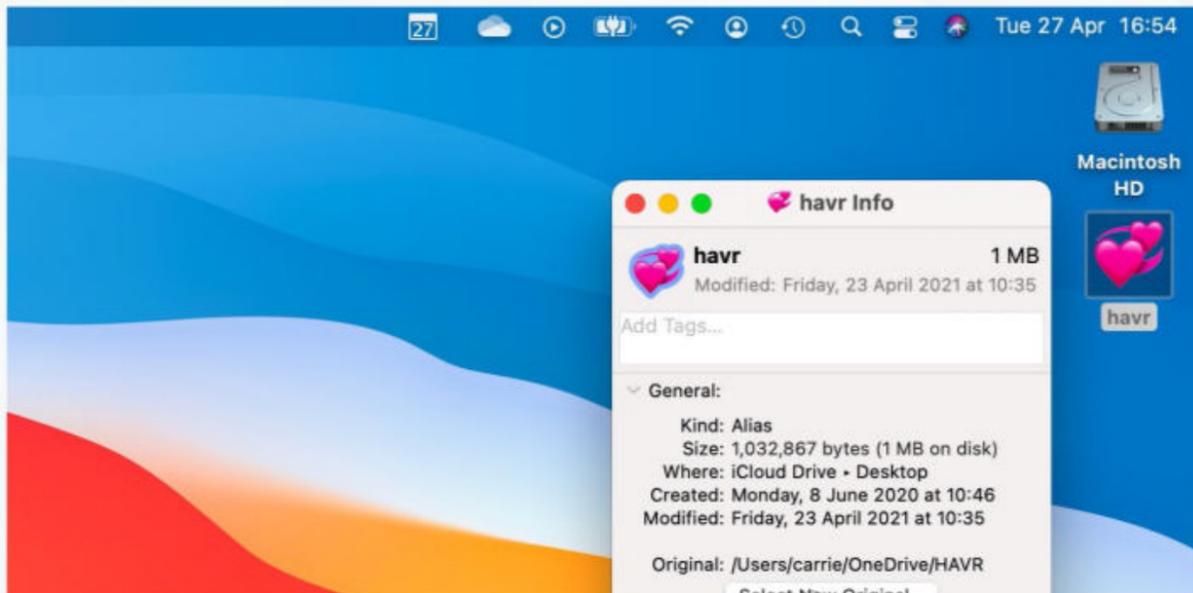


Use your other devices as cameras or scanners

9 Since the release of Mojave and iOS 12, your Mac has been able to use a brilliant feature called Continuity Camera. This enables you to use the camera in your iPhone, iPod touch or iPad directly from your Mac: you can take a photo and add it to your Keynote presentation, or scan a document and embed it in Pages. The feature is available in Pages, Numbers, Finder, Mail, Messages and many third-party apps too.

You'll need the appropriate iOS or iPadOS device to be using the same Apple ID as your Mac, and both it and your Mac will need to have Bluetooth and Wi-Fi on. **ctrl**-click anywhere in your document (in Finder, **ctrl**-click on the desktop or Finder window) and select Import From iPhone or iPad. In some apps the option will say Insert rather than Import, but it's the same thing.

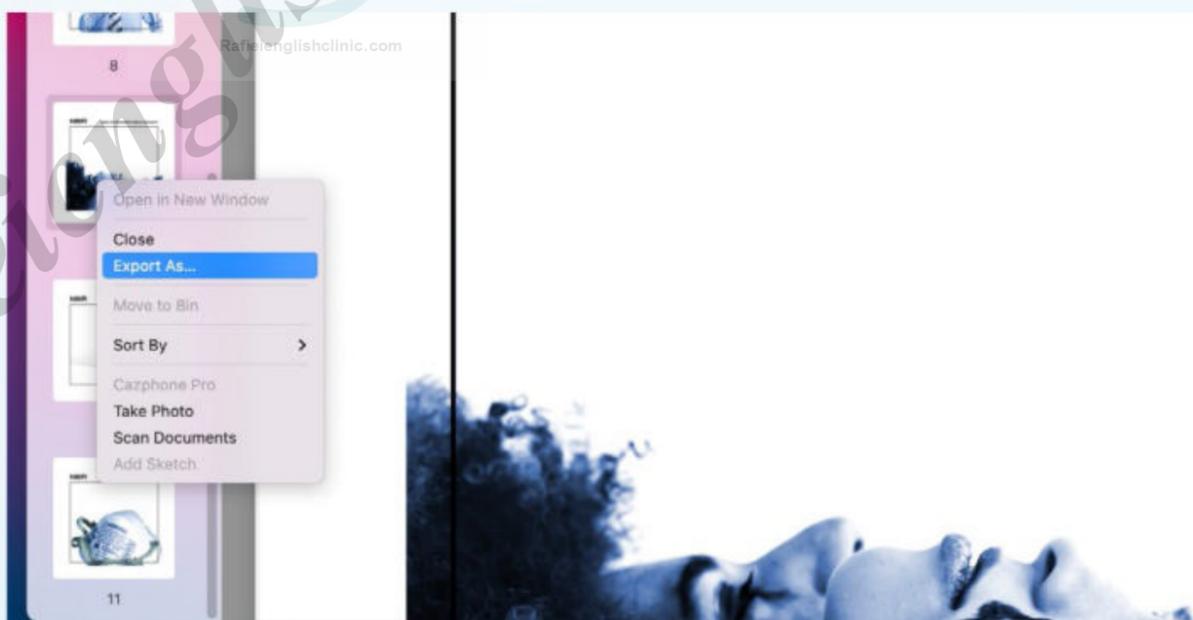
You should now see a list of the available iOS or iPadOS devices, so for example, when we do it our iPhone and iPad both appear. Now all you need to do is choose what you want to do: take a photo, scan a document or add a sketch.



Make your desktop into emoji

10 You can use custom icons for folders and external drives. Open the image you want to use in Preview and copy it to the clipboard with **⌘**+**C**; then **ctrl**-click on the folder, folder alias or drive in Finder, choose Get Info, click on its icon in the info window and press **⌘**+**V** to paste. You can replace all your folder and drive

icons with emoji by getting appropriate ones from Google Images, but you'll find that many don't have transparent backgrounds. In this case, open the image in Preview, bring up the Markup toolbar and use the Instant Alpha tool to select its background. Tap delete to remove the background, then **⌘**+**A**, **⌘**+**C** to select and copy the emoji.



Put multiple files in one PDF

11 You can send a collection of images or PDFs as a single PDF. Open one of the files, press **⌘**+**⌘**+**⌘**+**S** for the Save As dialog box, and save it as a PDF. Now go to Edit > Insert > Page From File to bring in the other PDFs or images. You can reorder them in the thumbnails sidebar, and if you want to annotate your pages it's just a

matter of bringing up the Markup toolbar and scribbling or adding text boxes. When you're finished, save your doc and use the Share icon to send it to your desired recipient. You can also extract individual pages from PDFs. **ctrl**-click the page thumbnail and select Export As. You can now export that page as a PDF or image file.



Expand your apps

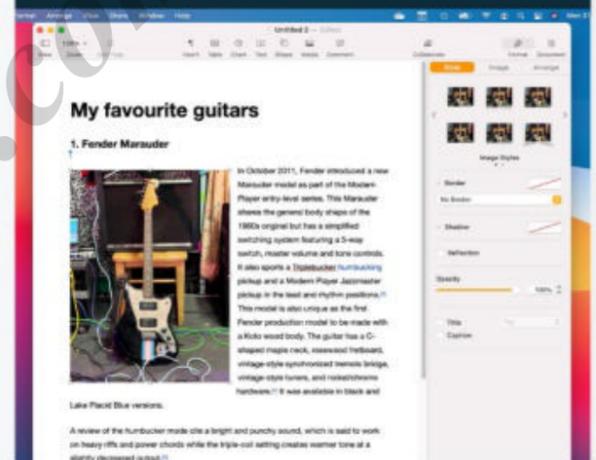
12 Photos and GarageBand both support plug-ins. For Photos, many plug-ins (or extensions) are included with other apps - Affinity Photo (£48.99) shares its Develop, Haze Removal and other tools, while Pixelmator Pro (£19.99) shares the lot, giving you access to all of its tools without you leaving Photos at all.

GarageBand is expandable too, with plug-ins adding extra instruments, controls and effects. The choice is huge and ranges from fun free tools such as Izotope's Vocal Doubler (izotope.com) to the same pro-level plug-ins designed for Logic Pro X: guitar, amp and synth modellers, compressors, mastering plug-ins, etc.

Copy between devices

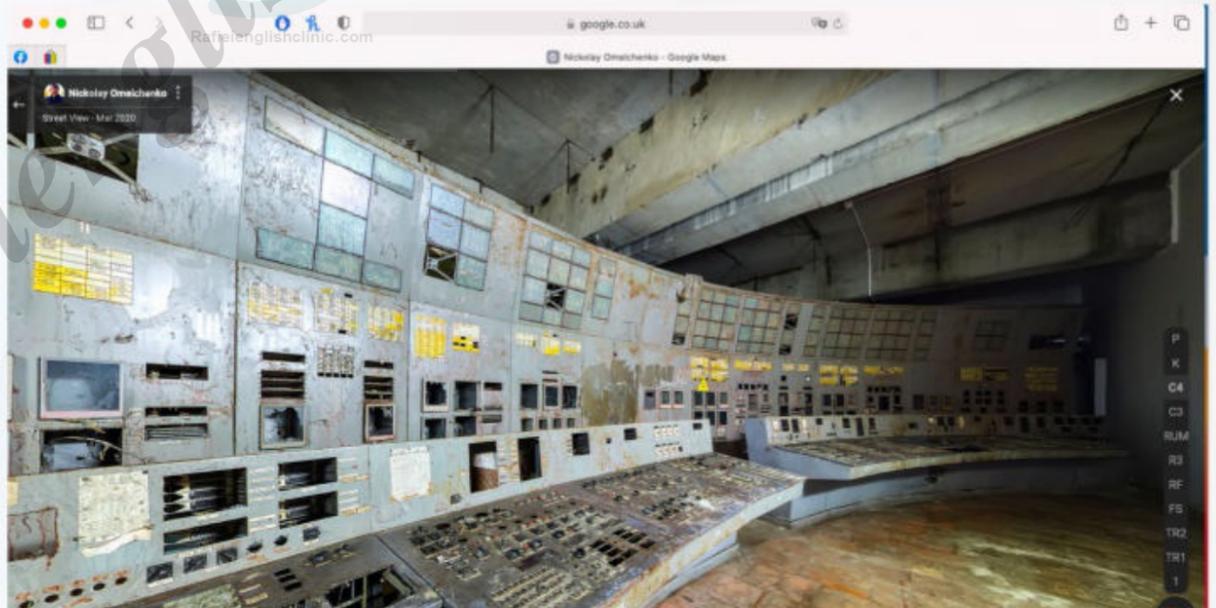
13 Universal Clipboard copies from your iPhone/iPad/iPod touch to your Mac or vice-versa.

Provided both devices share the same Apple ID it's just a matter of copying on one and immediately pasting on the other, such as copying a link or text from Safari on your phone and pasting it into Pages in your Mac.



Look for aliens

14 BOINC enables your Mac to take part in cutting-edge scientific research, such as the search for signs of alien life or the cure for deadly diseases. Download the BOINC app (boinc.berkeley.edu), pick a project to support and your Mac will donate spare processing capacity whenever it can.



QuickType in apps

15 Like the autocorrect suggested words you get when you type on iPhone or iPad? You can get the same feature in many Mac apps such as Notes and writing apps: press **⌘+esc** to bring up a drop-down menu of word suggestions. You can navigate through the list with the arrow keys and then press **↵** to choose one.

Explore forbidden places

16 One of the most fascinating things you can do on your Mac is explore the world. Maps' 3D city views are great, but things get really interesting when you use the rival Google Maps and go down to street level in Safari. Fancy seeing inside the control room of Chernobyl? Visit tinyurl.com/mfcontrolroom and you can see inside, as well as explore the

area around the ruined, radioactive reactor in complete safety. Other Street View places include Abbey Road Studios, Machu Picchu, the black waters of Loch Ness and the Base Camp on Mount Everest. You can access these on all your devices but we think they're most impressive on a Mac that has a big screen or is using AirPlay to mirror its screen to a big TV.

Surprising things you can do on your iPad

Experience art, make music and explore faraway places

Play the drums

17 One of our very favourite features in GarageBand is its smart instruments, which enable you to play guitars, bass and keyboards even if you don't know how to play them. By far the best of these is Drummer, which effectively puts a human drummer inside your iPad. That's because Apple has sampled a range of professional

drummers playing on a variety of different kits in all kinds of musical styles, and those samples have then been teamed with a very clever bit of software that plays and sounds just like a real drummer. It's completely customisable, packed with presets and you can even get it to listen to your playing and adjust what it's doing accordingly. And best of all, it's free.

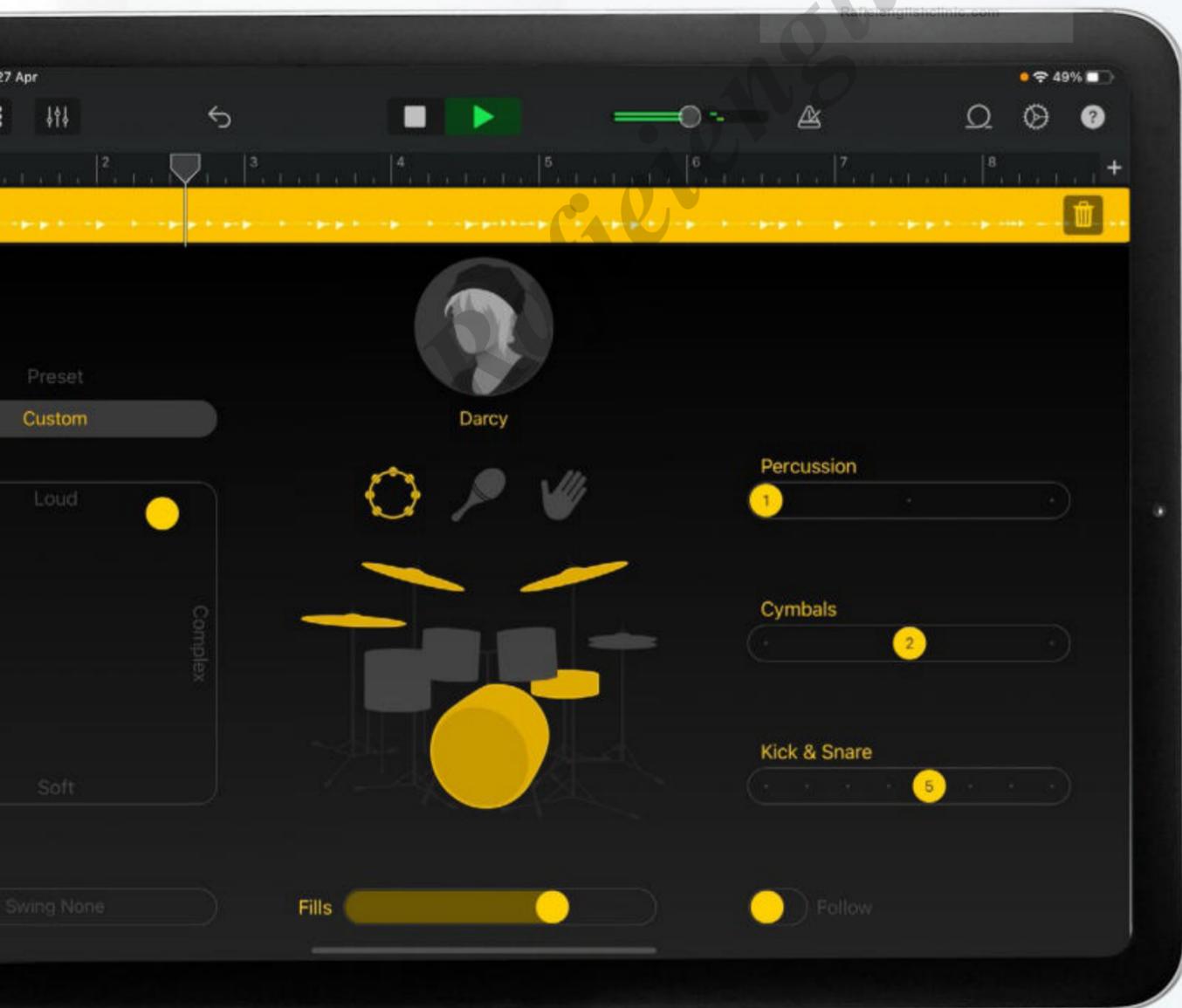
Draw on your Mac

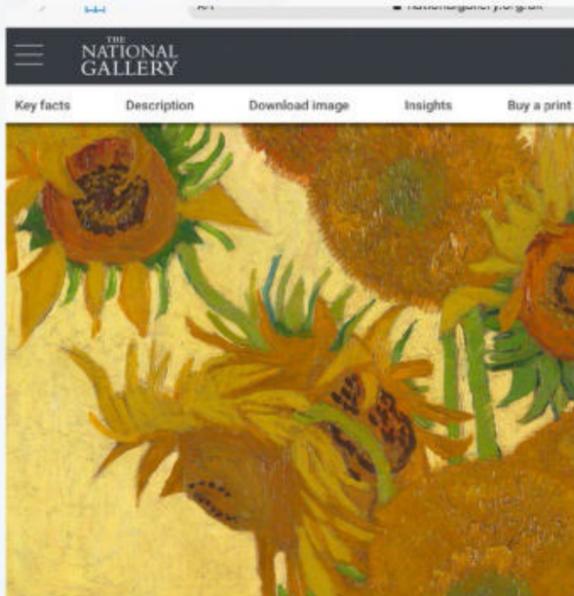
18 If your iPad and Mac are connected via Wi-Fi or Bluetooth you can draw in Mac documents with your iPad, finger and Apple Pencil. **⌘**-click in your Mac document, choose Add Sketch from the shortcut menu and select Done to add it to your Mac document. You can use your iPad for Markup in PDFs and images too.

Share with kids without fear

19 Your iPad is a wonderful device for entertainment and education, but there are lots of reasons why you might not want to share the entire thing with a small person. There may be content you don't want them to access, games you don't want them to play, or data you don't want them to accidentally delete.

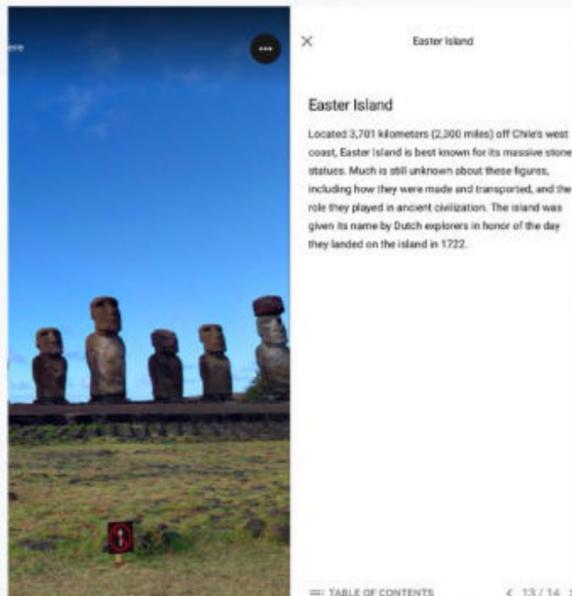
That's where Guided Access comes in. Once enabled in Settings > Accessibility > Guided Access, all you need to do is open the app you want them to use and then tap the Home button three times (or triple-click the top button if you have an iPad without Touch ID). You can now disable specific parts of the screen as well as turn off the volume buttons, keyboards, touch screen and other features.





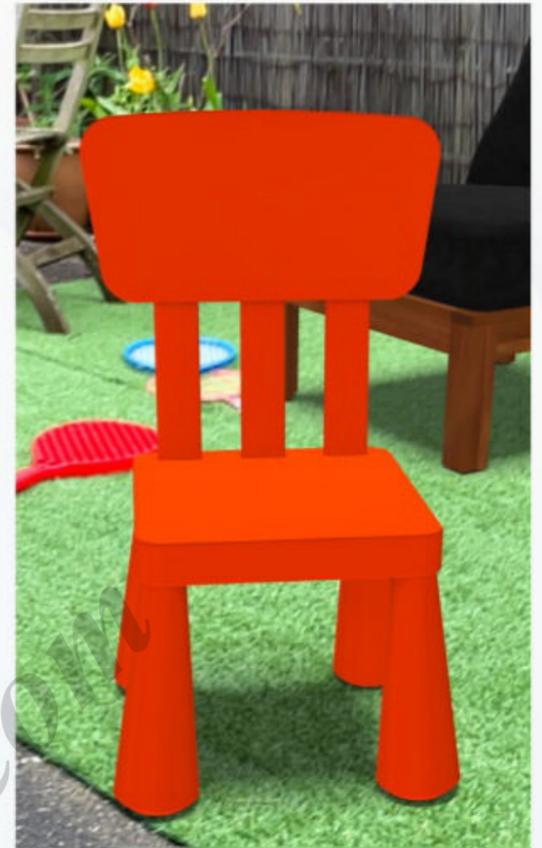
Explore classic art

20 Many art galleries provide very high-res images of their artworks. For example, at the National Gallery (nationalgallery.org.uk), you can get closer to a Vermeer than you ever imagined; the Rijks Museum (rijksmuseum.nl) does the same for Rembrandt. It's amazing to see these artworks in such incredible detail.



Explore Earth

21 Google Earth enables you to zoom from orbit to street level anywhere in the world. What makes the app special isn't just its massive maps; it's the Google Earth Voyager and the guided tours from the likes of the BBC, NASA, National Geographic and many more. We particularly love Voyager's time-lapse tours.



Have fun with furniture

23 Apple's adventures in augmented reality (AR) could change the way we shop: instead of going to the shops, the shops bring their stuff to you. One of the best-known retailers experimenting with AR is IKEA: the IKEA Place app enables you to see how items of furniture will fit and how they will look in your actual home. The Wayfair app has similar functionality, placing 3D models of furniture items over the view from your camera. If your budget is a little higher, John Lewis offers a similar feature with Virtual Sofa which, as the name suggests, enables you to shop for sofas in AR; the interior design app Houzz has a View In My Room feature that places products in real-time camera views.

If you want to get really serious about home design, the Magicplan app uses AR and (on the iPhone 12) LiDAR scanning to create detailed room plans and 3D models with the minimum of effort. If you need something a little less powerful, PLNAR also uses AR to create room models in a flash.



Be nosy

22 Wish you weren't here? Go somewhere else and let your iPad screen be a window on another part of the world. We're writing this looking at a beach in LA via earthcam.com, but if we preferred we could visit the Sanctuary of Our Lady of Lourdes or the Wolosztyn Steam Train Depot in Poland courtesy of worldcams.tv. There are lots of webcam apps for iPad but

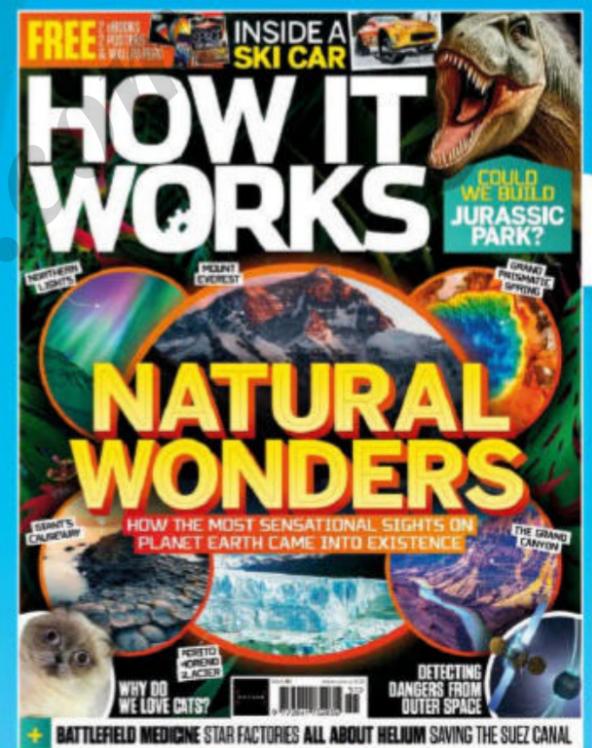
we'd recommend sticking with Safari instead: live webcam sites tend to be free whereas apps tend to charge money. One of our favourite such sites is WindowSwap (window-swap.com), which enables you to take a look out of somebody else's window. It sounds boring but it's surprisingly fascinating, and if you don't like one view, you can see another with a single tap.

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Surprising things you can do on your iPhone

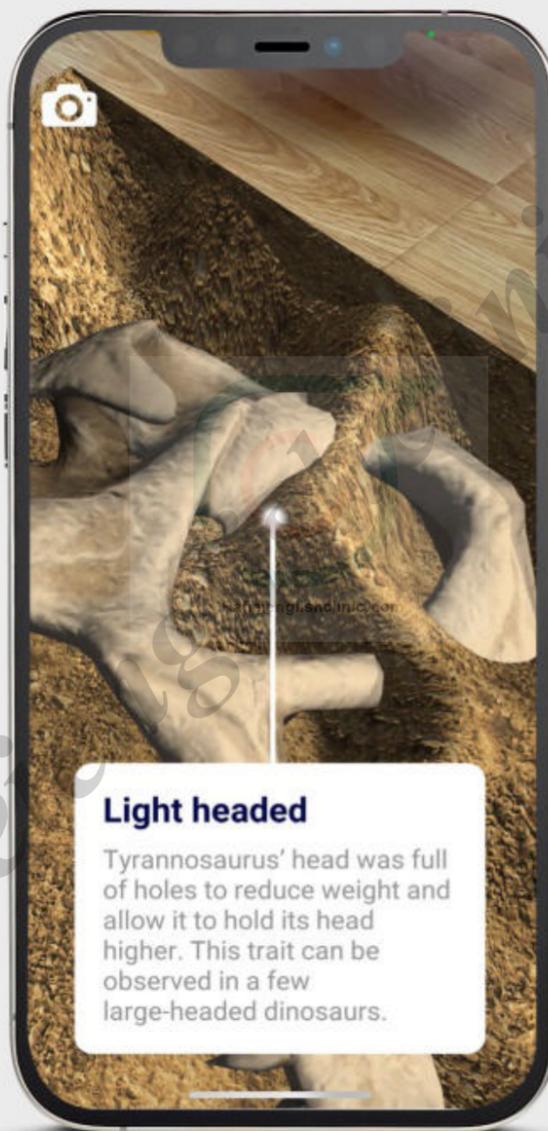
Be the iPhone Indiana Jones, explore augmented reality (AR) and make some noise

Dig up dinosaurs

24 Augmented Reality (AR) apps make the impossible appear right in front of you.

ARcheology - Dig Up History (£4.99) is a great example of that. It puts dinosaurs under your floorboards, in the garden, in the park or anywhere else you can point your phone's camera, so you can discover a T-rex under the terrace or a diplodocus under the dinner table.

The App Store is packed with great AR apps, with Mission To Mars AR enabling you to drive the Mars Rover; Civilisations AR bringing treasure directly to you; and Big Bang AR showing you the beginnings of the universe. And if you'd rather blow things up than blow your mind, there are AR apps that enable you to cause chaos from the safety of your sofa. Smash Tanks (£1.99) turns your tabletop, carpet or floor into a battlefield.



Measure like magic

25 If you have an iPhone SE/ iPhone 6s or later, you can use the built-in Measure app to measure things simply by pointing your phone at them. It's even better on the iPhone 12 Pro/ Pro Max thanks to LiDAR scanning. Just set the start and end points and Measure calculates the distance.

Scan documents in easily

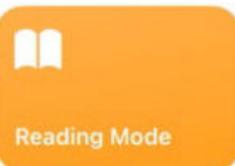
27 iOS has a built-in document scanner which is great for capturing things like business cards or receipts, but if you really want to use your iPhone as a scanner it's worth investing in a dedicated app such as Genius Scan 6.0. Those of us who used handheld and flatbed scanners in the bad old days can only sit in open awe of its features, which include ignoring unrelated objects and shadows, detecting and fixing hard edges, automatically adjusting the white balance, automatic keyword detection and tagging, batch scanning and cloud storage and sync. Not only that but its optical character recognition is incredibly fast and very accurate, turning scanned documents into editable, exportable text.

Set shortcuts

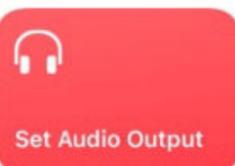
26 The Shortcuts app is an amazing tool for tinkerers, enabling you to set up automation based on "if this happens, do that", but many iPhone users may not be aware of its powers. Open the app and tap on Gallery to see existing shortcuts you can add to your phone or adapt to your own requirements.



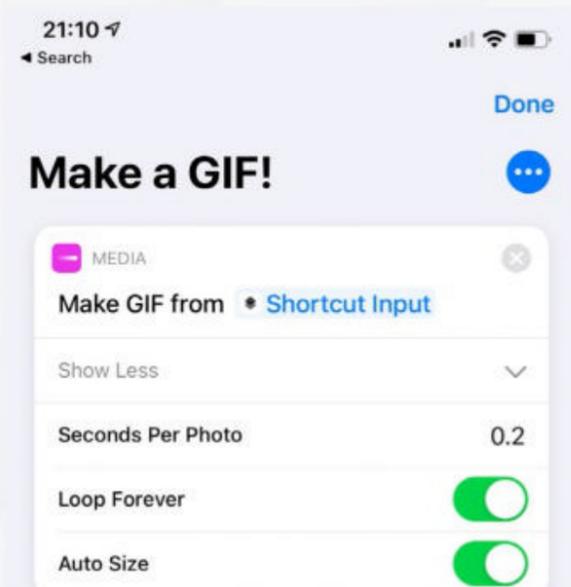
Find or create a note for your next meeting



Focus on reading by turning on DND, enabling Dark Mode, playing music and opening your preferred reading app



Switch the audio output to AirPlay, AirPods or a Bluetooth device



Make a GIF

28 Turn one of your videos into an animated GIF.

Create your own Share shortcut using Shortcuts, or install a dedicated GIF app such as Giphy, which enables you to make and share GIFs without programming. It also has a search engine to help you find the right GIF for any message.



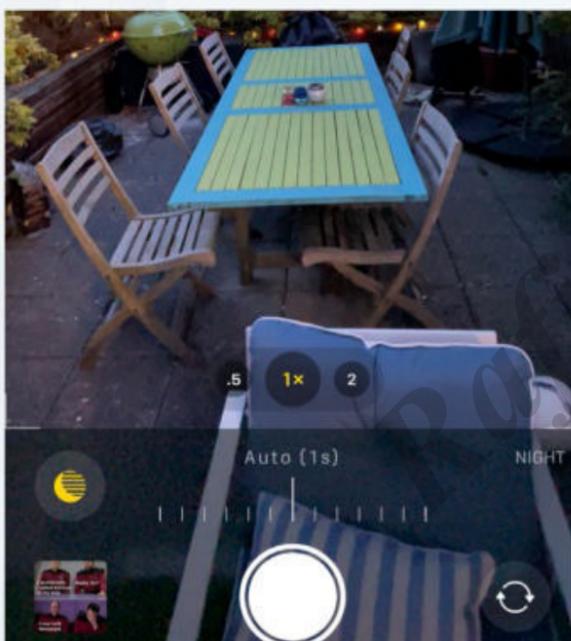
Keep photos private

29 It's nice to show off our photos. But that doesn't mean we want friends and family to see everything in our library. That's why we love the Photos app's Hide Photos option. Tap the photo or video's Share button, then tap Hide to move it to your Hidden album.



Find the secret scanner

30 Your iPhone's Camera app can recognise and decode QR codes. There's also a dedicated Code Scanner app on your phone that you can only find via search. This opens links without sending them to Safari, so when you close the app it closes the linked page too.



Make Night Mode better

31 Not getting the right results when taking pics in Night Mode? Tap the Night Mode icon (top of app) and you'll see a slider: slide it to the right to make the camera take a longer shot. This works for the rear camera (iPhone 11 onwards) and selfie camera (iPhone 12).



Be a guitar god

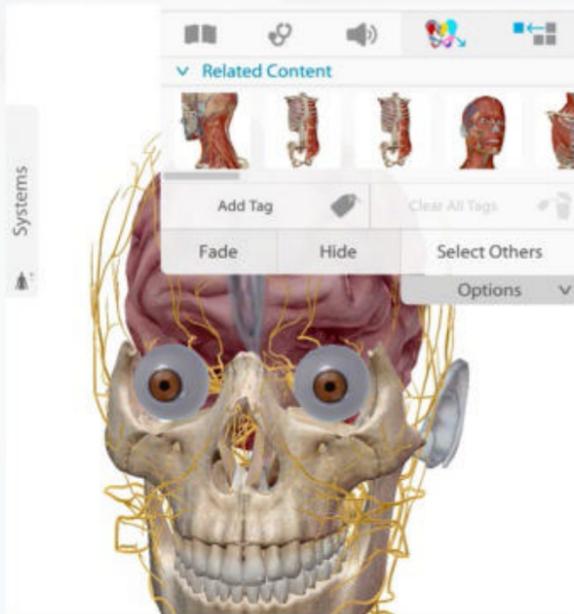
32 Guitar pedals and amps are so last century. With apps such as Amplitube (£23.99), use your iPhone as a guitar rig, creating original tones or replicating the world's greatest guitarists and recording into your favourite music app. All you need is an audio interface such as the £33 iRig 2.

Take photos with EarPods

33 No, your EarPods don't have a camera in them. But you can use them to take pictures using the volume up or down keys. Open the Camera app, point your phone and press the button. You can reassign the touch controls in AirPods but so far you can't use them to do this.

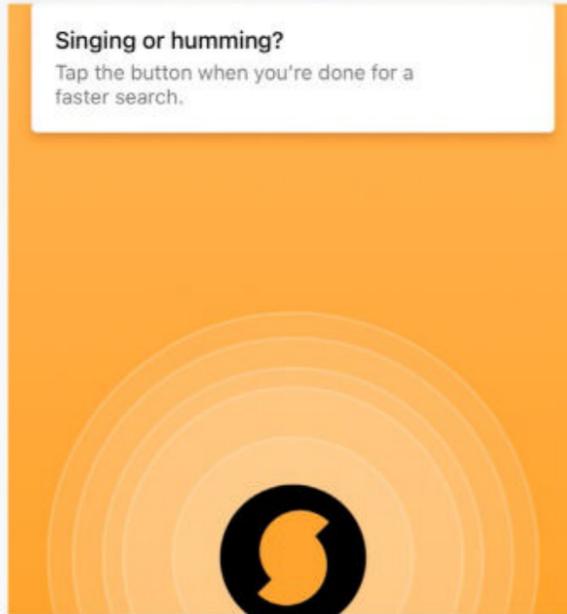
Tap the back

34 On the iPhone 8 onwards, you can turn the Apple logo into a button using Back Tap. Go to Settings > Accessibility > Touch > Back Tap and choose a function for a double-tap and triple-tap, such as Spotlight, muting audio, or going to the Home Screen. Back Tap works even if your iPhone is in a case.



See inside yourself

35 **Human Anatomy Atlas** is an extraordinary app. The £23.99 app enables you to see and explore the human body in 3D, and each model comes with textbook descriptions and definitions. There are male and female models and you can use AR if you want to see somebody's spleen on your sofa.



Hum a song

36 We've all had those moments when we know a song but can only remember a bit of the tune. Wouldn't it be great if we could just hum that bit and our iPhones could tell us what it is? That's what SoundHound does, and while it doesn't recognise everything it still has an impressive hit rate.

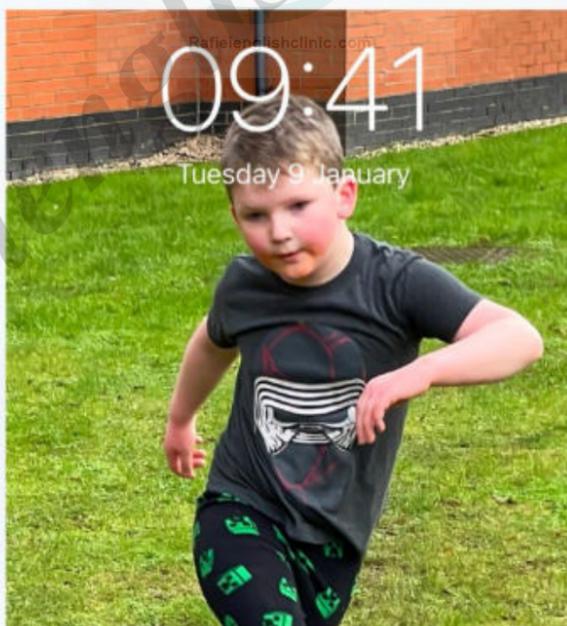


Silence spam calls

37 Are you sick of sales calls and spam calls? If you go into Settings > Phone and scroll down, you'll see an option marked Silence Unknown Callers. This will send a call from a number that isn't in your contacts or recent calls list to voicemail, and you'll get a silent notification instead of a ringtone.

Watch your baby

38 If you're travelling with multiple iPhones, you can use FaceTime to turn one of them into a really good baby monitor. Position one phone in the room, call it via FaceTime and then mute the audio. The downside to this is that it'll hammer the phone battery, and if there's no Wi-Fi it could incur data charges too.



Make your Lock Screen live

40 You're not limited to using static photos for Lock Screen wallpaper. Use any Live Photo, and your chosen photo will animate if you press down on the screen before unlocking your phone. Pick, move and zoom the image as you would with any other and then tap Set > Set Lock Screen.

Screenshot full pages

41 In Safari, you can capture an entire web page in a single screenshot. Even if it's much bigger than what you can see on screen and you haven't scrolled through it. Take your screenshot and then look at the top of the screen. If you tap Full Page, you can now save or share the whole thing.

See the stars

39 **Night Sky** is our favourite award-winning stargazing app. It's available across the Apple family, but we think it works best on iPhone - stomping around in the dark seeing the skies on our screen never gets old. It's a brilliant educational resource and the app makes great use of AR too.

Get a Babel Fish

42 Google Translate is the electronic equivalent of the translating fish in the *Hitchhiker's Guide To The Galaxy*. And nobody has to stick anything living in their ear. It provides real-time translation of images and live conversations, removing awkward communication barriers.

Your Apple TV can help and entertain you

Banish hotel bills, never miss a mumble, and get some workout motivation

Banish hotel boredom

43 You can use your Apple TV with your hotel room TV, streaming TV and movies from your iPhone or iPad. Hotel Wi-Fi isn't great, but if your iPhone or iPad has a strong 4G/5G connection, create a Personal Hotspot and connect to that.

Don't miss mumbles

44 Missed a bit of dialogue because of a mumbling actor or noisy kids? Hold down the Siri button on the Siri Remote and say "what did he/she say?" Siri will rewind a few seconds, turn the volume up and temporarily enable closed captioning to help you too.

Apple TV - Connected



Congratulations! Your Apple TV is now connected to your TED account. Visit My Talks tab in the TED app on your Apple TV to see talks and playlists you've saved on TED.com. You can also save talks on your Apple TV to watch later on TED.com.

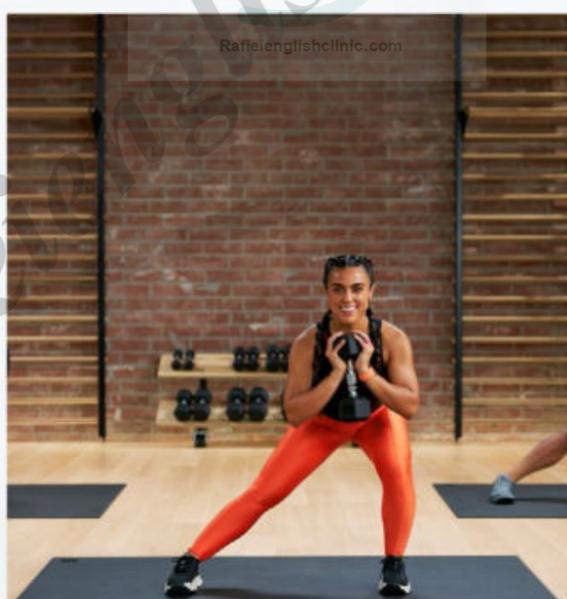
Learn anything anytime

45 In addition to education apps you can mirror over AirPlay from your iPhone, such as the free Kahn Academy or the useful Udemy, there are dedicated Apple TV apps to broaden your mind too. For example, the entire TED Talks library is available for free, and there are paid apps from the likes of Coursera and Skillshare.



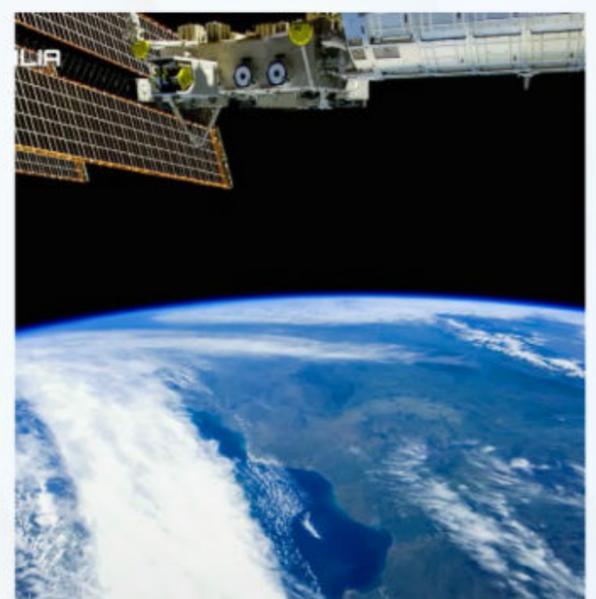
Enter text easily

46 Are you sick of slowly typing text into your Apple TV with the remote? Use your iPhone, iPad or iPod touch instead. Make sure both devices are signed in with the same Apple TV and that both Bluetooth and Wi-Fi are on. You'll get a notification any time there's a text field on your Apple TV; just tap it and type.



Get fit

47 Apple TV isn't just for sprawling on the sofa eating Wotsits: it's also your own personal trainer. Apple Fitness+ connects your Apple Watch and Apple TV to give you useful workouts that track your activity and let you know how well you're doing, with on-screen prompts to help motivate you to do even better.



See from space

48 Earthlapse Pro turns your Apple TV into a window on the International Space Station, with 2GB of 4K HDR visuals captured by astronauts as well as live views from the ISS's own cameras. You can adjust the playback speed and swap the soundtrack for your own choice of 'atmospheric' music.

Go beyond mere time with your Apple Watch

Make music, get supple and get your weather forecasts with a touch of attitude

Get angry weather

50 As you'll see in our group test (p86), **CARROT Weather isn't like other weather apps.** As well as info and forecasts, you get a serious side order of snark. There are five modes ranging from fairly pleasant Professional to foul-mouthed Overkill, all of which can appear in face complications.

Work out a tip

51 We love this useful feature within the Apple Watch calculator. If you tap in the total of your restaurant or café bill and tap on Tip, you can use the Digital Crown to select a tip percentage and the number of people paying. The app then works out everyone's share of the total bill.

Make music

49 The Apple Watch isn't the first device you think of when it comes to making music... But WatchFunk (£3.99) enables you to play piano, drums, synths and even trumpets on your wrist. It's a fun app that might help inspiration strike and its interface makes great use of the limited screen space.

Share your face

52 Have you created a Watch face with the perfect collection of complications? Press and hold the display and then tap on the Share icon and you can send it to friends or family. There's a 'don't include' option that enables you to specify which complications to include and exclude.

Recognise any song

53 If you install the Shazam app, you can use your Apple Watch to recognise any song you hear. The recognised songs are automatically saved to My Music on your iPhone and, provided the place isn't too noisy, Shazam's accuracy is really impressive. Just don't use it to cheat at pub quizzes.

Learn yoga

54 There are lots of yoga apps for your iPhone, but it isn't always easy to see what's on your screen when you're contorting yourself into odd shapes. That's where Start With Yoga comes in: it's a £2.99 app that puts poses and routines on your Apple Watch to help you learn the basics without straining to read.



Unlock while masked

55 Apple introduced this feature in iOS 14.5 because Face ID can't see through masks. In your phone, go to Settings > Face ID and Passcode, then enable Unlock With Apple Watch. You'll need to tap in your passcode for the first unlock each day; after that it's automatic.

Take the Mickey

56 The Mickey and Minnie Mouse Watch faces can speak in their inimitable squeaks. Make sure Speak Time is on in the Apple Watch app - it's in My Watch > Clock - and you'll be able to hear Mickey or Minnie whenever you tap the display (or double-tap if your Series 5 or 6 display is dimmed).

Track the kids

57 Don't put a cellular Apple Watch on eBay when you upgrade: give it to the kids. Family Setup enables you to use any Apple Watch from series 4 onwards as a GPS child tracker, although you'll need an airtime contract in order to take advantage of its location features: otherwise it's Wi-Fi only.

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APPLE SKILLS

EDITED BY **JO MEMBERY** >

NEW IDEAS

Your in-depth guide to getting more from your Apple kit



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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 MAKE BIG SUR ACCESSIBLE

WHAT'S INSIDE

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Find and delete duplicate files and photos

Save space with Find Duplicates in Parallels Toolbox



IT WILL TAKE

> 10 minutes

YOU WILL LEARN

> How to find and delete duplicate files

YOU'LL NEED

> Parallels Toolbox for Mac (£15.99/year), macOS 10.12 or later



It doesn't take long to fill your Mac's hard drive or solid-state drive with clutter. Old photos or work files can quickly take up

hundreds of megabytes of precious storage space - take a look at your folder that contains email attachments, you'll find that alone is taking up a surprising amount of GB.

One common problem is that many of us tend to create duplicate versions of files that people send us - some photos from a friend, or a bunch of PDF files from a work colleague. There's a tendency to automatically create

duplicates of photos and files that we need, say, for work, keeping the originals safe in one folder while editing the duplicates in another.

There are a number of apps that can help you to find and delete duplicate files, but the one we go to most is part of the Parallels Toolbox suite (from parallels.com). Toolbox costs £15.99 per year, but it includes more than 30 different apps and utilities, and its Find Duplicates tool works very much like Spotlight, so it feels familiar and easy to use. Toolbox also offers a seven-day free trial so that you can check it out first. **Cliff Joseph**

EXPLAINED... The Find Duplicates feature >

1

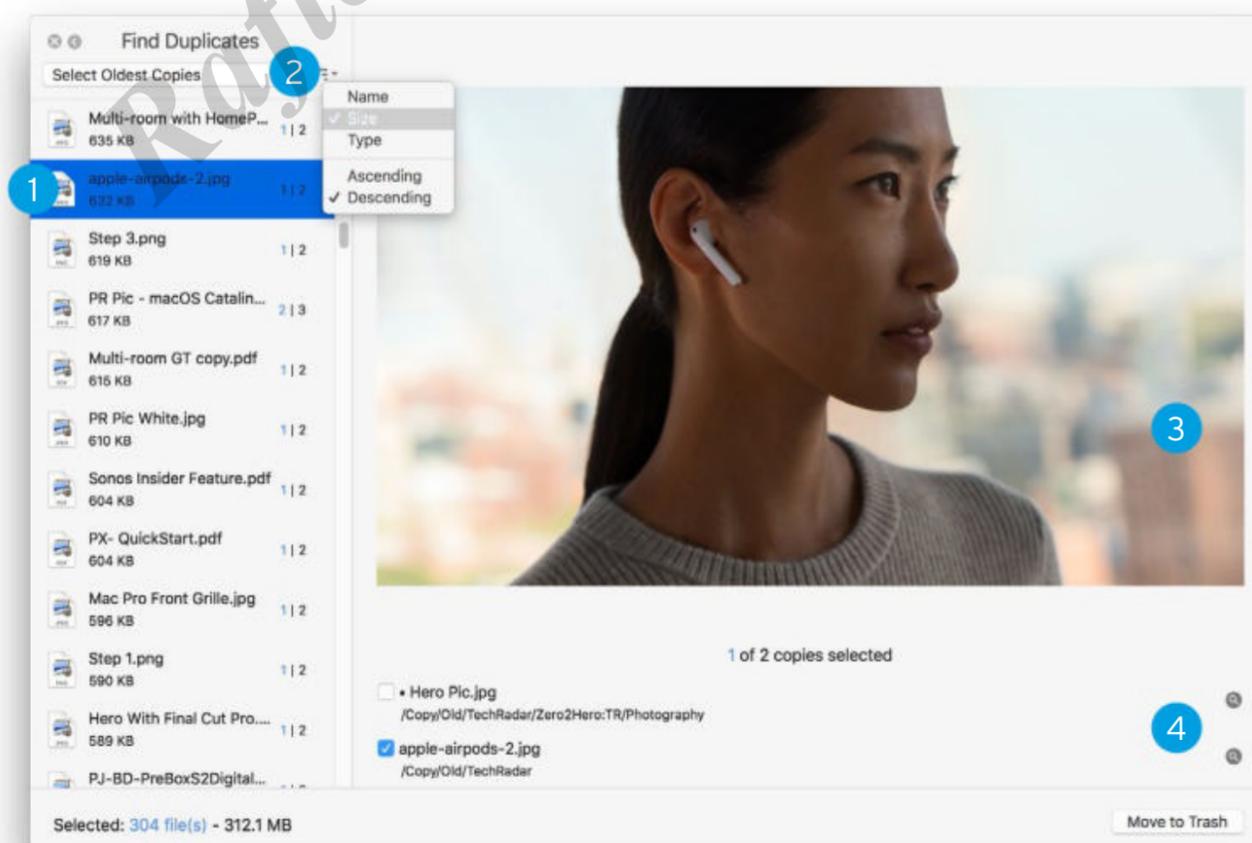
Spotlight on duplicates

> The tool works like Spotlight, with a list of files on the left and a preview of each file on the right.

2

Sort and delete

> You can sort all your duplicate files by file name, size or type, and choose which ones to delete.



3

What's in a name?

> The app doesn't just look at file name - it looks at the actual content of each file.

4

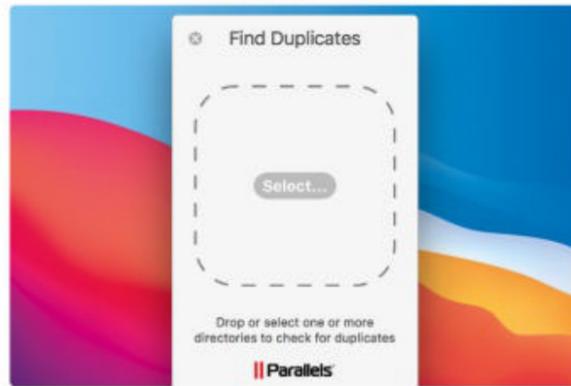
File preview

> You can view details of each duplicate that you find, and preview the file before deciding whether to delete it.

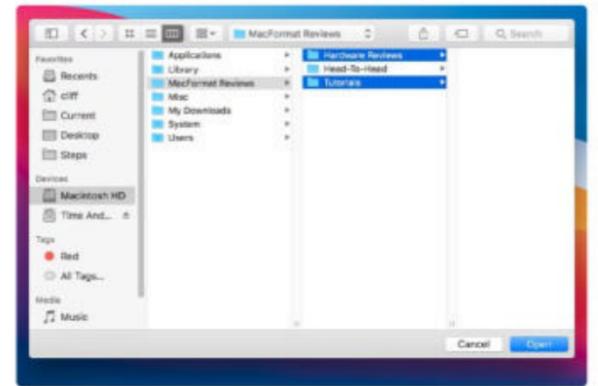
HOW TO Find and delete duplicate files >



1 Launch Find Duplicates
Parallels Toolbox contains a large collection of useful tools and utilities, and version 4.5 includes a new 'dashboard' that automatically shows the tools that you use the most. Let's just click on Find Duplicates to launch it.



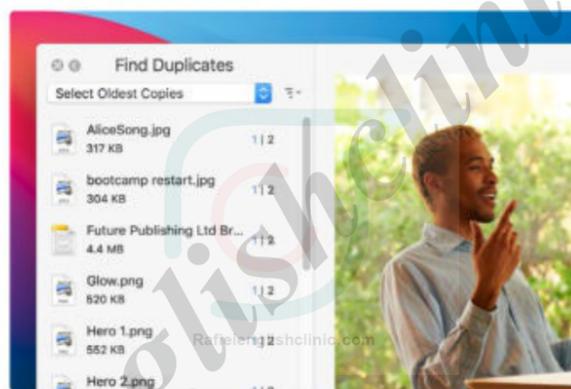
2 Start searching
The Find Duplicates tool is very straightforward. You can search any folders for duplicate files either by dragging and dropping them into this window, or you can click Select to open the Mac's standard Open dialog box.



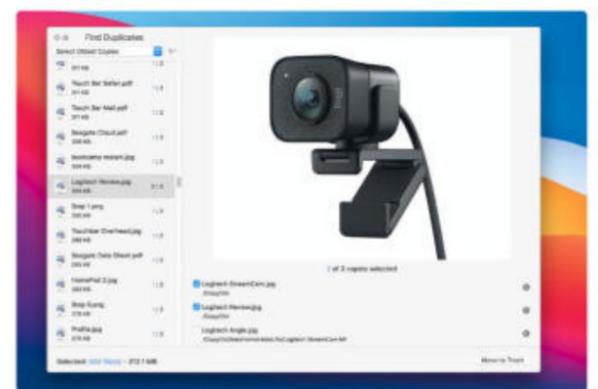
3 Select folders
You can select multiple folders where you want to search for duplicate files, and Toolbox will also search any additional sub-folders stored within those folders. Just click the 'Search for duplicates' button to start.



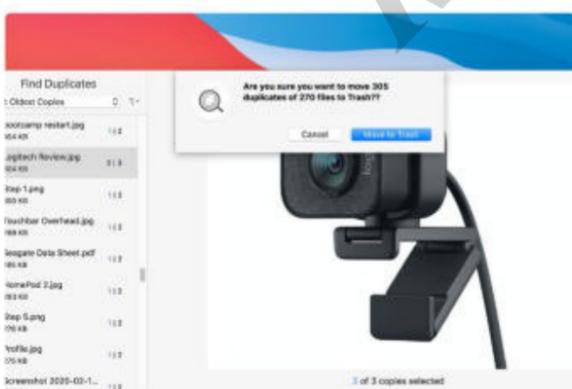
4 Save results
Here it's taken Parallels Toolbox 30 seconds to scan a folder containing 10GB of old work files. Toolbox stores the results of that scan too, so that other scans in the future will be faster even if you add more files to that folder.



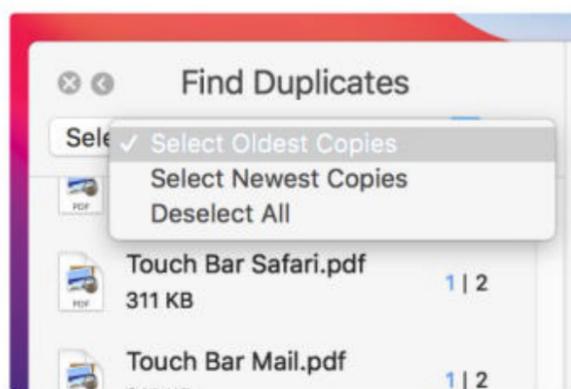
5 Spotlight on duplicates
As mentioned, the Find Duplicates tool works in a similar fashion to Spotlight, which makes it feel familiar and easy to use. It shows a list of the duplicate files it has found on the left, with a preview of the file on the right.



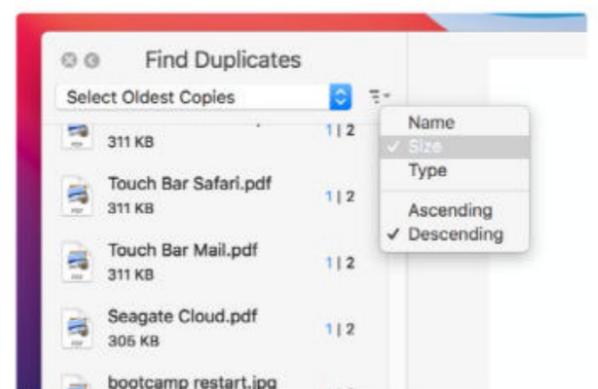
6 Look beyond the name
The app doesn't just look for files that have the same name. It also compares the content of each file. Here it has found three identical photos of this webcam, even though the three files all have different names.



7 Go auto or inspect
By default, the app selects the oldest versions of every duplicate file to delete, and leaves the newest version alone. It can automatically delete all duplicates for you, but you can take a closer look at each file if you want.



8 Make your selection
There are a number of other options available when searching for duplicate files. Instead of selecting the oldest file copies, you can tell the app to select the newest files instead, or tell it not to select any files at all.



9 Sort and find files
If you're looking for a particular type of file, then you can speed things up by sorting through files in alphabetical order, by file size or file type. You can also arrange the list in ascending or descending order.



Make Big Sur more accessible

Right the accessibility wrongs in macOS and make it even easier to use

IT WILL TAKE

> 5 minutes

YOU WILL LEARN

> How to make macOS Big Sur easier to use if you have visual impairments

YOU'LL NEED

> macOS 11 Big Sur or later



Apple's macOS Big Sur is an enormous overhaul of the Mac operating system, with an entirely new look and feel

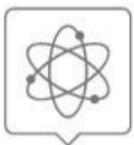
compared to older versions.

Not every change has been welcome, though. Apple's new design includes an awful lot of transparent, low-contrast elements that, while pretty, make using the system harder for anyone with eyesight trouble. Throw in small text and plenty of moving elements that can cause motion sickness and you

have a potential accessibility nightmare. If you find Big Sur means big problems for accessibility, there is help at hand... Apple has a range of features that can alleviate the most troubling problems in its operating system, thanks to an extensive list of accessibility tools (like VoiceOver) housed in System Preferences.

In this tutorial, we will focus on the ways you can make macOS Big Sur's visual elements more accessible, from increasing text sizes to enabling colour filters and more. **Alex Blake**

HOW TO Fix Big Sur's accessibility woes >



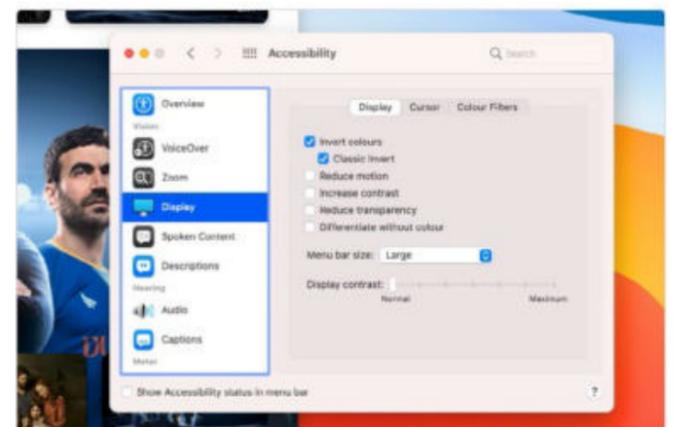
Genius tip!

> To add accessibility shortcuts to the menu, go to System Preferences > Dock & Menu Bar > Accessibility Shortcuts and tick Show in Menu Bar.



1 Reduce transparency

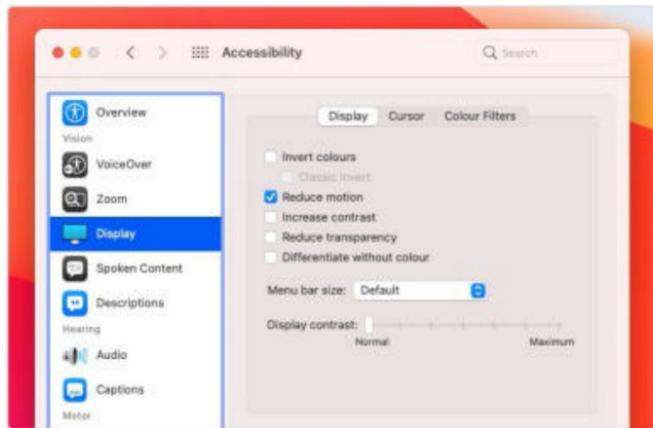
Open System Prefs and click Accessibility > Display. On the Display tab, enable 'Reduce transparency'. This makes windows and dialog boxes opaque and easier to read. For a stronger effect, tick 'Increase contrast'.



2 Contrast and colours

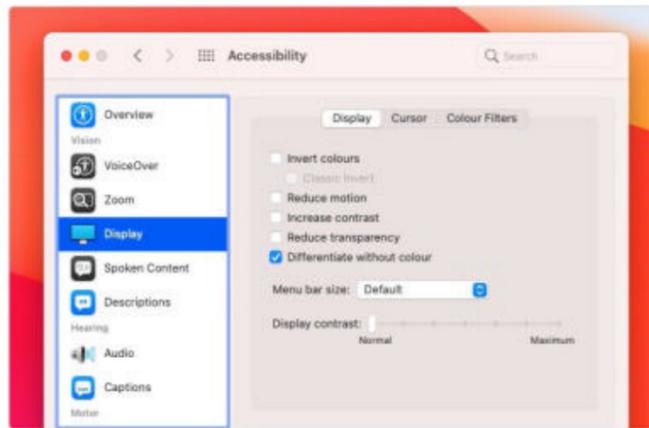
In the same Display tab, adjust the slider at the bottom to tweak display contrast. You can invert Big Sur's colours (except in images) with the checkbox at the top. Click Classic Invert to also invert image colours.

CONTINUED... Fix accessibility woes >



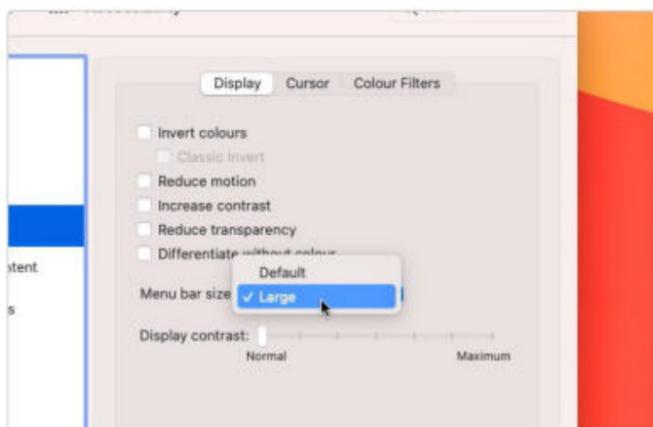
3 Reduce motion

Big Sur uses a lot of motion, such as when you switch from one desktop space to another and everything flies to the side. This can cause motion sickness. Fix it by ticking the 'Reduce motion' checkbox under the Display tab.



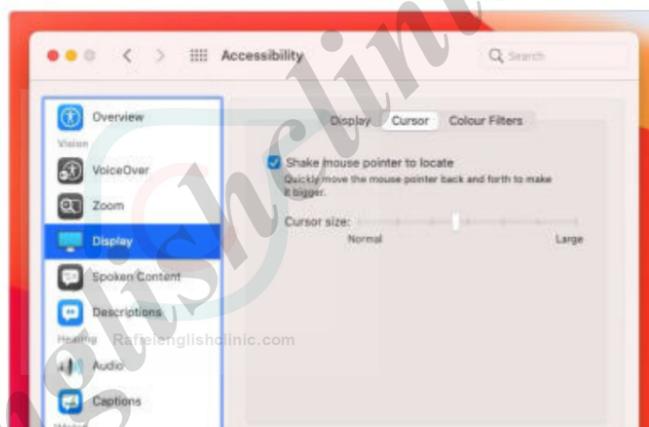
4 Differentiate without colour

Some apps in Big Sur use colours to help indicate different statuses, such as your availability in a mail or messaging app. Tick the 'Differentiate without colour' checkbox on the Display tab to use shapes instead.



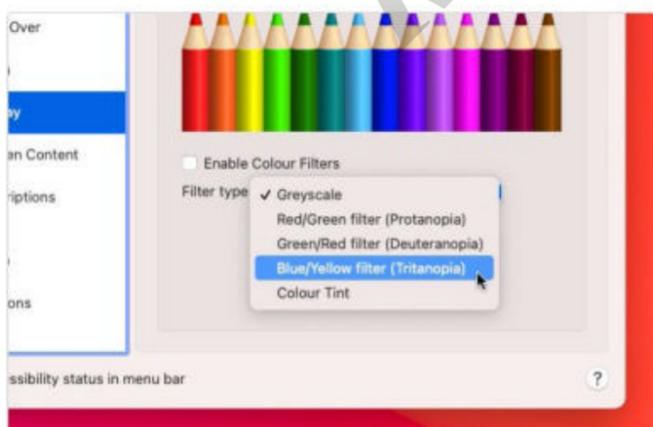
5 Menu bar text size

Big Sur's menu bar text can feel small and hard to read. To increase the text size, use the drop-down menu on the Display tab and choose Large from the list. You will need to log out and in again to see the changes.



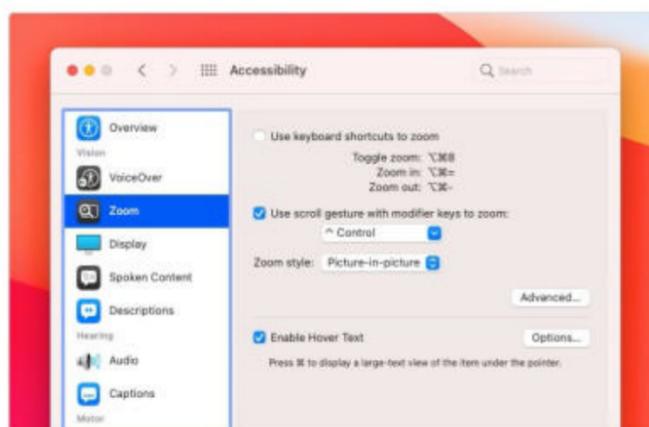
6 Cursor size

The cursor can also be made larger and easier to find. Under Accessibility > Display, click the Cursor tab and adjust the 'Cursor size' slider. Tick the checkbox above to increase the cursor size when you shake the mouse.



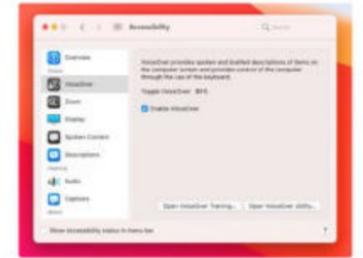
7 Colour Filters

Now click the Colour Filters tab. You can enable a range of filters here, including greyscale and specific colour blindness options. Click Colour Tint to create a custom filter based on a selected colour and intensity.



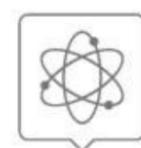
8 Zoom in

In the left-hand menu, click Zoom to enable various methods of enlarging text under your pointer. You can trigger it with a keyboard shortcut, by scrolling your mouse, or by pressing and holding the **⌘** key.



Jargon buster

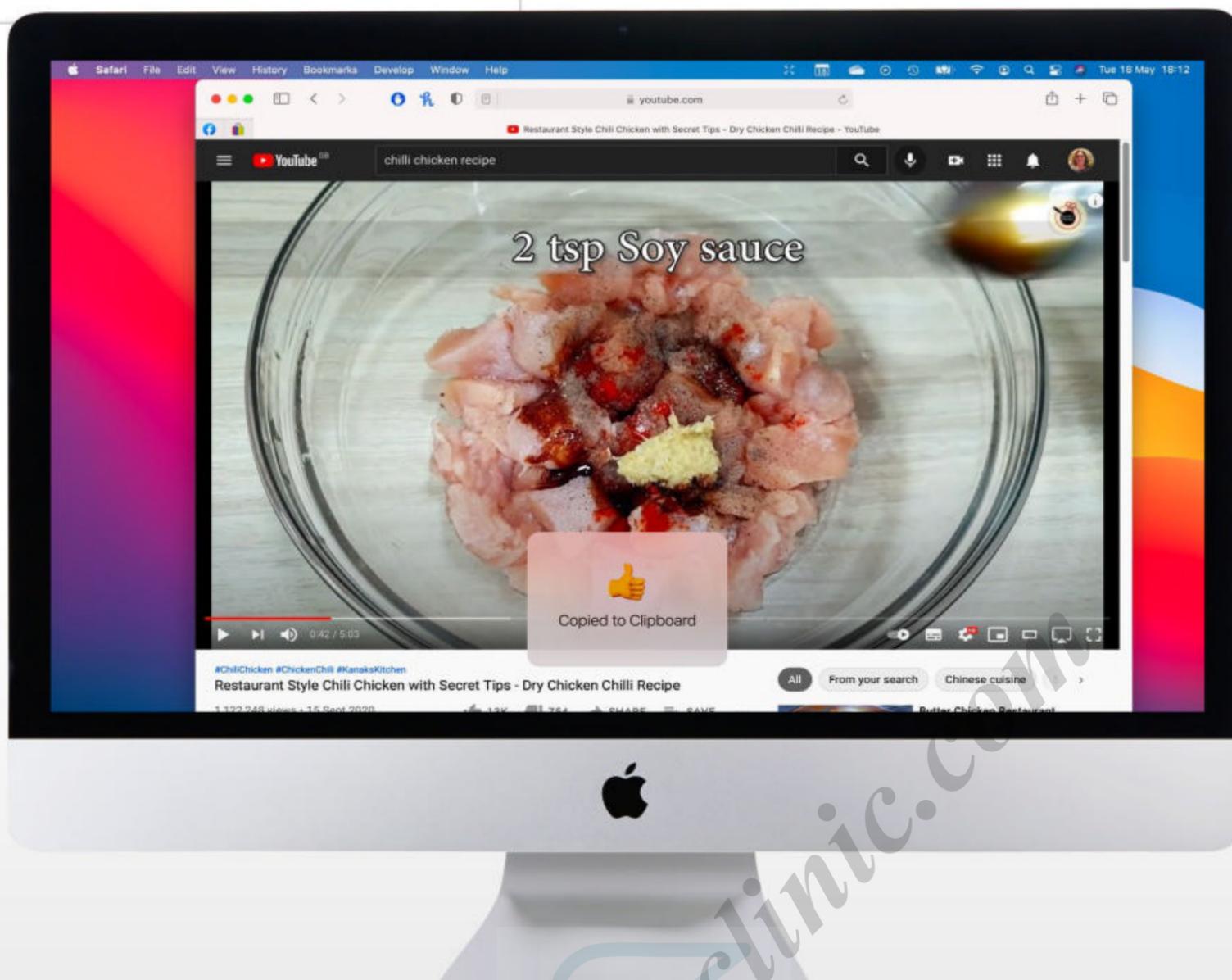
> **VoiceOver** is a built-in screen reader on the Mac. It reads aloud highlighted items and lets you control your Mac with your keyboard.



Genius tip!

> In System Preferences, click Users & Groups > Login Options > Accessibility Options. Any features you enable will be available on the login screen.





Capture text with TextSniper

Recipes, presentations, PDFs... TextSniper captures text from anything

IT WILL TAKE

> 10 minutes

YOU WILL LEARN

> How to grab usable text from anything

YOU'LL NEED

> TextSniper (£9.99), macOS 10.15 or later

TextSniper is an Optical Character Recognition (OCR) app that scans what's on your screen



Have you ever encountered a web page that won't let you copy text from it? A recipe that puts all the ingredients in the video but not on the actual page? An image you want to quote, or a fact-packed presentation slide that you need to copy from quickly?

TextSniper can help with all of these things. It's an Optical Character Recognition (OCR) app but instead of scanning printed documents it scans what's on your screen - so you can grab a block of text from that



The Additive Clipboard is brilliant, enabling you to capture text after text without losing what you've already copied.

digital magazine, that PDF, that video recipe or anything else you can see on your Mac's display. In addition to copying the text to the clipboard, it can also read it aloud - which is handy for apps or content that doesn't pass editable text along to macOS's own text-to-speech features - and it can also decode QR codes and barcodes.

Snipe and scan

TextSniper doesn't work on every Mac: if you're running macOS older than Catalina, you're out of luck. But if your Mac is running macOS 10.15 or later, you can take advantage of iOS/iPadOS integration and use TextSniper on images captured, effectively turning it into a document scanner too.

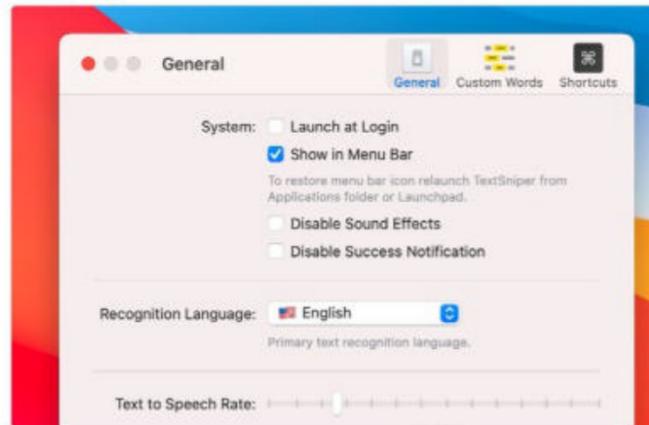
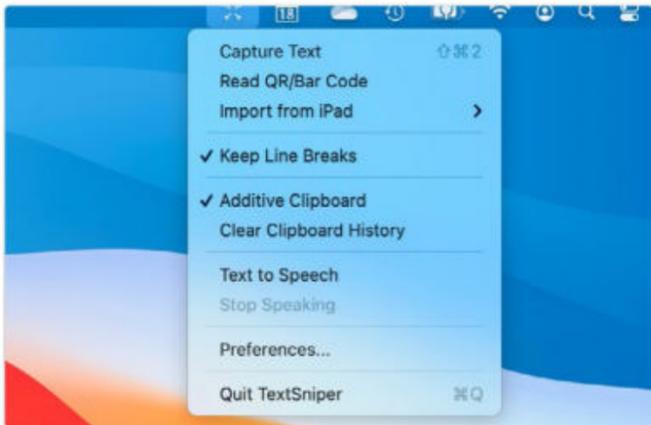
TextSniper is the kind of app we love to see on the Mac; it sets out to do one thing and do it well. And it's reasonably priced too - it's just £9.99 on the Mac App Store and it'll pay for itself by saving you tons of time. You can download a free trial from textsniper.app.

Carrie Marshall

HOW TO Capture text with TextSniper >

Jargon buster

> **Optical Character Recognition** is the catch-all term for the technology that analyses text in an image to turn it into an editable document.

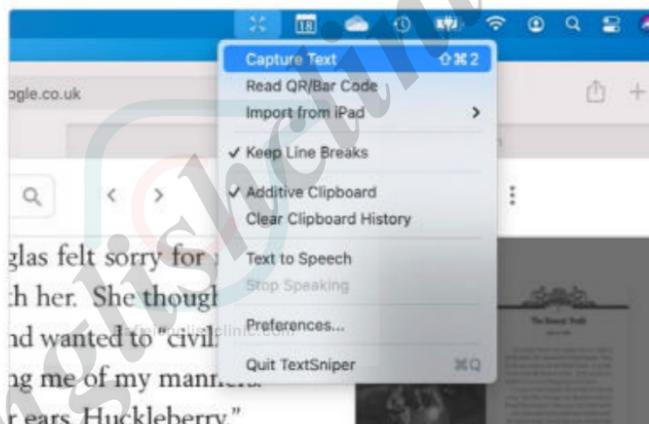


1 Inspect the menu

When you run TextSniper it puts a little icon in the Menu Bar enabling you to access all its features. As you can see it can also connect to your iPhone or iPad, which is useful if you want to use TextSniper on a scanned document.

2 Set the language

TextSniper defaults to English but there's also built-in support for scanning text in a number of other languages. If you wish, you can also disable the notifications you get when text has been captured.

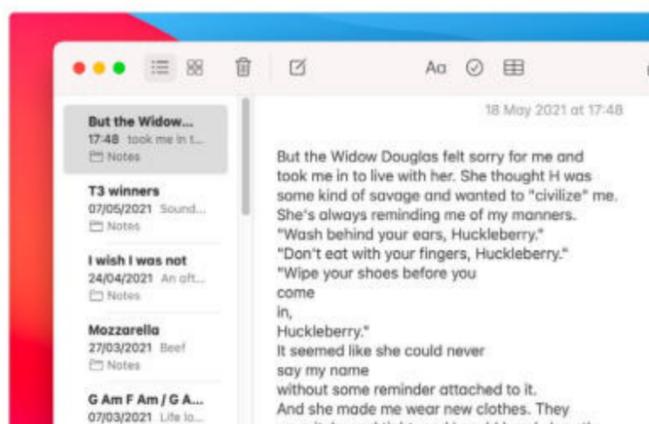
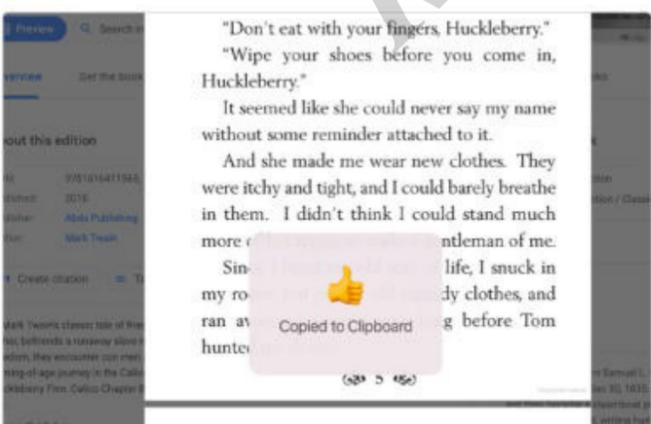


3 Set the shortcuts

Although we're using the Menu Bar for clarity, TextSniper is best when you use keyboard shortcuts: by default, $\text{⌘} + \text{⌘} + \text{2}$. You can change that in the app's preferences as well as add new shortcuts for other features.

4 Find your text

TextSniper can extract text from anything on screen: an image, a PDF, an application window, or an ebook. Simply go to the page or image you want to capture and use the Menu Bar or shortcut to capture the text.



5 Get a thumbs up

If you haven't disabled the notification, you'll now see this message. You can now go to another page or image and extract the text from that. TextSniper adds captured text to the clipboard without erasing what's there.

6 Paste the text

You can now paste the text just as you would in any other app; here we're pasting an extract into Notes. TextSniper tries to replicate formatting such as line breaks, but it can get confused with complex layouts.

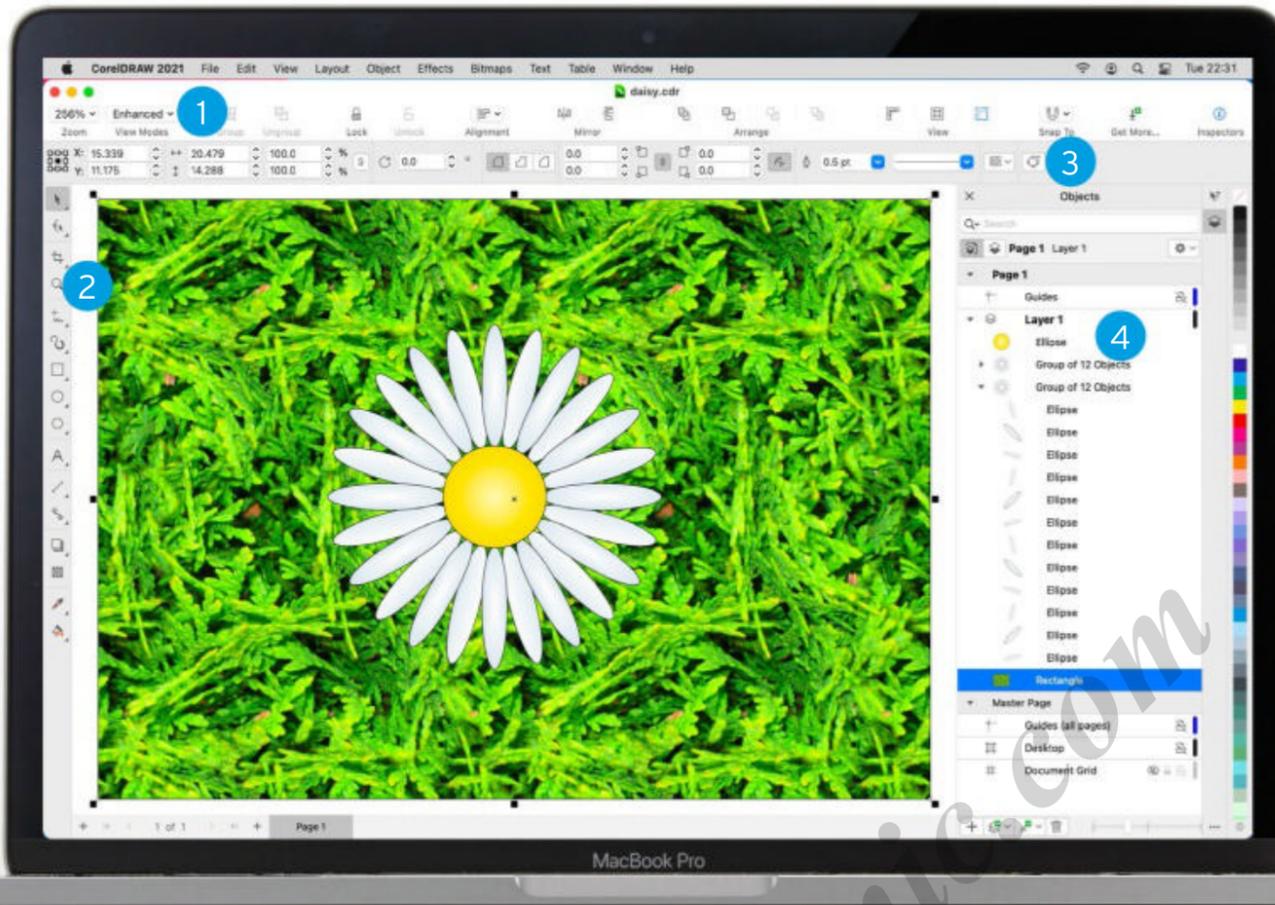


Genius tip!

> If you want to translate text in an image, you can do it from your iPhone in real time: just install Google Translate or Microsoft Translator.

1
Main toolbar
> **ctrl**-click to customise this to contain your most common tools from the Object menu.

2
Drawing toolbox
> These set pointer actions. Select variants by clicking on the lower right triangle.



3
Property bar
> This bar provides access to more detailed settings for the selected object or drawing tool.

4
Inspector
> Selected from the list in the Window menu, commonly for Properties, Objects or Pages.

Get creative with CorelDRAW

Use its shortcuts to save repetition when creating symmetrical objects

IT WILL TAKE
> 10 minutes

YOU WILL LEARN
> To create and use complex objects simply and efficiently

YOU'LL NEED
> CorelDRAW Graphics Suite 2021 (from £299/year), macOS 10.15 or later



Faithful drawing with physical media is repetitive. This introduction to CorelDRAW shows how to use its tools to save time and effort, getting your Mac to do the repeating needed to draw a daisy flower. It can easily be extended to other types of flower, and most other symmetrical objects.

CorelDRAW (coreldraw.com) is the vector drawing app in the CorelDRAW Graphics Suite. Here you'll use drawing tools to create instant and regular ellipses rather than having to draw

the shapes from curves. You could instead scan or photograph your pencil drawing, clean the image up in Corel PHOTO-PAINT, then convert that to vector format using CorelDRAW's PowerTRACE feature.

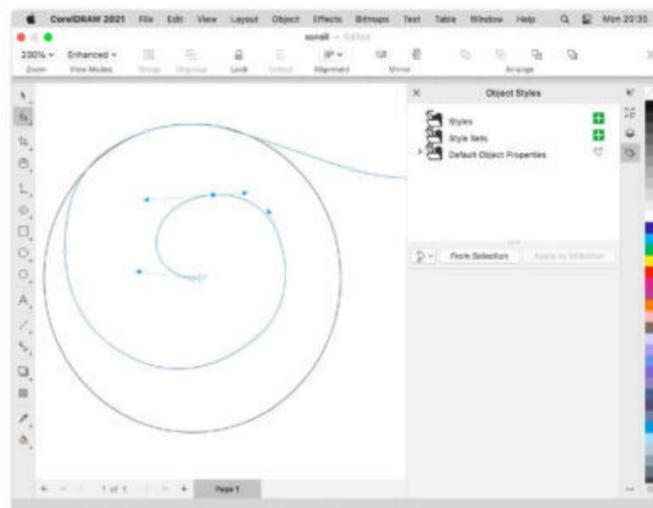
Another option, particularly for less regular objects, is to draw them in using the Smart Drawing tool, which works well with a graphics tablet or, best of all, an iPad with Apple Pencil connected in Sidecar mode.

Going beyond daisies

Corel provides lots of free high-quality clip art, images, fills and fonts to get you started. Here you'll use just one item from its Starter Pack, a bitmap fill. These can be obtained through the Help menu, and Corel's Store also offers a range of paid-for products. You can easily create your own bitmap and vector fills, as well as useful objects containing common graphic elements.

When you've completed this introduction, you can try using different effects to give your daisies a more natural look, and apply them to the side of a 3D carton projected using CorelDRAW's perspective drawing.

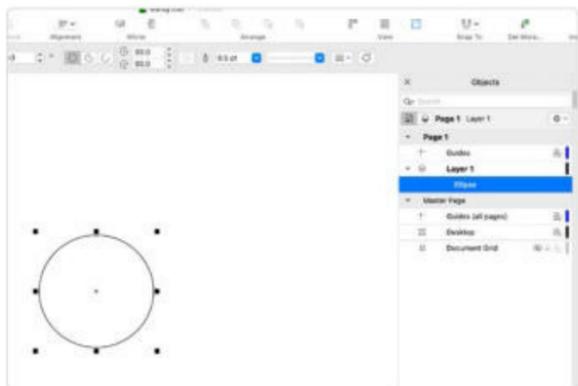
Howard Oakley



Use your iPad in Sidecar when you need fine control for drawing and editing faired curves using Apple Pencil.

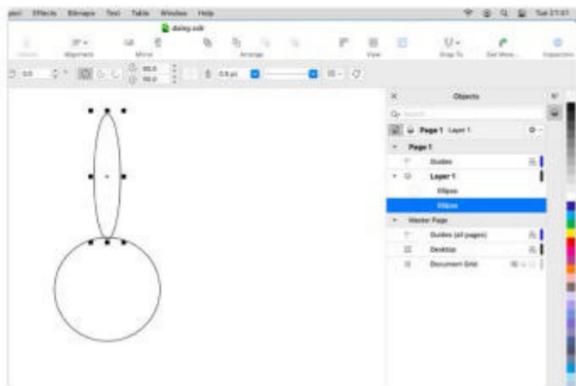
Corel provides free high-quality clip art, images, fills and fonts

HOW TO Get creative with CorelDRAW >



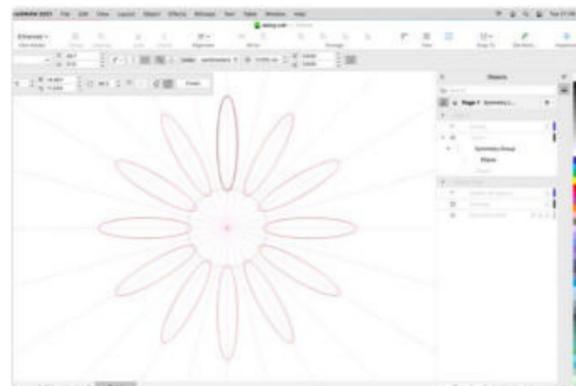
1 Create the disc

Create a new document containing one A4 page in landscape mode. Set the Zoom to 400%, select the circle/ellipse tool, and drag out a near-circle slightly smaller than a third of the height of the working area.



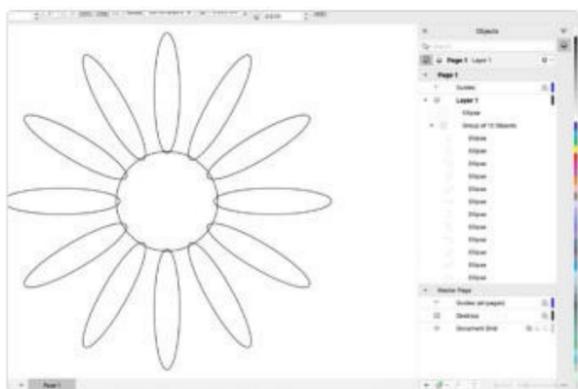
2 Add the first petal

With the circle tool selected, draw in a narrow ellipse at the 12 o'clock position to form a petal, overlapping the disc slightly. Adjust its position by dragging it and, as needed, the numbers in the property bar.



3 Multiply the petals

Select that petal and use the 'Create new symmetry' option in the Object/Symmetry menu. In the symmetry group property bar, set the number of copies to 12, and drag the centre of symmetry to the centre of the disc.



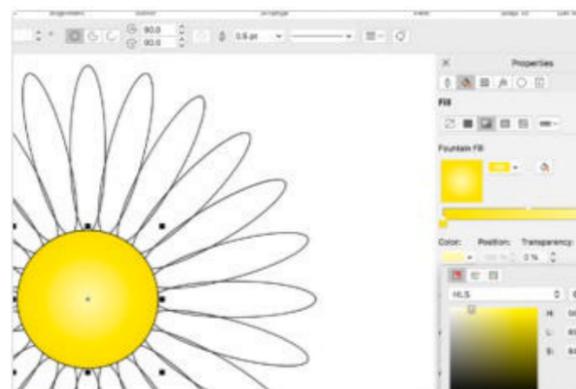
4 Regroup the petals

When you're happy all the petals are properly aligned around the disc, click Finish in the property bar. Select that symmetry group and, in the property bar, click Break Link to change it into a group of objects.



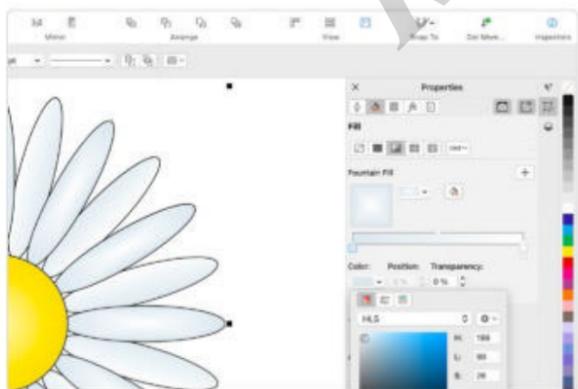
5 Double the petals

Select that group, copy and paste it in place, then select the rotate figure in the edit bar above. Change the rotate figure from 0.0° to 15.0° to rotate the second group of petals into place in the gaps between the first group.



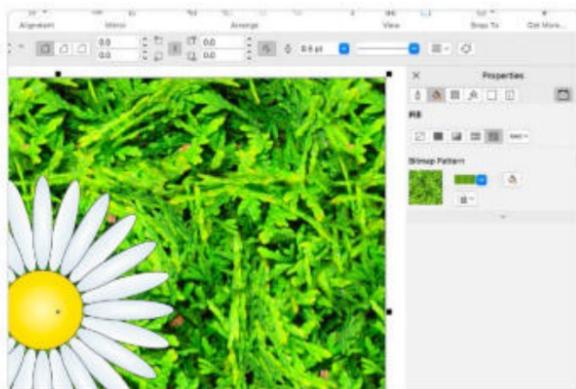
6 Colour the disc

Select the disc and open the Properties editor from the Object menu. Select the Fill tool, and set a central gradient with a Fountain fill from a deep yellow start to a pale yellow, giving it a central highlight.



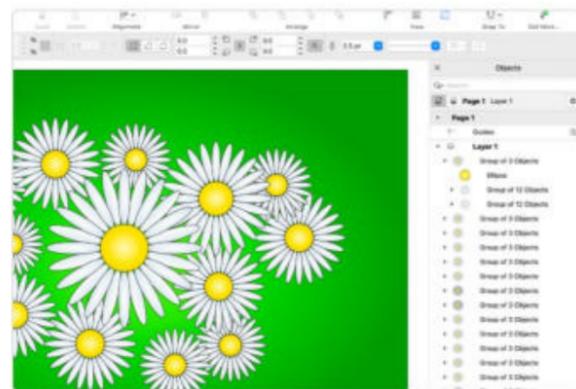
7 Colour the petals

Select one group of petals and give them a colour fill, this time from very pale blue to white in a linear not central gradient. Repeat this procedure with the other group of petals, and adjust their order in the Object menu.



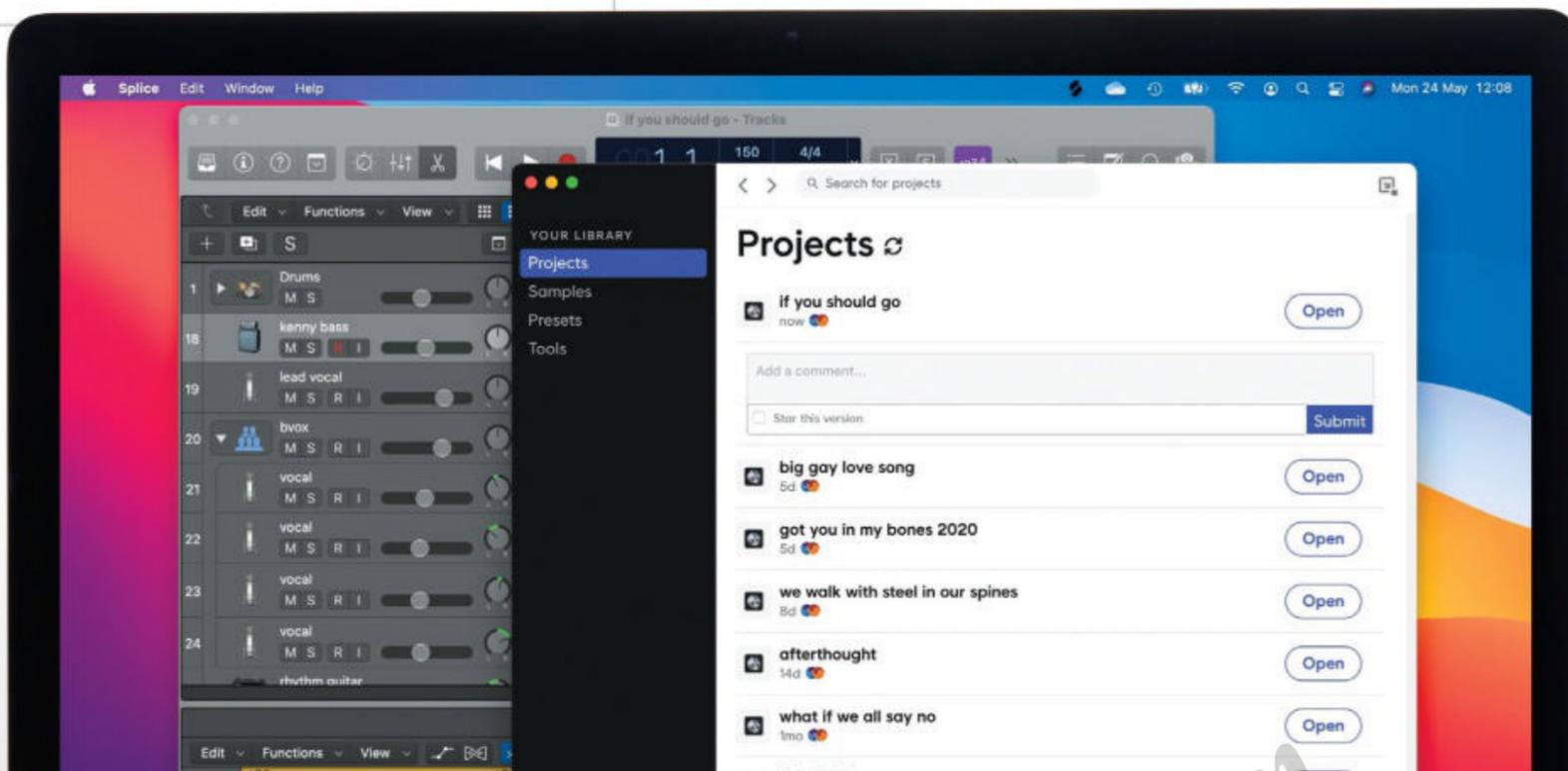
8 Add the background

Select the rectangle drawing tool and drag out a background ordered behind the flower. Set its fill to contrast colour and texture; if you've installed the free Starter Pack, this bitmap fill (079) should be ideal.



9 Spray your daisies

Select the objects in your daisy on the page or Objects list and group them using that command in the Object menu. Zoom out to 200% and duplicate the group, dragging each by a corner to resize them for variety.



How to make music remotely

Use the cloud to collaborate with your musical mates

IT WILL TAKE

> 30 minutes

YOU WILL LEARN

> How to collaborate remotely using Logic or other apps

YOU'LL NEED

> Splice Studio (free), macOS 10.14 or later



If you've ever tried to play along with another musician in a Zoom call, you'll know that the lag in video apps makes real-time

collaboration painful. But that doesn't mean you can't all work remotely on the same track when you can't all be in the same room. Simply share your project with your collaborators and it will automatically update and sync when anybody adds to it.

For remote music making you need everyone to have three things. One, decent

internet access. Two, a music app - ideally the same one you have. And three, an interface they can use to connect their instrument to their computer such as a USB guitar, microphone or MIDI interface.

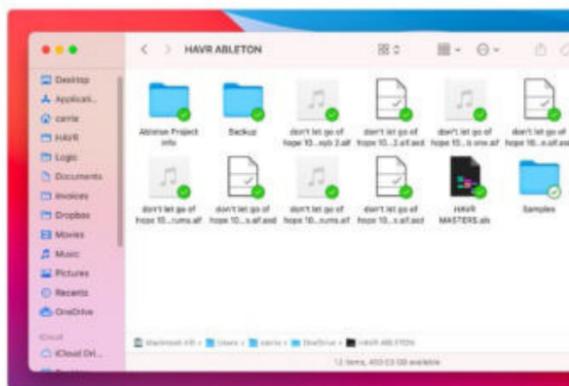
When you have all of those things you can use cloud storage to share and sync your project, but what if your bandmates don't use the same apps - or, whisper it, don't even have Macs? As we'll discover, there's an elegant solution to that and it's called Splice Studio. **Carrie Marshall**

HOW TO Sync and share music projects >



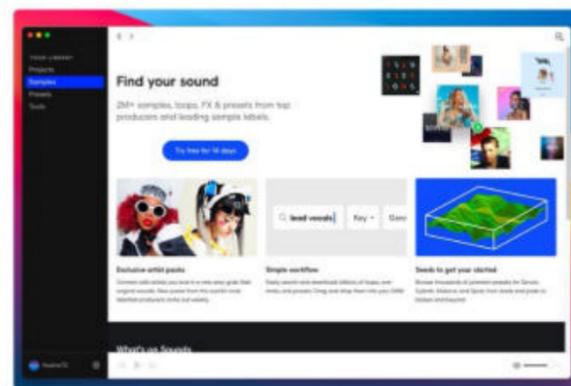
1 Use iCloud Drive

The simplest way to share your music project is to put it in an iCloud Drive folder, **ctrl**-click and choose Share File. However, this only works if the recipient has either macOS 10.15 or later, iOS 13.4 or later, or iCloud For Windows.



2 Use another cloud

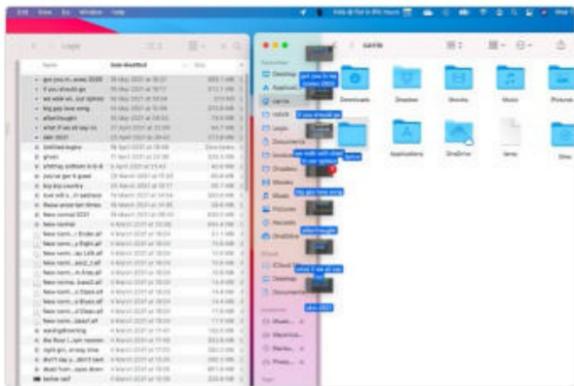
Alternatively, put the project into another cloud storage/sharing service such as Dropbox or Microsoft's OneDrive. Anything put in a Dropbox or OneDrive folder works just as it does with iCloud, updating and syncing as it's changed.



3 Share with Splice

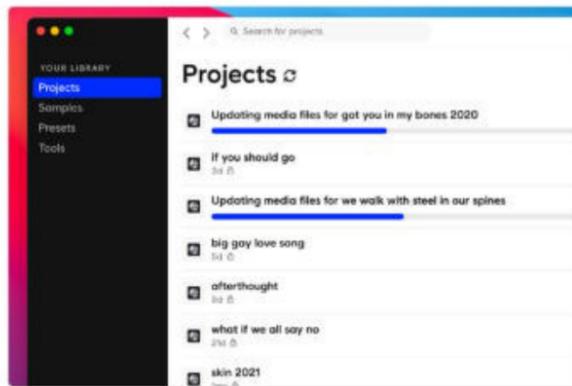
Our new favourite way to collaborate remotely is to use a service called Splice. It works on Macs and PCs and is designed for musicians, with support for Logic Pro X, Ableton Live. and GarageBand. Download and install from splice.com.

CONTINUED... Sync and share music projects >



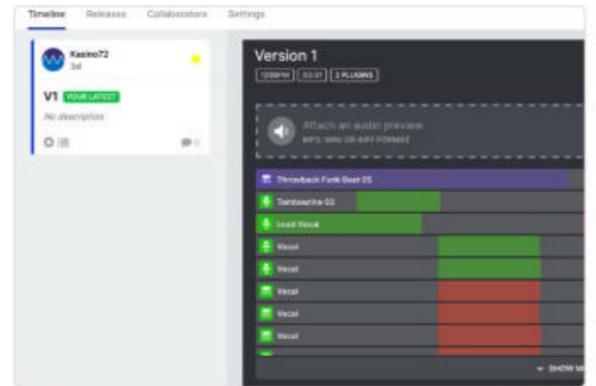
4 Drag or copy

The app creates a new folder on your Mac called Splice. Now you can drag your musical projects into it from another Finder window, or save directly into it from your music app. Here we're dragging a bunch of Logic Pro songs.



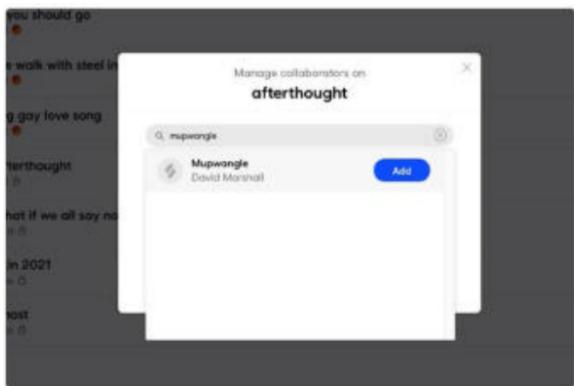
5 Upload your songs

Splice will automatically upload anything new or updated in your Splice folder to the cloud; here, our Logic projects are uploading. Once uploaded, open the project from within Splice, or you can view it on the Splice website.



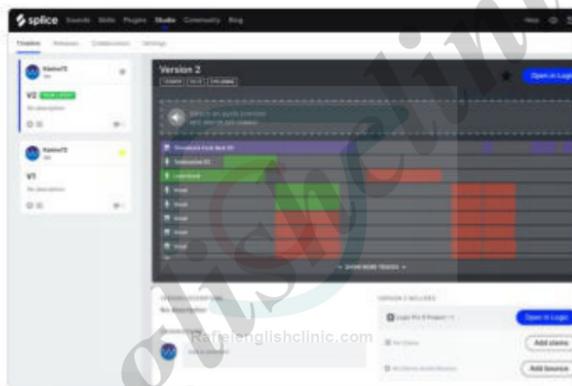
6 See on the web

This is where things get interesting. Splice not only uploads your Logic project, but it also gives an overview of the tracks in it - and you or your collaborators can leave comments on those individual tracks.



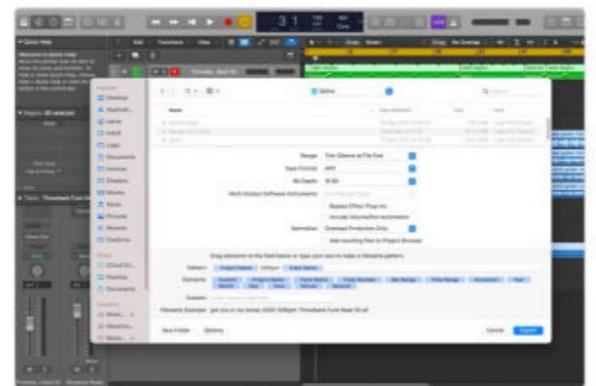
7 Invite the band

Hover to the right of any project's Open button in the Splice app, and you'll see a '...' icon: click it and choose Manage Collaborators to add collaborators to that project. They'll need to have signed up for Splice before you can add them.



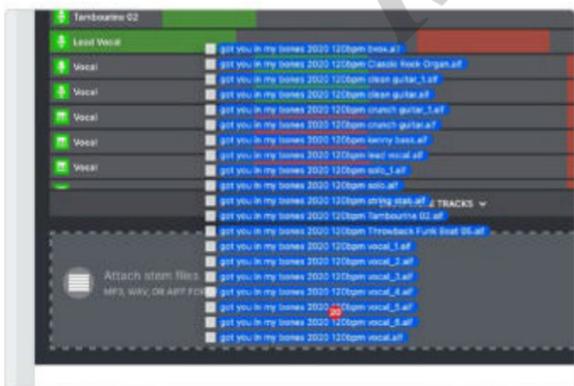
8 Do your thing

If you and your collaborators all use Splice, it will automatically update everybody when someone saves the Logic project - but it will also keep the previous versions so you can recover from other band members' bad decisions!



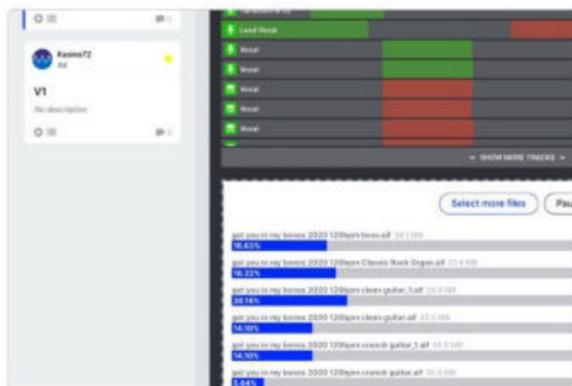
9 Export for other apps

If not all of the band members have a Mac, let alone Logic Pro - don't worry. It's not a problem. Splice enables you to share the individual tracks, called stems. To make stems in Logic, use File > Export > All Tracks As Audio Files.



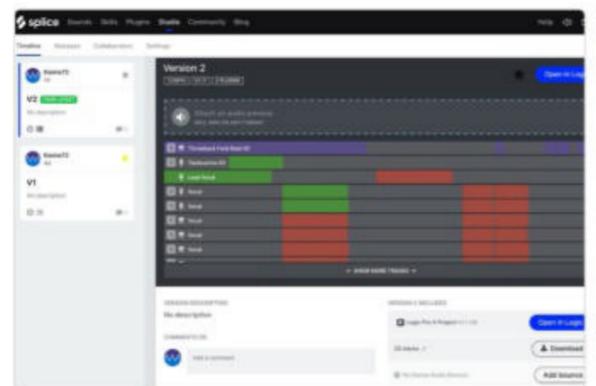
10 Share your stems

Splice only shares projects, not stems, so you need to do that manually online. You can do it in two ways: by dragging from the Finder over the Attach Stem Files bit of the Splice screen, or by using the Add Stems button.



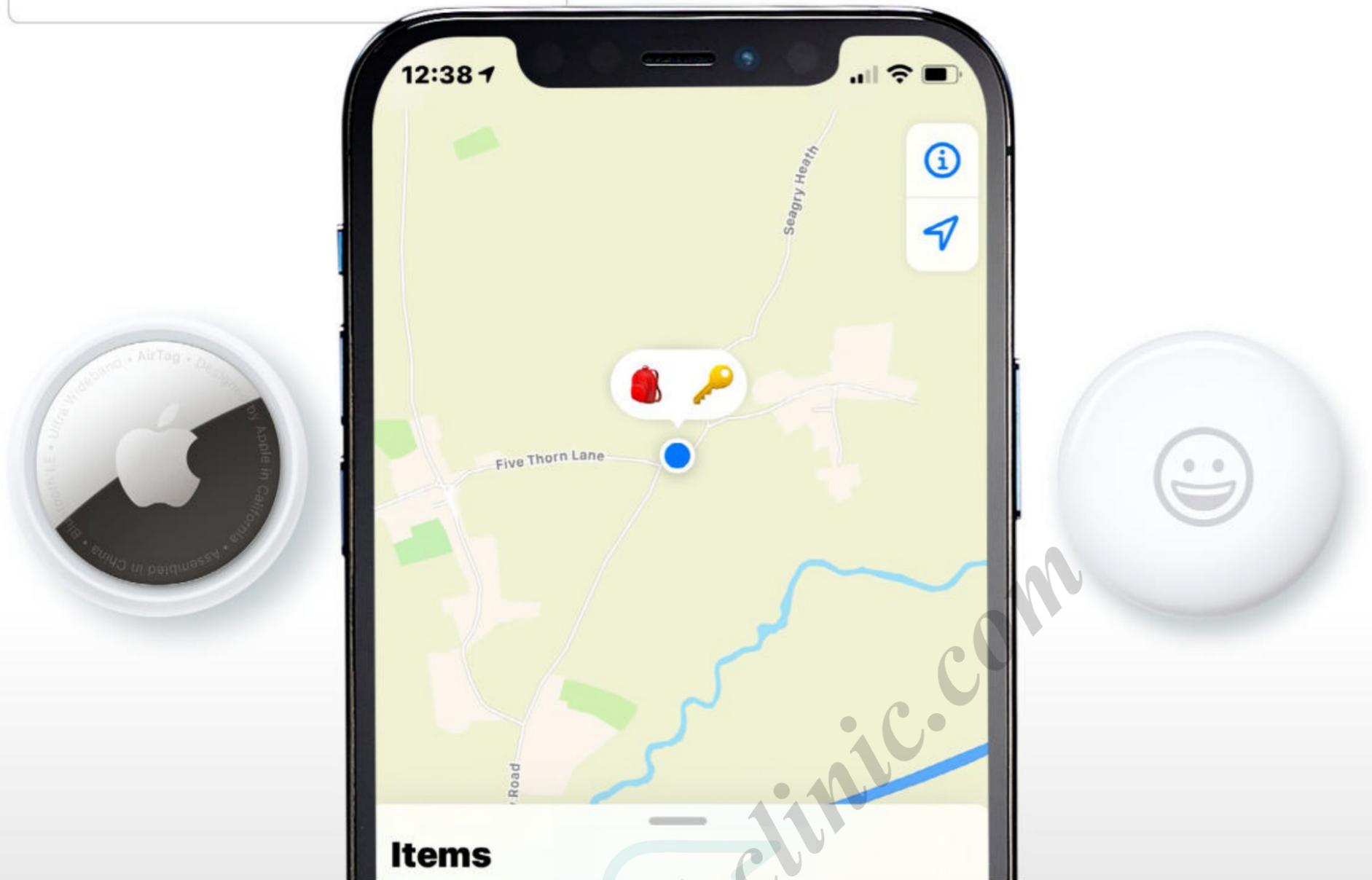
11 Upload for anyone

The benefit of sharing stems is that they work with any music app, but the person you're sharing them with needs to know the project tempo so they can sync any click track or MIDI with the song. Do so by including the BPM in the filenames.



12 Share your song

Once your stems are uploaded, collaborators can download them. You'll need them to export the stem of what they record and share it in the same way: Splice can't update your Logic project if the other person isn't using Logic.



Get started with AirTag

Keep track of your stuff with Apple's new Find My accessory

IT WILL TAKE

> 10 minutes

YOU WILL LEARN

> How to set up and use Apple's AirTag and locate AirTag items

YOU'LL NEED

> An Apple AirTag, an iPhone (preferably an iPhone 11 or 12 with U1 chip), iOS 14.5 or later, Find My app

To further pinpoint an object you can even get an AirTag to play a sound



The Find My app for iPhone and iPad makes it easy to keep track of your Apple devices - you can do so on your Mac and on iCloud (although they work slightly differently).

With the launch of iOS 14.5 and iPadOS 14.5, you can now keep tabs on other items too, thanks to support for third-party hardware such as Belkin's SoundForm True Wireless



AirTags cost £29 each or £99 for four. To attach one to an item, you'll need an official accessory, such as an AirTag Loop (from £29) or AirTag Leather Key Ring (from £35).

AirPods and VanMoof's S3 and X3 E-bikes, plus you can also use it to track more personal items such as keys and bags. All you need to do is attach and activate an Apple AirTag (£29) or Chipolo ONE Spot (£28) to each one, then select the items tab in the Find My app to locate each object you've added a tag to.

Precision finding

If you own an iPhone equipped with Apple's U1 chip (the iPhone 11 or iPhone 12, say), you can go even further. That's because the U1 uses ultra-wideband technology for precision location finding with arrows indicating the direction of the object appearing on screen. Your iPhone will even vibrate when you get really close. To further pinpoint an object, you can also get an AirTag to play a sound through its built-in speaker. Used in this way you may never lose your bag or keys again.

Here you'll discover how to set up and use an AirTag and find an item you've attached it to using the Find My app. Let's get started.

Rob Mead-Green

HOW TO Set up and use an AirTag >



1 Add an AirTag

Take your AirTag out of its packaging and remove the plastic tab to activate the built-in battery. With Bluetooth and Wi-Fi active on your iPhone, hold the AirTag close to it. Click Connect when the pop-up window appears.



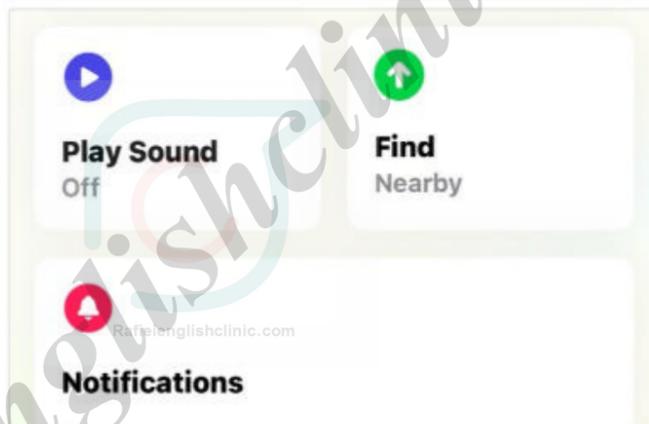
2 Name your AirTag

Now choose an identity for this AirTag. Scroll through the list of names that appears onscreen (eg, Keys), then tap Continue. Or click Custom and type in a name of your choosing. Again, tap Continue when you're done.



3 Register your AirTag

The next screen will enable you to link your AirTag to your Apple ID and so have it appear in the Find My app on iPhone, iPad and Mac as well as on iCloud.com. Tap Continue. On the next screen, tap 'View in Find My app'.



4 See its location

In Find My > Items, you should now see your named AirTag's location, its name, and four further options: Play Sound, Find, Notifications and Lost Mode. Tap Play Sound and your AirTag will chirp in response.



5 Find a lost AirTag item

If you can't find your keys or any other item with an AirTag attached, tap Find in Find My. On iPhone 11 or iPhone 12, you'll now see a series of arrows appear on screen that can help guide you to its precise location. Try it!



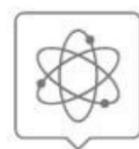
6 Enter Lost Mode

If you can't find an AirTag item, turn on Notifications to be alerted when it next appears. If you've really lost it, tap Lost Mode. This enables anyone with an NFC-equipped device to tap it and get in touch with you.



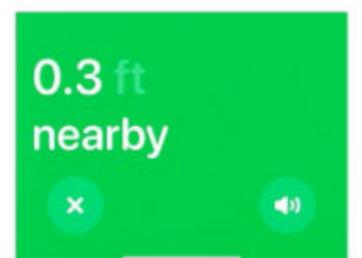
Jargon buster

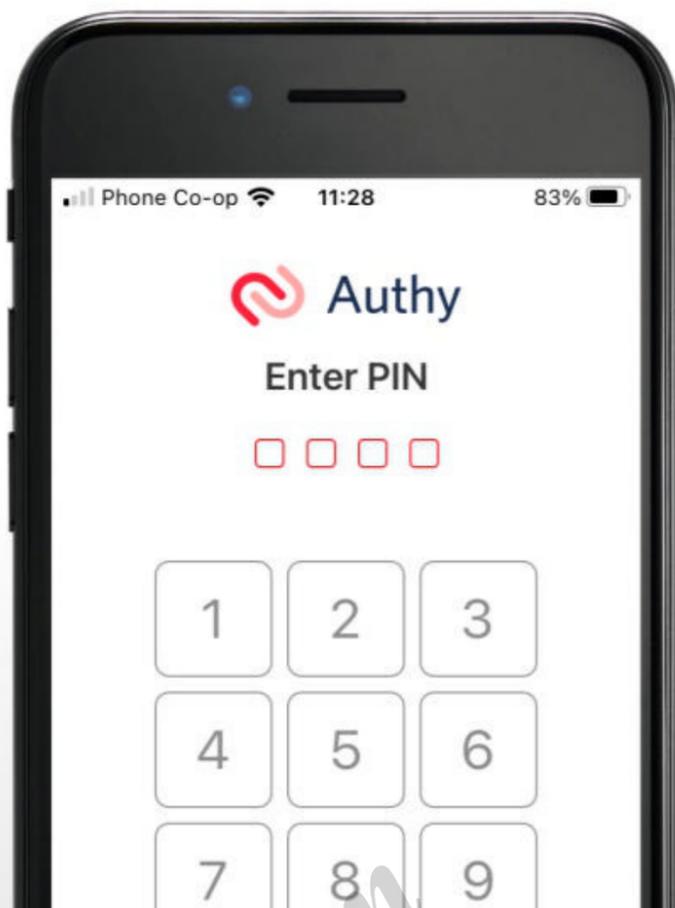
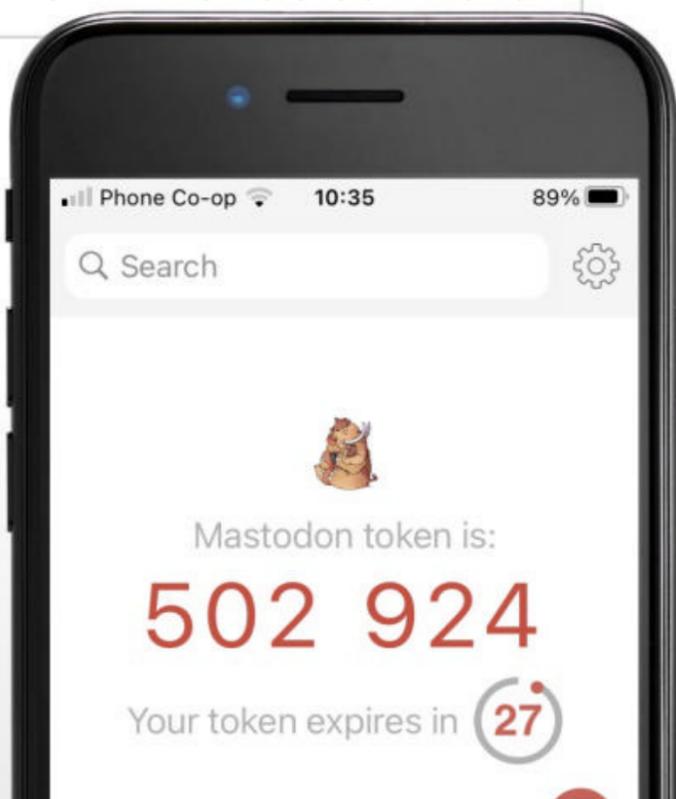
> **Ultra-wideband** is a low-power, broad bandwidth radio technology that is ideal for location finding and is used by the U1 chip inside the iPhone 11, iPhone 12 and Apple Watch Series 6.



Genius tip!

> To make your AirTag play an audio alert while using Find My > Find, tap the speaker icon. You should now hopefully hear it chirp up.





Protect accounts with 2FA

Add a secondary layer of security to your online accounts and services

IT WILL TAKE

> 10 minutes

YOU WILL LEARN

> How to set up Twilio Authy to generate and supply 2FA codes

YOU'LL NEED

> iPhone running iOS 11 or later, Authy (Free)



Two-factor authentication (2FA) is a form of additional verification to protect your online accounts in case your password is compromised.

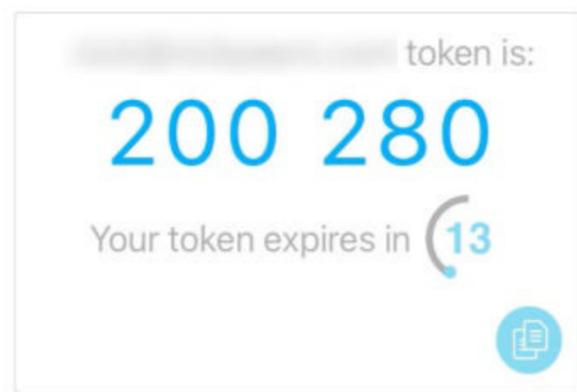
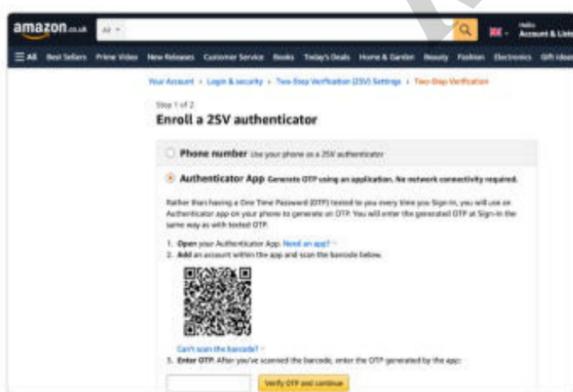
Verification can take several forms: 2FA is the most popular, but others include receiving a confirmatory email or SMS message to your phone, or the need to complete logon using a secondary device (as favoured by Apple).

2FA links your phone to your account via a special authenticator app that generates

rotating numerical codes (six-eight digits) that change every 30 seconds. After entering your password, you'll be prompted to check your app for the code, which you input to complete the logon process.

There are several apps available - we've chosen Twilio Authy because it supports multiple devices and secure backups. Once you've downloaded it, you'll need to supply your phone number and email, then enter the registration code you receive via phone call or SMS to verify your account. **Nick Peers**

HOW TO Enable 2FA for any supported website >



1 Add a 2FA code

Log into one of your online accounts. If it supports two-step verification it's likely to be in the Account or Security section. Switch this on, then choose the Authenticator App option, which should reveal a QR code.

2 Set up Authy

Open the Authy app, tap the Settings button and switch to the Accounts section. Tap the '+' followed by Scan QR Code and use your phone's camera to capture the code which will then set up the new 2FA link.

3 Select logo and verify

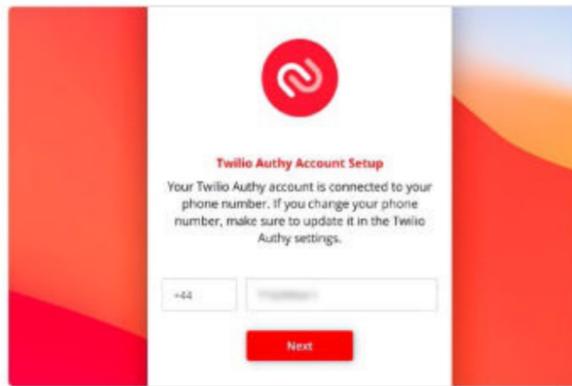
Authy will attempt to identify the service you've connected to and pick a suitable icon. Tap Save and Exit. Your new account should be selected, so type the code into the web page to complete setting up the link.

HOW TO Backup and sync >



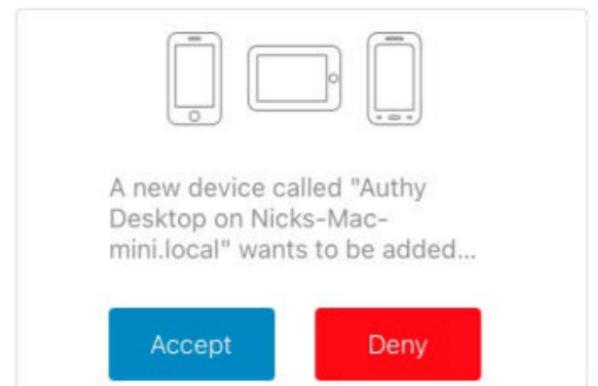
1 Enable cloud sync

When you add your first account, you'll be prompted to create a password (make it strong - 12 characters minimum - stored in your password manager). Enter it, tap Enable Backups and then retype the password to confirm.



2 Set up backup device

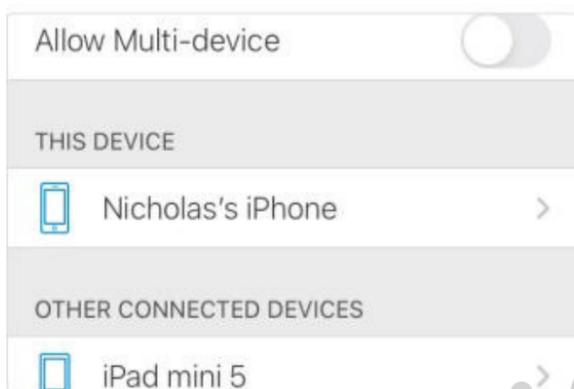
Go to authy.com/download to install Authy on your secondary device - this can be on iPad, Mac, Android, Linux or Windows. Open Authy on your new device and enter your country code and number into the boxes, then click Next.



3 Authorise connection

Choose Existing Device to receive verification via your phone. Tap the notification that appears on your phone, then open Authy and tap Accept, then type 'YES' before tapping OK to sync your codes to your new device.

HOW TO Protect your account >



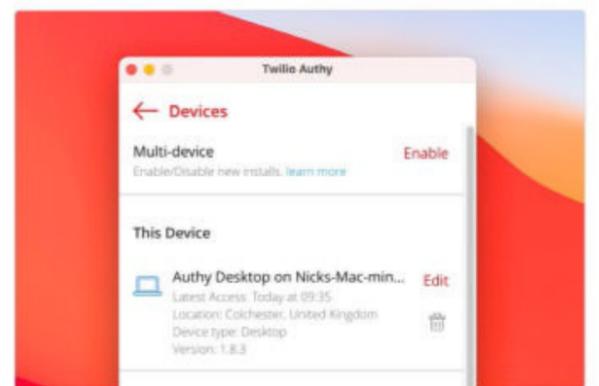
1 Disable multi-devices

Once you've set up your chosen secondary device(s), remove the risk of additional unauthorised devices being added by disabling multi-device support. Navigate to Settings > Devices and switch Allow Multi-device off.



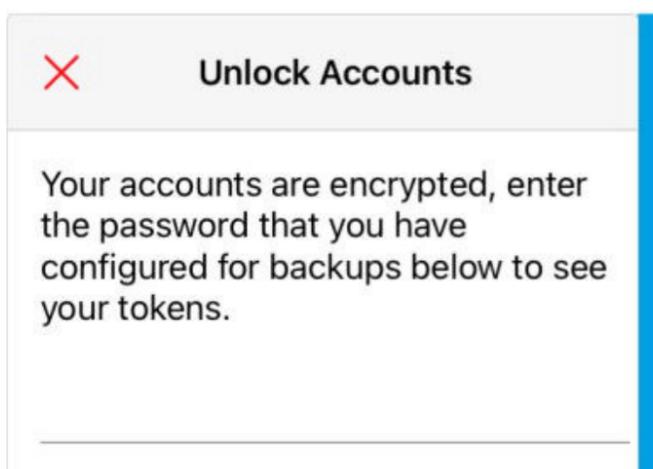
2 Protect app

Next, prevent anyone from accessing Authy should they steal your phone. Navigate to Security > My Account and tap Security. Toggle all the available switches to on, and set a four-digit passcode when prompted here.



3 Review and remove

If a device is no longer required, or gets stolen, then log into Authy on another device and navigate to Settings > Devices. Either tap the device or the bin next to it, then choose Remove Device followed by Yes.

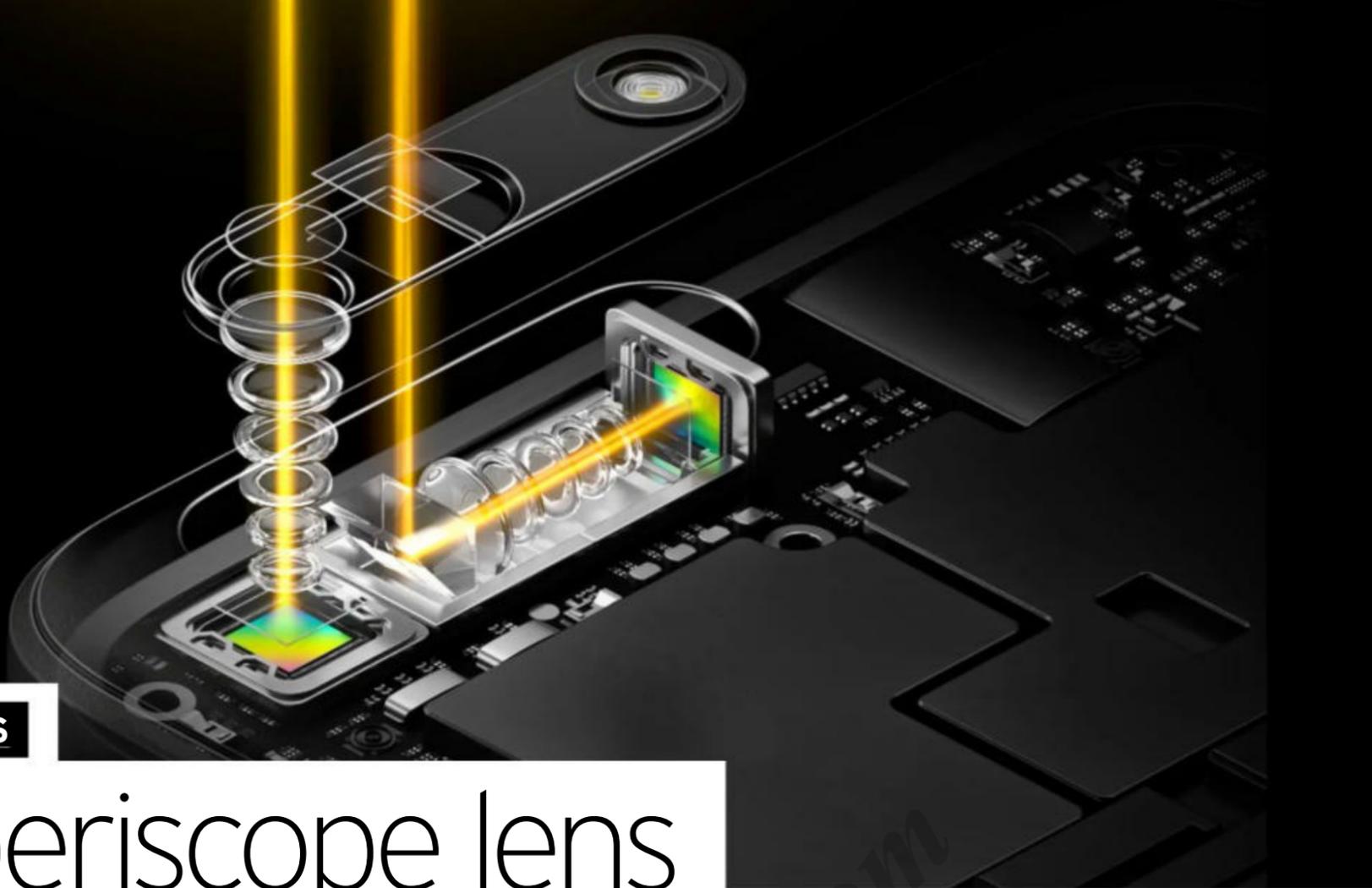


Recover your account

Restore access to Authy from your phone >

If you're forced to remove Authy from your primary phone, but later recover the phone successfully, download the app and go through the account verification process as outlined in the main text. After doing so, all your accounts will appear back on your phone, but you'll see they're protected with a lock symbol - tap one and enter your Authy backup password to unlock your account and regain access. If this doesn't work, visit authy.com/phones/reset to begin the account recovery process, which can take up to 24 hours to complete.

This image, by Chinese hardware firm OPPO, shows how a periscope lens works in a smartphone.



HOW IT WORKS

The periscope lens

How submarine tech could mean better iPhone photos

YOU WILL LEARN

► How periscope lenses could enhance iPhone photography

Periscope lenses give you longer zoom without requiring an enormous camera assembly

Key fact

► To get a longer range zoom you need to increase focal length - the distance between the lens and camera sensor. In a normal camera, you do that by making the lens move outwards, for example by having a telescopic lens. Telescopic cameras have been tried in smartphones but they weren't too successful.



According to multiple well-connected Apple leakers, the iPhone could be getting a new kind of camera in 2022; one that sees further than any existing iPhone camera without any loss of image quality.

That's because Apple is experimenting with periscope lenses. It wouldn't be the first to do so, either. Samsung's Galaxy S20 and S21 Ultra both have periscopes, and other Android firms are following suit with their own high-end products. So what is a periscope lens and why would you want it in your phone? Let's - ahem - look into it.

Why periscopes can help you see so much further

Periscope lenses enable you to get much more powerful optical zoom without requiring an enormous lens sticking out of the back of your phone. To understand why that's important we need to understand how optical zooms work, and why digital zooms aren't as good.

With optical zooms you get the same level of detail no matter how much you zoom in or out; with digital zoom, software tries to guess what detail a zoom lens would see. It's clever, but it's no substitute for the real thing.

In order to use optical zoom, you need to change the focal length of the camera. That's the gap between the lens or lenses and the camera sensor. Short focal lengths are brilliant for close-up photos, delivering great detail and a very wide angle. That's something many smartphone cameras excel at. But it's no good for things that are far away. To shoot them, you need the focal length to be as long as

possible. That means you get the same amount of detail with much longer range.

The problem with that is increasing the focal length means physically moving the lens or lenses further away from the camera sensor, and there's not a lot of room to do that in a typically slim smartphone. Firms such as Samsung did try to solve that problem by putting enormous telescopic cameras on otherwise slim phones such as the Samsung Galaxy K Zoom, but while the results were effective enough the phones weren't very popular. So manufacturers decided to steal some ideas from submarines instead.

Periscopes: why they're not just for submarines

We've all seen submarine periscopes in movies where a grizzled captain pulls down the periscope to look for the enemy. It's a very sensible solution to a particular problem; you need to see the ships you're targeting, but you don't want to come to the surface. A periscope solves that problem by using angled mirrors to bounce light from the lens, which is horizontal, down the periscope tube, which is vertical.

Periscope phones do exactly the same thing, but instead of bouncing the light downwards they bounce it sideways, moving it horizontally across the back of the phone. On the outside the lens looks the same, but instead of sitting in front of a sensor it sits in front of a mirror. That mirror bounces the incoming light at a right angle so it travels horizontally through other lenses until it reaches the sensor. By making the light travel that distance, you can increase

Snap happier >

> **The iPhone 12 blends hardware and software in a clever way by using Computational Photography to deliver pro-quality photos instantly.**

In addition to normal image processing it uses machine learning tech to analyse an image and break it down into its component parts, each of which is analysed and adjusted separately. For example, if you were taking a photo of a person, your phone would identify and process the background, clothing, hair, eyes and lips separately, adjusting exposure

and saturation and then blending them all together. The results are particularly good with traditionally tough tasks like shooting under skies. Bright skies can often overpower the subject in a photo, but with Smart HDR the sky is analysed and adjusted separately from everything else. Your iPhone effectively cuts out the sky, fixes it and sticks it back again. The same processing is used in Night Mode, which takes advantage of new image algorithms to remove noise and produce better low light photos.



This Night Mode shot was taken on an iPhone 12 Pro Max by NKCHU in China.



Firms such as Samsung tried to combine telescopic cameras with smartphones, such as in the Galaxy K Zoom, but without much success.

the focal length far beyond what a normal smartphone camera can deliver. Where a normal camera might have a focal length of a few millimetres, periscope cameras can have a focal length measured in centimetres - without having to make the camera bump any more prominent.

The power of the periscope

That additional focal length means much better optical zoom. How much better? In a device such as the Samsung Galaxy S21 Ultra, the periscope camera achieves 10x optical zoom. That's something you'd normally need a proper camera for, not a smartphone. Samsung uses software to turn that into an effective 100x digital zoom, although as with all digital zooms quality degrades noticeably; as you get towards three figures, the picture

becomes more impressionistic than photographic.

Like most digital zooms, the figure of 100x here is more about looking good on a spec sheet. While the Samsung is capable of shooting at up to 108 megapixels, at 100x zoom that's 108 megapixels of jaggy and indistinct detail. However, as our friends at Techradar (techradar.com) pointed out in their Samsung review, what's happening at 100x zoom on the Samsung is effectively the same thing that happens at 10x zoom on phones without optical zoom lenses. And if you stick to

the 10x optical zoom, the results are superb, enabling you to get really close to faraway things without losing any detail.

Do you need a periscope lens system in your iPhone?

The short answer is yes; it means longer range for photography and for video too. But how much longer that range will be depends on a lot of things, not least how much room Apple can make inside the iPhone's case for that horizontal lens assembly. It's clearly possible, as Samsung's Galaxy Ultra demonstrates, but don't hold your breath for a periscope lens in the iPhone 13 mini. For the time being, periscopes are more likely to appear in Apple's biggest phones, most likely the iPhone 13 Pro and the iPhone 13 Pro Max.

Carrie Marshall

Key fact

> Normal periscopes use two angled mirrors to reflect light, so in a submarine periscope the lens is horizontal and the image is then reflected downwards before being reflected again into the viewer. Periscope lenses in cameras use a mirror too; they reflect the incoming light at a 90° angle so it travels across the width of the phone.

GENIUS TIPS



EXPERT ADVICE

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EDITED BY **HOWARD OAKLEY** >

Living in strange times >

Until Apple released Big Sur, it had always provided

standalone installer packages for macOS updates and Security Updates. While those

continue for Mojave and Catalina, Big Sur's new Sealed System Volume requires a different kind of installer. The choice now is Software Update when it's available and works, or download the full installer app and use that.

If you just want to update macOS and preserve your existing Data volume, that seems a gamble. In early releases of Catalina, full installers had a nasty habit of trashing or duplicating any existing Data volume - do you remember getting 'Macintosh HD - Data - Data volumes'?

Thankfully, Big Sur's installers are behaving better, but they're still far less friendly than standalone updaters. Maybe Apple will reconsider and bring back updaters.

Big Sur's missing updaters

Q I often start my M1 Mac mini up from a Thunderbolt SSD, but since updating its internal drive to macOS 11.3.1 I've been unable to update that external disk. How can I do that?

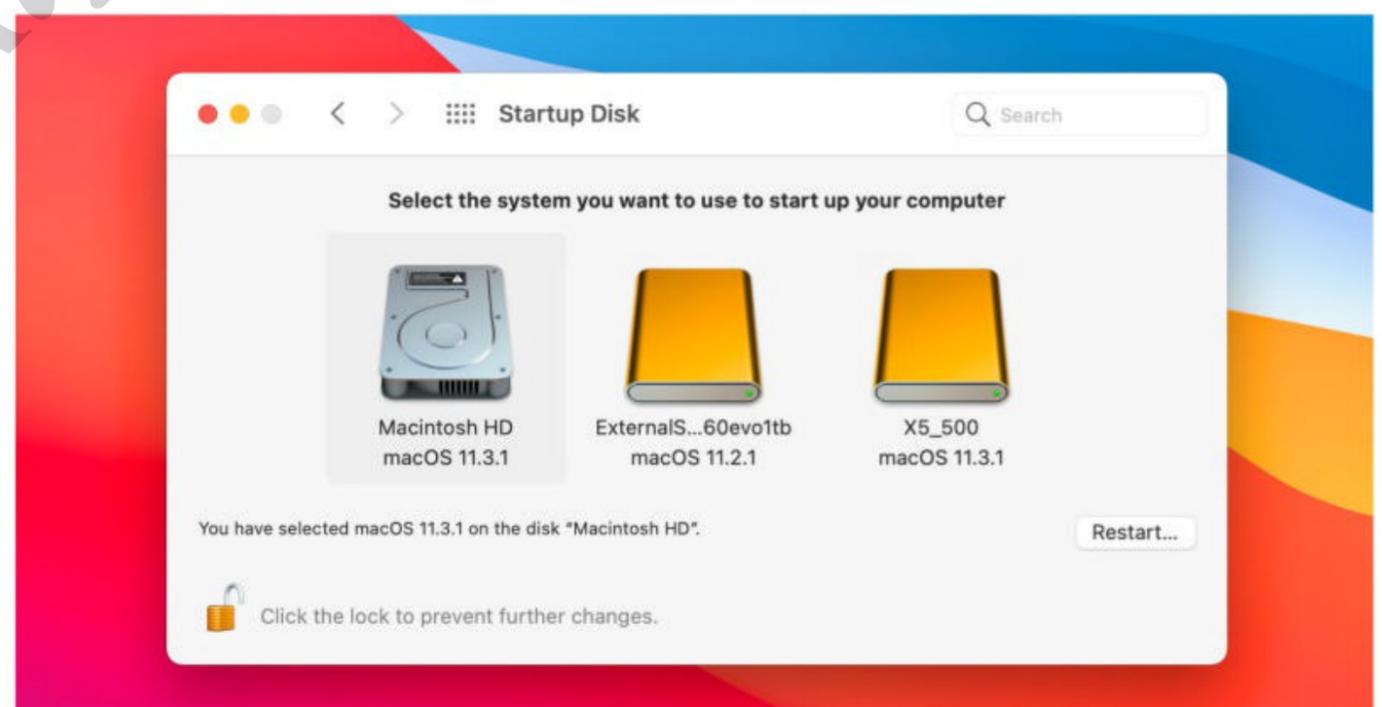
by SIMON LUMSDEN

A Using external startup drives with M1 Macs is tricky. To ensure success, you need to change security boot policy for the external drive in Recovery Mode.

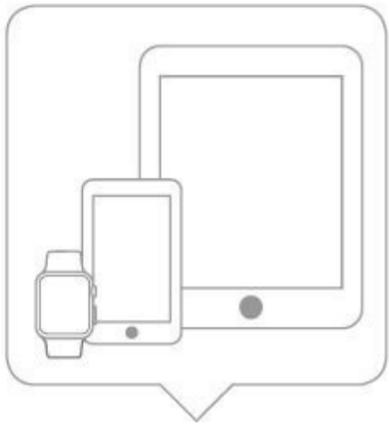
Start your Mac up in Recovery by holding the Power button until the Options icon appears. Select Options and click Continue to open the Recovery Assistant. There select the user you know the password for and click Next.

Enter the password to see the Recovery window. In the Utilities menu, select Startup Security Utility. In its window select the external disk with the old version of macOS on it and click Security Policy... Set the policy to Reduced Security and click OK, then restart your Mac using the Apple menu.

When your Mac restarts, open the Startup Disk pane and switch to your external drive. That should start up normally, and you can update it to the current release using the Software Update pane. Once that's done, start up in Recovery Mode again and set boot policy for that drive back to Full Security using Startup Security Utility to ensure that your Mac is fully secure again.



Setting a startup volume to Reduced Security lets you run older versions of Big Sur on M1 Macs.



iOS software >

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

Quick-fire questions >

How do I sync the page I'm reading in Books?

> Open Settings > [your name] > iCloud and enable iCloud Drive and Books. Then go back to the Books item and turn on Reading Now. This only works across other iOS and iPadOS devices accessing the same Apple ID, and still doesn't work with Macs even if they share the same account.

How can I tell the Wi-Fi channel my iPhone is using?

> Install Apple's free AirPort Utility from the App Store. Open that app in Settings, and enable Wi-Fi Scanner. In the AirPort Utility app, tap Wi-Fi Scan at the top right, then tap Scan to see channel details. Remember to disable Wi-Fi Scanner in Settings afterwards to save power.

NETGEAR32-5G	4434 FC 20 67 90
R59 - 48 MHz	Channel 35 12/09/2021, 09:58:31
R59 - 47 MHz	Channel 35 12/09/2021, 09:58:28
R59 - 53 MHz	Channel 35 12/09/2021, 09:58:31
R59 - 53 MHz	Channel 35 12/09/2021, 09:58:18

Do AirTags drain the battery?

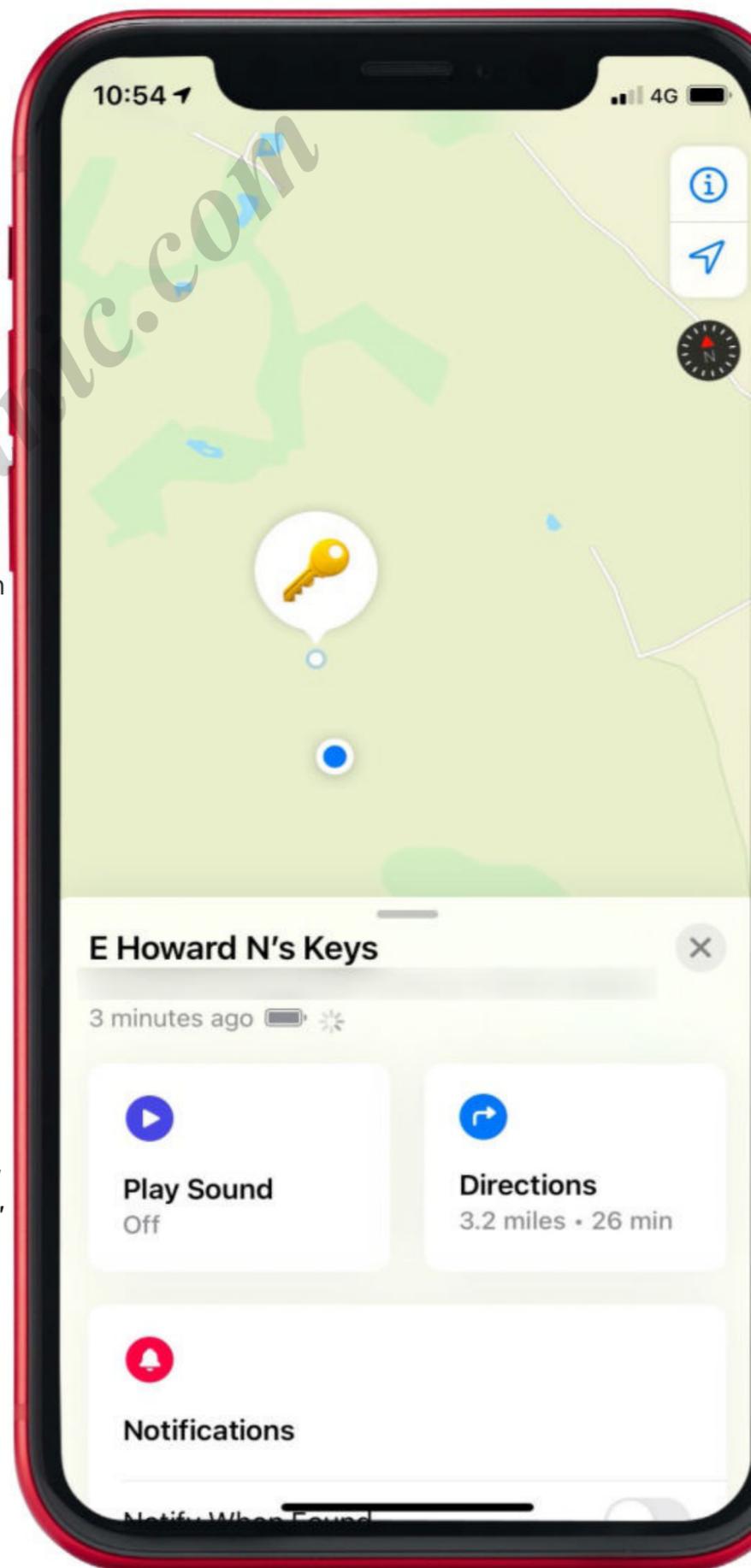
Q My partner and I updated our iPhones to iOS 14.5 to use AirTags. Now, when we track them in the Find My app, both phones use a lot of battery power. Is that normal?
by DON MACLEOD

A In normal use, AirTags in your iPhone's Find My list should make little difference to its battery use. AirTags aren't intended to track items which aren't normally with you, nor people. Pop one on a keyring, a purse or bag which you keep nearby and could be misplaced. When you can't find them, open Find My and tap Items to see where your AirTags are.

To track someone, that person will need to agree and share their location with you, so you can view their location in the People section of the app. That uses common location services rather than Apple's Find My system, and remains under their control.

Because of the danger of misusing AirTags to track people, Apple has built deterrents into the Find My system. If an unknown AirTag moves with you for a while, the Find My app notifies you of its presence, and the AirTag plays a sound to help its location. You can then tap and hold your iPhone against the white side of the AirTag to learn information about it: Apple details this at bit.ly/mac367airtagalert.

Keep track of the battery use of the Find My app if you're concerned, by opening Settings and tapping Battery, which lists usage by each app. Sometimes shutting your iPhone down then starting it up again can return battery use to normal after an iOS update.



Ideal for finding keys when you've dropped them, AirTags aren't intended for tracking items you don't keep with you.



Mac hardware >

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

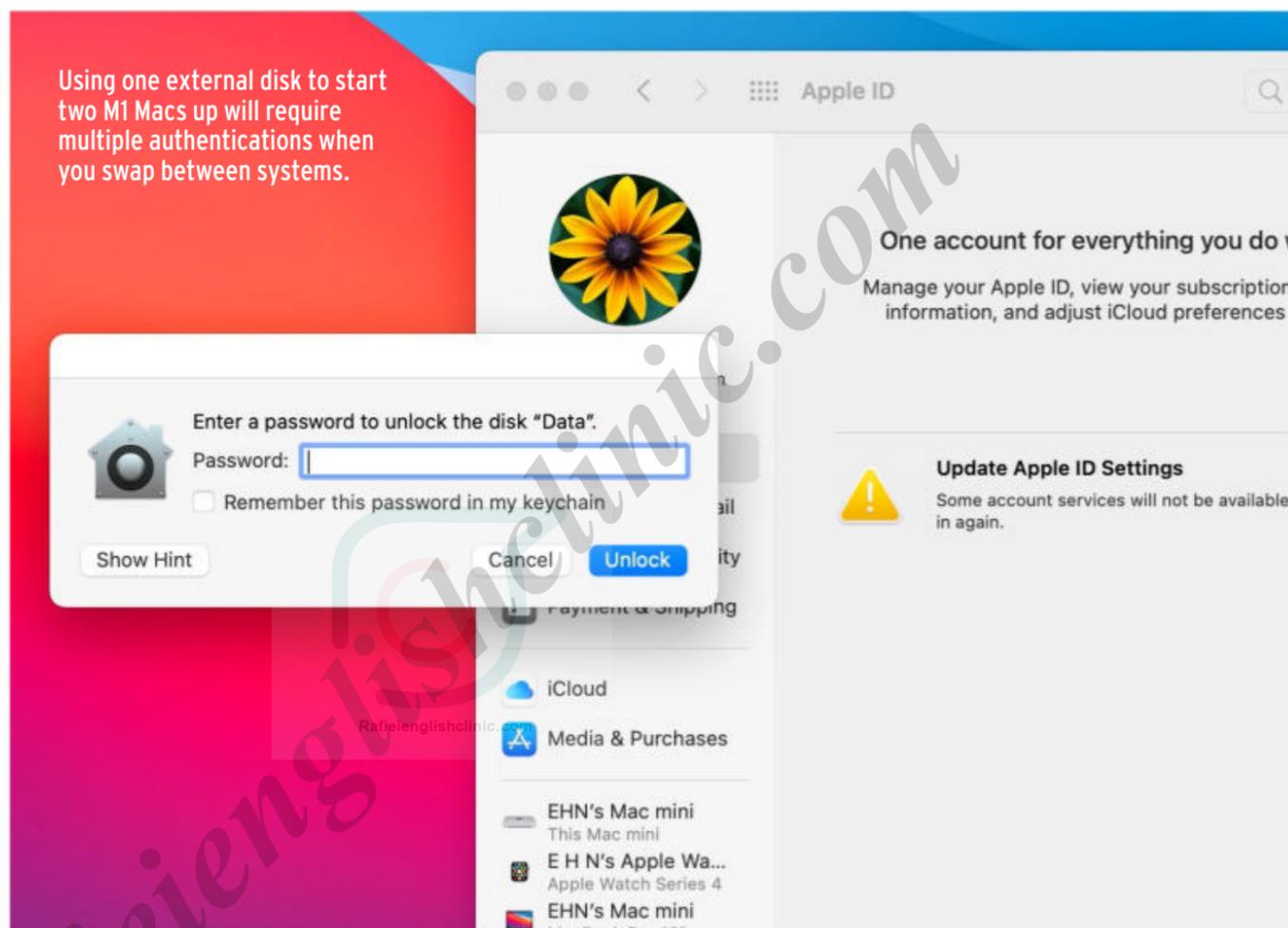
Quick-fire questions >

Can I replace the Fusion Drive in my iMac 5K 2017?

> Not unless you're very skilled at tricky internal surgery, as the process requires separating your Mac's display and moving its left speaker. This is explained in iFixit's guide at bit.ly/mac367imacdrive. You almost certainly need to pay a qualified Apple technician to do that for you.

How do I check the last Diagnostics result code?

> Use the About This Mac command in the Apple menu, click on System Report... and select the Diagnostics item at the left, in the Hardware section. That should tell you the last time Diagnostics was run, and the result. M1 Macs running 11.3 may not update this correctly, though, as it's stored in NVRAM.



Starting two M1 Macs from the same disk

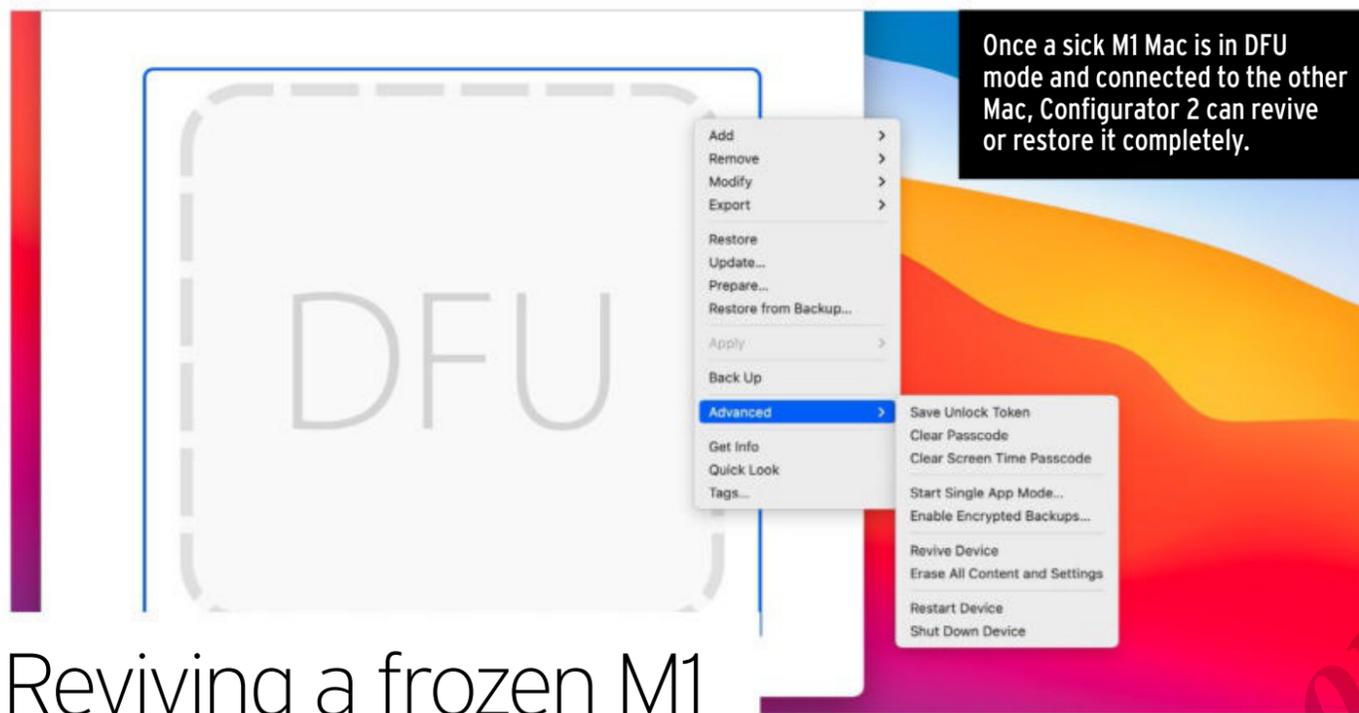
Q When my M1 iMac arrives, can I start both it and my M1 MacBook Air from the same external drive?

by EDDIE CHANDLER

A Yes, once you've set your external drive to work with both Macs, and provided that they and the drive are running the same version of macOS. Format it as APFS and run the current Big Sur installer app from the App Store, or in Recovery Mode if you prefer. When you're invited to create and migrate the existing user, agree, and authorise the drive for startup from that Mac. Using the Startup Disk pane, restart that Mac from your external drive and check that it's properly set up, which will require you to sign it into your iCloud account.

Return to the Startup Disk pane, restart from the internal drive, then eject your external drive from that Mac. Connect it to your other Mac, open the Startup Disk pane there to make the external drive that Mac's boot disk. You'll be prompted to select its authorised user, and that Mac should then be able to start up from it as well.

Once set up, you'll probably need to authenticate in four ways each time you start either of your Macs up from it: your normal user password login first, then the password to access the internal SSD of that Mac, followed by your Apple ID password, and finally the six digits sent to your main device for two-factor authentication of your Apple ID. Those are common to all Macs running Big Sur from an external disk, and aren't peculiar to M1 models.



Reviving a frozen M1

Q When I tried to create a new user account on my M1 MacBook Air, it froze, and won't accept any password to start up. What can I do?

by CONCETTA SCRIMSHAW

A Try starting it into Recovery Mode by pressing and holding the Power button until it displays the Options icon. Select that icon and click Continue underneath it. If that provides recovery tools, try reinstalling macOS.

If you can't enter Recovery Mode or get any further, you'll need to get the whole

system restored. If you have another Mac with the current version of Apple Configurator 2, from the App Store, and a USB-C cable to connect them, you can do this yourself. Apple's detailed instructions are at bit.ly/mac363config2. Although this appears daunting, it's actually straightforward.

Apple recommends trying to revive it first, which updates firmware and Recovery, but in your case you're almost certain to have to perform a full restore, which erases all user data and installs a fresh copy of macOS. That comes from an IPSW image file which Configurator can download for you.

How do I fix dead Ethernet on a Mac mini 2018?

> Ethernet hardware is part of the logic board, so is an expensive replacement. You can work around this by connecting a compatible USB-C or Thunderbolt dock with its own Ethernet port, which should prove much cheaper and provide additional ports too.

Do M1 and Intel Macs give the same maths results?

> Yes, they're identical. That's not just the vast range of calculations they get correct, but in test cases producing less than perfect results because of accumulated errors, those are also exactly the same. You shouldn't notice any difference in calculation results between the two machines.

Hot and flat MacBook Pro

Q When using Chrome on my MacBook Pro 2018, it gets too hot to rest on my lap, and within 90 minutes it needs recharging. What's wrong with it?

by ADAM HARRIS

A First connect it to mains power without any peripherals connected to it and start it up in Diagnostics Mode, holding the **D** key. If the diagnostic results are normal, you'll need to ensure that any cooling vents in its case are cleared of fluff or dirt. Open Activity Monitor to get a better idea of what's loading the processor. Select the CPU view and click on the header of the %CPU column

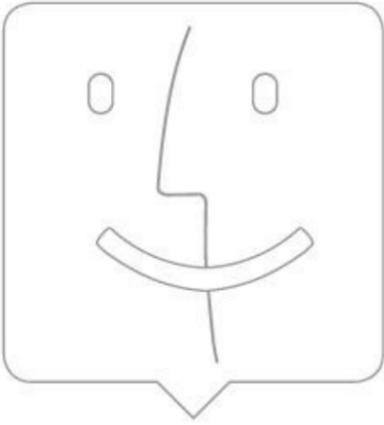
to put processes which are using the most CPU at the top. There's a catch here: you may see a process named `kernel_task` at the top of the list. macOS gives that process a lot of CPU time to prevent other processes from loading the processor when it starts getting too hot. That's part of its cooling system, not a cause of your Mac overheating.

Chrome isn't known to be frugal with the CPU, and you may find that using another browser such as Safari lets your Mac run cooler. If it continues to run hot in spite of Diagnostics being normal, it'll be worth your while getting it checked out by Apple, as it still could prove to be a hardware fault, perhaps a failing battery.

Activity Monitor's CPU listing lists the processes which are loading the cores in your Mac, to help discover what's responsible.



Process Name	% CPU	CPU Time	Threads	Idle Wake-Ups	Kind	% GPU
mds_stores	120.9	7:43.58	12	0	Apple	0.0
update_dyld_sim_shared_cache	78.3	12.86	1	1	Apple	0.0
mdworker	78.2	4:19.71	3	1	Apple	0.0
mds	71.6	10:45.09	11	8	Apple	0.0
kernel_task	19.1	1:49.39	456	2523	Apple	0.0
WindowServer	9.8	1:02.87	17	65	Apple	16.0
Activity Monitor	6.7	17.25	7	6	Apple	0.0
launchd	5.1	19.88	3	0	Apple	0.0
systemd	2.1	6.65	3	0	Apple	0.0
Font Book	0.9	7.09	3	0	Apple	0.0
Finder	0.4	14.07	3	30	Apple	0.0
appstoreagent	0.4	1.02	5	0	Apple	0.0
bluetoothd	0.3	6.45	5	0	Apple	0.0
com.apple.CoreSimulator.CoreSimulatorService	0.3	0.95	6	16	Apple	0.0
launchservicesd	0.2	1.56	2	0	Apple	0.0
Spotlight	0.1	1.54	6	1	Apple	0.0
trustd	0.1	6.66	2	0	Apple	0.0
AirPlayXPCHelper	0.1	1.24	6	1	Apple	0.0



macOS >

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

Quick-fire questions >

How to tell whether Mojave Safari is vulnerable?

> Open Safari, and open the About Safari command in the Safari menu to show its About window. The build number given after its version should be at least 16611.1.21.161.6. If the last digit is any smaller, then you need to update it using the Software Update pane.

How to disable some of Big Sur's system fonts?

> Use Font Book to control your fonts unless you're already using a replacement font manager. **ctrl**-click one of the named fonts to see if it can be disabled; those installed in the System's font folder can't be, nor can they be removed from that folder, as they're locked on Big Sur's protected System volume.



Accessing a Mac without its password

Q My late mother's iMac, from around 2003, won't start up without her password, which I don't know.

How can I get it going again?

by DEBBIE HOLTH

A Provided that a Mac doesn't have a firmware password set, and has neither a T2 or M1 chip, it's possible to start it up from an external disk, if that disk has a suitable copy of macOS installed. However, the most recent version of Mac OS X that iMac is likely to be able to run is 10.5.8 Leopard, which Apple stopped supporting 10 years ago.

Depending on what you want to do with that Mac, you may need to pay a specialist Mac repair shop to help you solve this. If you want

to recover documents from your mother's Home folder, that would be more difficult, but provided that she didn't use a very secure password it can be done. Although more expensive, you may find that Apple can help, as this is a sadly common situation. You'll need to provide evidence of the Mac's ownership and the endorsement of her executors.

If you don't want to recover any files from that Mac, it's now so old that it has little value or use, and is best sent for recycling. Before doing so, it's worth physically destroying the hard drive inside it, which prevents anyone else accessing her private information. Some Macs can be tricky to gain access to their internals, but once you have, extract the hard drive and smash it with a heavy hammer before adding it to the recycling.

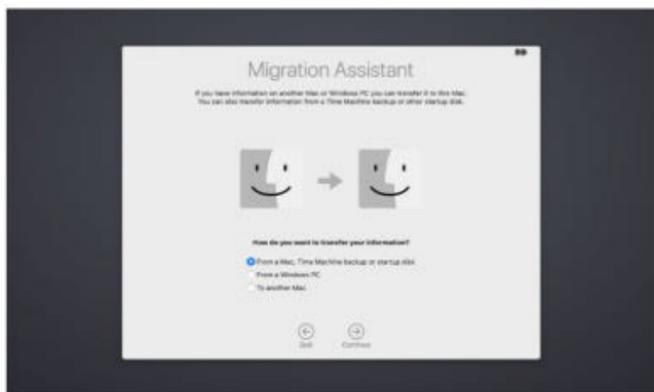


How to migrate from old macOS

Q What's the best way to migrate from my iMac running High Sierra to a new M1 iMac?

by JON SPELLER

A Although Migration Assistant works best and migrates most data when working between two consecutive major versions of macOS, such as Catalina and Big Sur, it can still save time instead of copying



It's often best to update a new Mac first; when complete, use Migration Assistant to copy files from your old Mac.

across apps and files manually. For a new M1 iMac, start it up and create its main user account before attempting migration. Then use Software Update to bring macOS up to date. Once you're happy it's running sweetly, connect the iMacs back to back using the fastest means possible, preferably Thunderbolt. Open Migration Assistant on each Mac, setting the M1 as the destination, and your old iMac as source. If you can't get that to complete, go back and be less ambitious about what to migrate until it's successful. Next copy across anything you couldn't migrate, and keep the two Macs running on the same network until you're happy you've got everything.

If you prefer, you can use an app like Carbon Copy Cloner to make a copy of your old startup disk to an external drive, to connect to your new iMac and use as the source for migration. Finally, archive your old backups and start fresh ones.

How to quicken the last part of App Store updates?

> Once the progress circle reaches about '9:30', downloading the update has already been completed, and it's prepared then installed. The time taken for this is largely dependent on the work required to install the update, and there's nothing you can do to accelerate it. Sometimes it can take half an hour or more.

Why doesn't Spotlight find older Rich Text files?

> A late update to Catalina introduced a bug into the importer file used by Spotlight to index content of all Rich Text files, but not RTFD documents. Any RTF document created or edited from then until the bug was fixed in Big Sur 11.3 will only be indexed if it has been changed since you updated to 11.3. The only way you'll get existing documents properly indexed is to force Spotlight re-indexing on that volume. Open the Spotlight pane. Add the disk to the exclusion list in its Privacy tab, close the pane, and after a couple of minutes open it and remove the volume from that list.

Is Big Sur safe yet?

Q Is it safe yet to upgrade my iMac 2015 from Catalina to Big Sur?

by GEOFF INGRAMS

A Big Sur 11.3 brought many bug fixes, and should prove a good upgrade. As you're using Catalina, your software is already 64-bit and free from reliance on retired QuickTime codecs. Before starting, check all your key apps to ensure they're current, as it's easier to update them before you're running Big Sur.

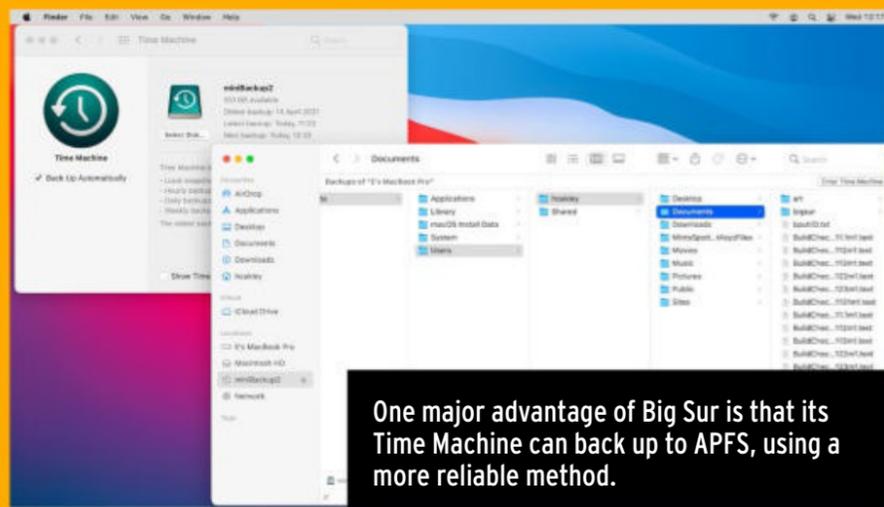
The most difficult decision you'll face is if your Mac is backing up using Time Machine. Big Sur introduces a huge improvement as it can now back up to APFS disks, but doing so requires you to start a new backup series

which won't be compatible with Catalina. If you're forced to retreat to 10.15, those backups will be inaccessible. If you decide to back up to APFS, archive old backups and start with a new disk.

Another area needing attention is any peripheral or software reliant on a kernel extension. Although they can still be installed in Big Sur, older extensions are likely to

be incompatible, and should wherever possible be replaced with new System Extensions, which are less likely to cause problems like kernel panics.

Immediately before upgrading, make one last full backup, check your startup disk is completely healthy, then allow ample time to perform the upgrade and fix any resulting problems.



One major advantage of Big Sur is that its Time Machine can back up to APFS, using a more reliable method.



Apple Watch

The Apple Watch has evolved into a truly essential accessory. Computing doesn't get much more personal than this



Over the last few months, we've rummaged around the more obscure corners of macOS Big Sur, iOS and iPadOS to discover all kinds of tips,

tricks and apps to get even more out of your devices.

This month, we're turning our attention to the Apple Watch.

It's safe to say that when Apple first launched the Apple Watch they weren't

entirely sure what it was for - the answer to a question Apple hadn't quite worked out. But in six generations it's become clear that it's an incredibly powerful health monitor and fitness tracker

and information provider. As the range of watch faces and complications - the little sections that you can use to get information from and launch apps - has increased, so has the Apple Watch's

secrets

Written by Carrie Marshall



usefulness; what was a fun, clever but inessential bit of tech has, for many, become an integral part of our everyday lives.

In this guide, we'll show you how to get your Apple

Watch just-so, from choosing and customising watch faces to the apps that can help you navigate unfamiliar places and find things that matter to you. We'll explore the Watch's fitness features, including

Apple Fitness+, and you'll even discover how your Apple Watch can help in the battle against COVID.

We also reveal why the Apple Watch is the most personal device Apple has

ever made - it's there when you sleep and when you swim, when you work and when you work out, and, if you ever go skydiving, you can wear it then too. Here's how to make the most of it.

Faces and complications

Your Apple Watch has many faces. Here's how to find the right one

Don't forget the App Store! >

> **Need a new app for your Apple Watch?** Pop to the built-in shop and discover what's available.

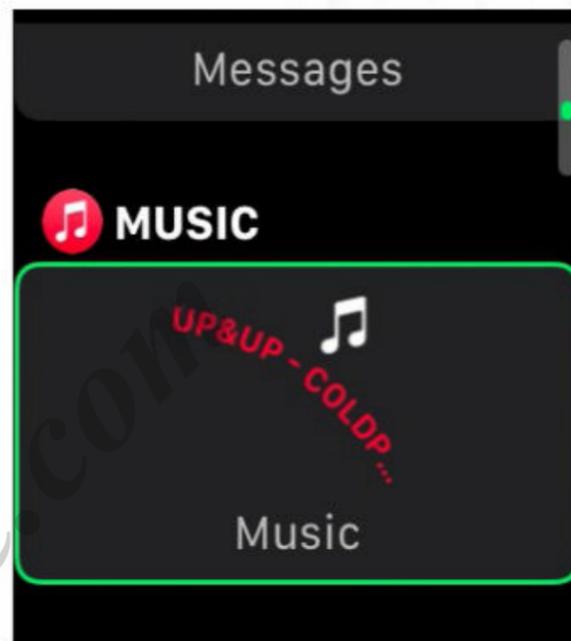
You don't need your iPhone to find new apps for your Apple Watch. Just press the Digital Crown and move the icons until you see the familiar App Store icon. Tap it and you'll see a Search bar and some of Apple's recommendations; tapping on an app enables you to read about it, see screenshots and install it directly onto your watch.



WatchOS 7 has an all-new look and you can do more with it than ever before - but if you're still using the default face or don't use complications, you're missing out on some of its best features.

To change a face, long-press and swipe to move between installed faces; keep swiping right and the big '+' sign enables you to install a new one. You can customise a face by long-pressing and choosing Edit to move into the customisation screens. These vary from face to face but typically you'll have one screen to customise the colour, which you do by turning the Digital Crown, and one for choosing complications, which you use by tapping the one you want to change and using the Digital Crown or swiping to see the options. Some of the more complex faces have another screen for changing their design too. You can move between these customisation screens by swiping left and right.

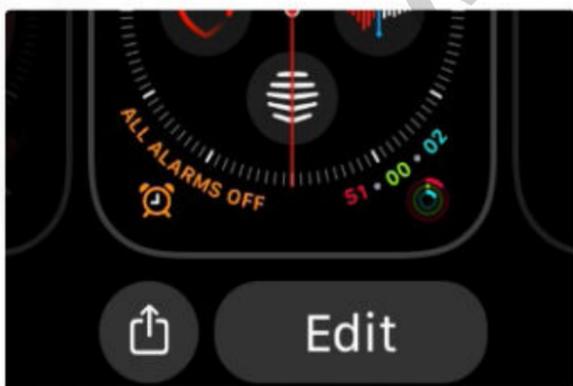
Different faces support different complications. The Infograph one has



You'll find that corner complications can often display more information than central ones.

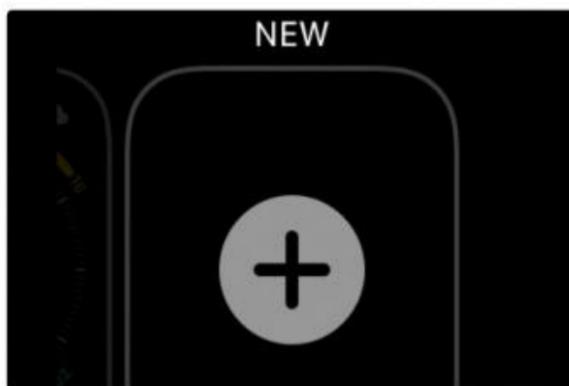
room for four in the middle, four in the corners and one on top; Astronomy has two; and Artist doesn't have any complications at all. You'll also find that there are different versions of different complications depending on where they're going so, for example, complications for corners usually display more information than ones in the centre.

HOW TO Change your face >



1 Enter editing mode

To change, customise or add complications to your Apple Watch face you need to go into Edit mode. Long-press the watch face and you should see this screen here: a picture of the face, a small share icon and a larger Edit button.



2 Swipe right

If you have multiple faces installed, you can swipe left and right to move between them. If you want to choose a new face, keep swiping until you see this big '+' icon. Tapping on it will open up the Apple Watch face gallery.



3 Find your favourite

When you've found a face you like, don't worry if it isn't quite perfect; most faces are very customisable. Here, we're working with the Chronograph face. To customise it, just tap the Edit button underneath the image of your new face.

EXPLAINED... Complication corner >



1 **Infograph main focus**
 > The Infograph face enables you to put four small complications in the centre of your Apple Watch face.



3 **Keeping the centre clear**
 > When using the Chronograph face, there's no room for central complications because of its timers.

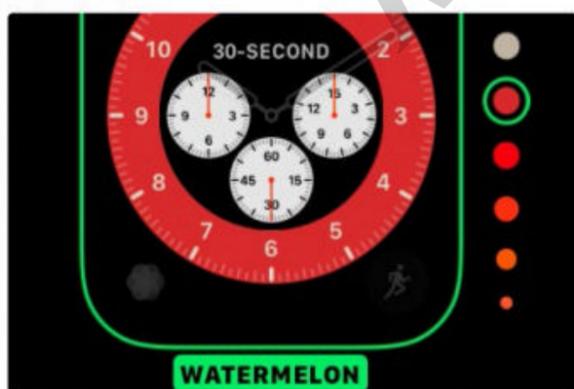


5 **Keeping to the corners**
 > Complications on the Stripe face are in the corners too. This is a different Calendar, showing today's date.

2 **Reminding strip**
 > In addition to complications in the corners, Infograph has room for a Complication strip at the top.

4 **Corner complications**
 > With the complications in the corners, they go clockwise from top right: Music, Weather, Calendar and Activity.

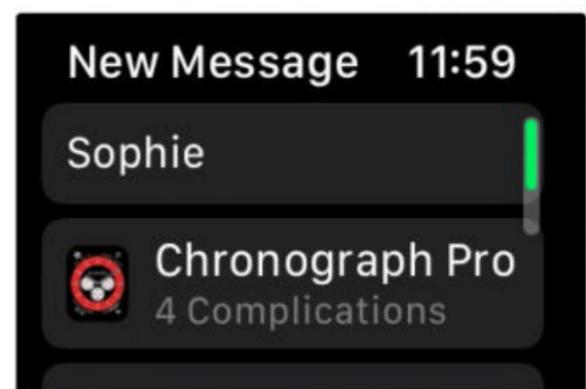
6 **Third-party apps**
 > Many third-party apps have complications too. This one is PCalc Lite, the brilliant calculator app.



4 **Change the colour**
 If the face supports multiple colours - most do - use the Digital Crown to scroll through the options. The watch face will change as you do. Some faces change more dramatically than others, such as changing individual stripes' colours.



5 **Get complicated**
 If your face supports complications, swipe left until you see a screen showing available places. Simply tap on the one you want to add or change and swipe or scroll through the available options. Press the Digital Crown when you're done.



6 **Face your friends**
 To share a face with someone else, long-press it, then tap on the Share icon. You can now send it, its complications and an accompanying message to anyone in your Contacts, and they can do the same to you with their own creations.



If you have an Apple Watch Series 2 or later, you can switch on Water Lock to prevent accidental input while you're in water.

Health and Fitness

The Apple Watch can track a wide range of workouts, lock out water and motivate you

Now wash your hands!

> **Your Apple Watch can help you in a COVID-19 world.** Its handwashing timer (Settings > Handwashing) detects running water and hand movement and then counts down for the recommended 20 seconds; the Series 6's built-in blood oxygen sensor can warn you if your blood isn't saturated enough, a telltale sign of respiratory problems; and the Series 3 onwards can still unlock your Face ID iPhone when you're masked if wrist detection and passcode protection are on.



Helping with the fight against COVID - the handwash timer.

Your Apple Watch doesn't just have a pretty face. From walking to weight training, hiking to high-intensity interval training, swimming to skydiving, your Watch is the perfect companion for every kind of activity. Well, maybe not skydiving.

The Series 6 has a gyroscope, an accelerometer, GPS, altimeter, compass, blood O2 sensor and a heart rate sensor, and they can track all kinds of health information from how vigorously you're exercising to how oxygenated your blood is, how many stairs you've climbed today and how much loud noise you've been exposed to. That makes

it ideal for tracking all kinds of data, which then feeds into the Health and Fitness apps so you can track your progress over time and identify triggers and trends.

While your Apple Watch does all the work, its data gets sent to your iPhone; sleep data and vital signs are sent to the Health app and activity data to it and to the Fitness app.

Your Apple Watch automatically tracks three goals in Activity on your watch and Fitness in your phone; daily calories burned, daily exercise minutes and daily hours spent standing. You can change all three daily goals in Activity by scrolling to the bottom and tapping on Change Goals.

Focus on Fitness+ >

> **Fitness+ displays real time data from your Apple Watch on your iPhone, iPad or Apple TV as you exercise.** And you get on-screen encouragement like video game power-ups when you hit certain milestones.

Fitness+ has been designed for Apple hardware, so on-screen metrics are only displayed if you're using your iPhone, iPad or Apple TV. However you can also AirPlay the current workout video to your smart TV while the

Apple Watch continues to record your activity. To do that, open the video in your iPhone or iPad, tap the AirPlay icon at the bottom right of the screen and choose your destination. The video should then shift to your connected TV.

Your Apple Watch is at the centre of Fitness+, which combines fitness tracking, online video and Apple Music.



From Wind Down to Wake Up >

> **Your Apple Watch can help you get a better night's sleep, and help you to wake up in the morning.**

The Watch's sleep app enables you to set sleep goals, arrange audible or vibrating alarms and turn on sleep mode at specific times, and it tracks your sleep activity too. You can

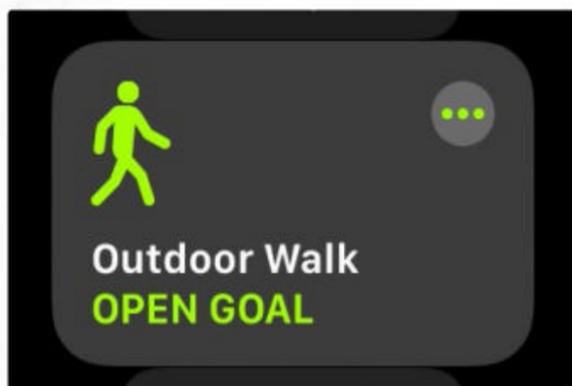
create multiple schedules so the weekday alarms don't go off at the weekend, and you can also set Bedtime to have a wind down time where it simplifies your Watch display and goes into Do Not Disturb before you go to bed every night. Of course, if you're wearing

The Sleep app enables you to create different sleep and alarm schedules for different days.

your Apple Watch you're not charging it. We actually pop our Watch on its charger when we get up; by the time we've showered and breakfasted it's fully charged for the day and night ahead.

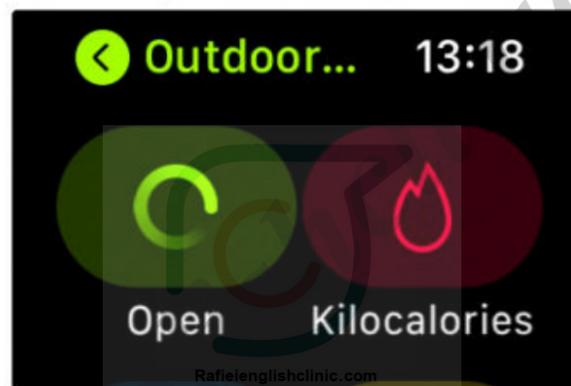


HOW TO Master your Fitness goals >



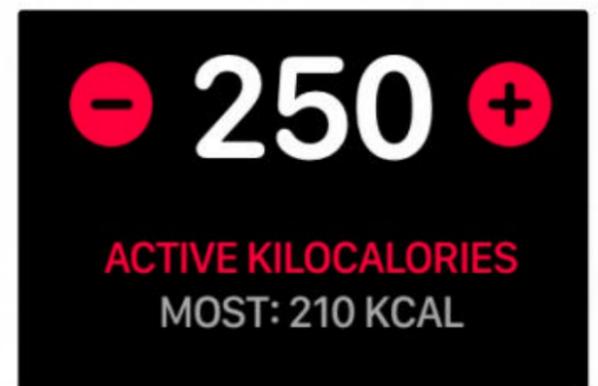
1 Open the Workout app

You can change your overall fitness goals in the Fitness app on your phone, but you can create goals on the go with the Workout app on your Apple Watch. Scroll until you see the kind of workout you're doing: a walk, a dance, a swim...



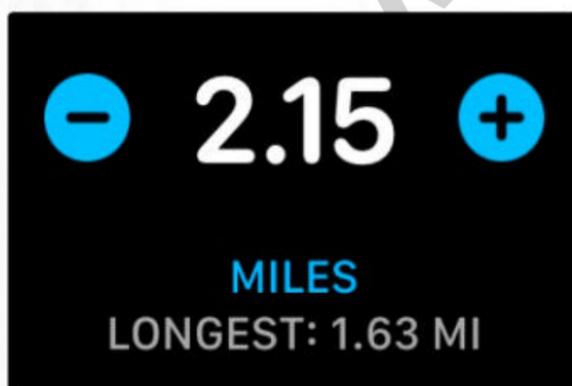
2 Choose your metric

Tap on the '...' icon at the right of the workout type and you should see the goals menu. An open goal doesn't have any targets, but you can specify a target number of calories, a target distance or a target time. Or all three.



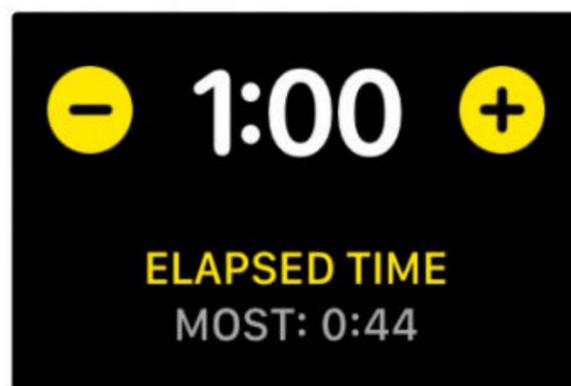
3 Count the calories

We've tapped on the Kilocalories icon. You can adjust the calorie target upwards or downwards by tapping on the '+' and '-' signs or using the Digital Crown. The app also shows you your personal best for this kind of workout.



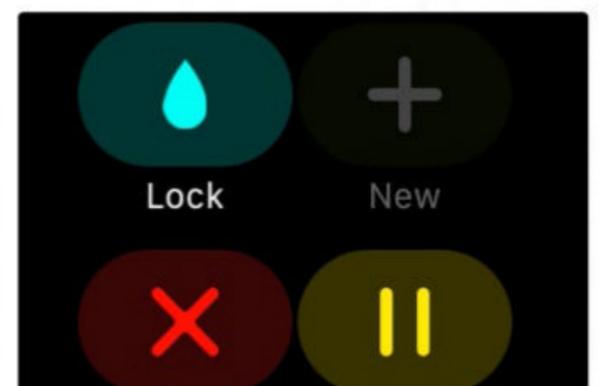
4 Set the distance

Changing your distance goal works in exactly the same way, but this time you're adjusting the distance in miles rather than the calorie target. We like the way the different targets are colour-coded so it's clear what you're adjusting.



5 Set your timer

The time target works like the calories and distance targets - tap the icons or use the Digital Crown to make the target time increase or decrease. Once you've set it, just tap Start and your watch will start recording your workout.



6 Pause, stop or swim

You can pause your workout at any time; swipe right and tap on the pause button, remembering to take it off pause again when your break is over. You can also end your workout, or activate the Water Lock feature if going swimming.

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Maps, Translations and more

Going somewhere? Your Apple Watch can get you there

Change your timezone

> Whether you're going from one side of the world to the other or just nipping across a border, your Apple Watch can show you the time for two different places.

Choose the GMT face, press (but don't long-press) the centre and you can now use the Digital Crown to tell your watch which second time zone you'd like it to display. When you return to the GMT face, it'll show the current time zone's time in the inner, 12-hour dial and the other time zone in the outer, 24-hour dial.

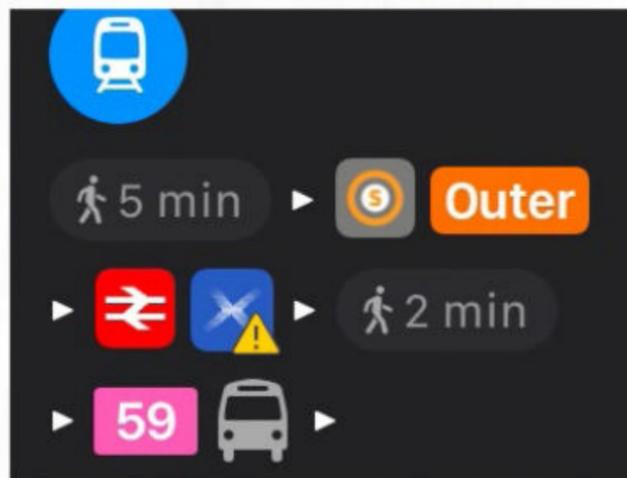


The GMT face can show two different time zones at once.

Your Apple Watch is your perfect travel companion whether you're globe-trotting or nipping out to the shops. Its Maps app

is a brilliant navigation aid with dedicated options for drivers, pedestrians, public transport users and cyclists, and it can help you find places such as restaurants, shops, car parks and cash machines. We particularly like the eyes-free navigation where your watch taps you on the wrist as you walk or drive to alert you of an upcoming turn or lane change. And if you have the GPS+Cellular model, you don't even need your phone.

That's not all it can do when you travel. Siri can help you find the right phrase in other languages (and there are many great Apple Watch translator apps too, such as



Public transport information is built into the Maps app on your Apple Watch, enabling you to plan even very complicated multi-stage routes.

iTranslate); you can use the Calculator app to calculate the tip when you're paying in a café or restaurant; you can use free apps such as Elk to carry out currency conversions, and there are tons of to-do apps that you can use to make sure you pack everything you need. If you're flying with big-name airlines such as British Airways or Lufthansa you can also get up-to-the-minute details of gate times, arrivals and flight status. And when you arrive you can use the Uber app to get you from the airport or get Maps to show you where the trains or subway rides are.

The Lufthansa app also enables you to have your boarding pass on your watch. Lots of airlines did the same when the Watch first shipped, but many of them seem to have lost interest since - which is a shame, because it's really handy. It's possible that the move to COVID vaccination passports may rekindle their interest: the International Air Transport Association has announced an iPhone app, but it's unclear whether it'll have an Apple Watch component.

Be in charge

One lesson we've learnt the hard way: always make sure you've got your Apple Watch charger when you're travelling any distance. Maps and other location-based apps can be quite demanding on your Watch's battery and you don't want to run out of power when you're far from home.

Sprechen sie Siri? >

> **The late, great, Apple-obsessed writer Douglas Adams imagined a translation tool called the Babel Fish, a fish that you stuck in your ear to understand any language.** Your Apple Watch is similar, and you don't need to stick it anywhere. Just say to Siri, "how do I say (thing you want to say) in (chosen language)?" and Siri will show you and also say the word or phrase aloud.

Siri's translation features are best for quick queries. If you want real-time translation, use Apple's Translate app on your iPhone. This enables you to type or talk, automatically translating into your chosen language. If you're speaking it will read the results aloud, and if you put it into Conversation Mode it'll listen to two speakers and play a translation of what each person has just said.

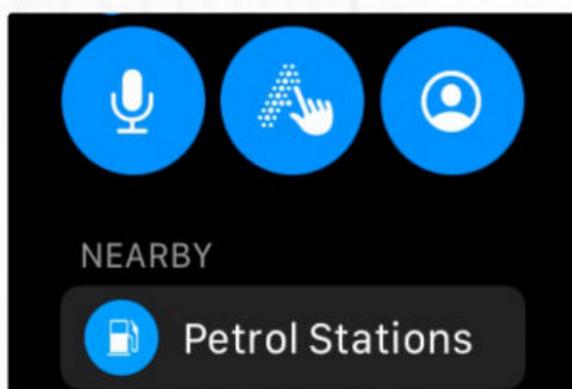
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Want to know how to say something in a particular language? Just ask Siri.

HOW TO Getting from A to B is as easy as A, B, C >



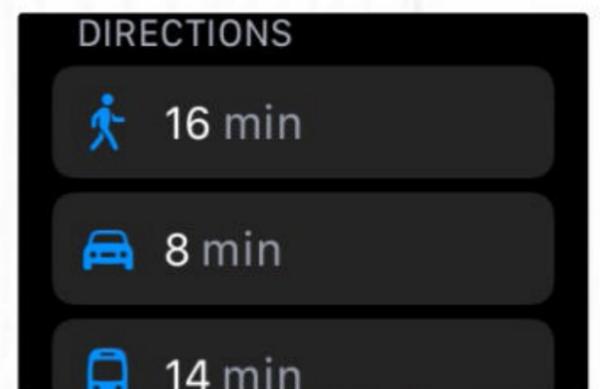
1 Open the app

You can use third-party mapping apps such as Google Maps but we'll stick to the Apple option. To open Maps, press the Digital Crown, then tap on the Maps icon. You'll see a Home Screen with favourites and a Search icon. Tap the search icon.



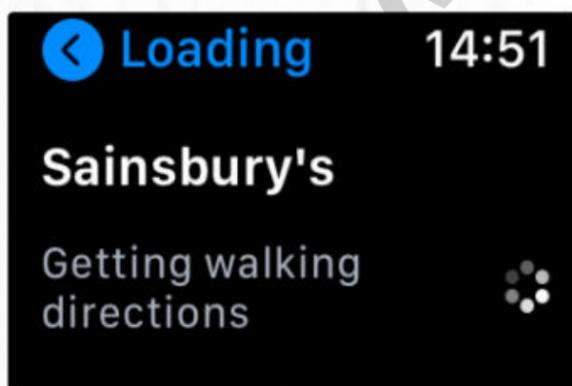
2 State your destination

There are multiple options here. You can say or scribble an address, pick a contact or use the Nearby feature to find useful places nearby. We're going to use that feature to find a supermarket that isn't too far away.



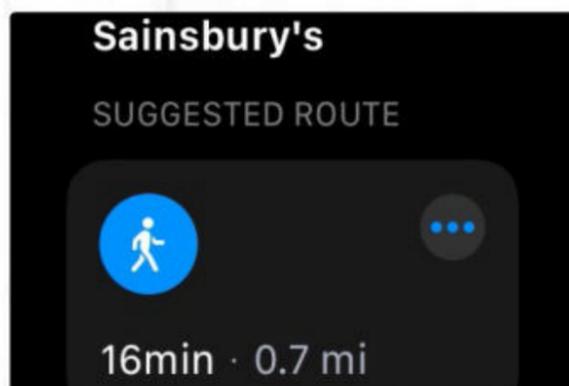
3 Choose your transport

Maps can give you four kinds of directions: walking, driving, public transport and, in some cities, cycling. Cycling can take account of things such as steep steps, so it can be useful for wheelchair users too.



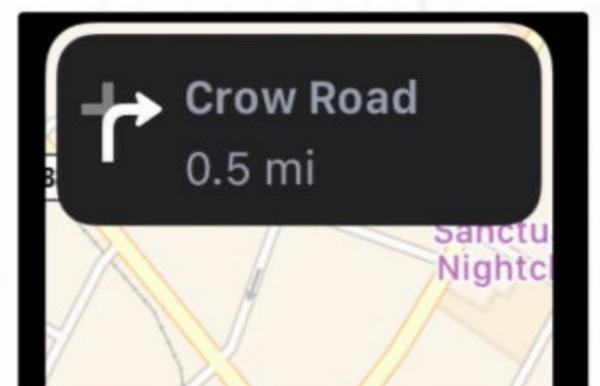
4 Get directions

Each type of transport displays an estimated travel time, based on current traffic conditions and public transport timetables. Tap the option you want to use and your Apple Watch will calculate your route, which takes a few moments.



5 Choose your route

Sometimes there are multiple routes to the same place, in which case the Maps app will let you choose the one you prefer. Here, though, there's only one sensible route to the supermarket so Maps isn't providing other options.



6 Hit the road, Mac

Tap the route to start; your Watch will display directions and destinations. You don't need to look at the screen while you walk, cycle or drive; your Apple Watch will tap your wrist in advance whenever you need to change direction.



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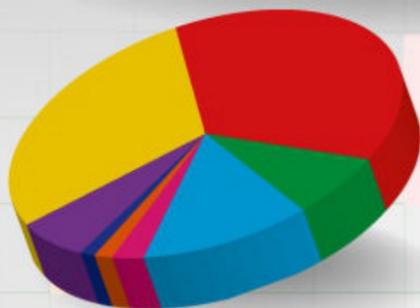
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How to create spreadsheets in Numbers

Numbers is a versatile and capable tool for creating budgets, lists, invoices and more

WRITTEN BY **KENNY HEMPHILL**

When it comes to spreadsheets and data-crunching applications, the Mac is still relatively poorly served.

If you don't want to use Microsoft's behemoth Excel (an application that began life on the Mac a full two years before the first Windows version), and would rather avoid web-browser based tools like Google Sheets, then

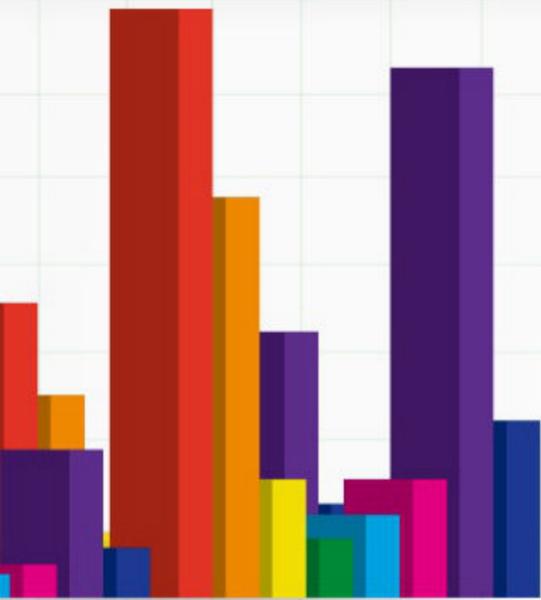
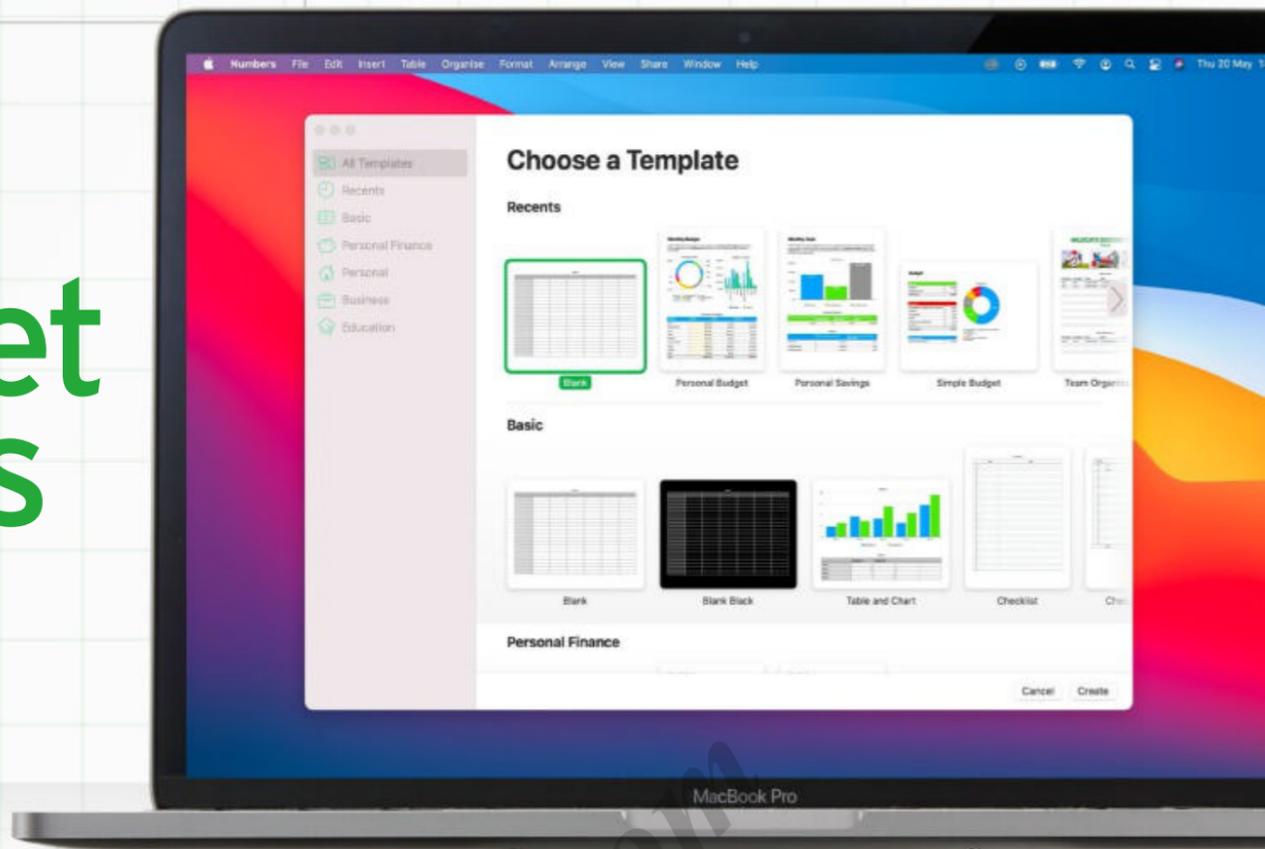
Numbers is by far the best option. Thankfully, Numbers is very good indeed when it comes to tasks like personal budgets, planners, invoicing and pretty much anything that doesn't involve macros code or the kind of enterprise-level automation at which Excel, well, excels.

Numbers' great strength is in its ease of use and its templates. While basic, the templates are an excellent

jumping off point for creating your own spreadsheets, customising them and, in the process, learning how Numbers works. Many of its conventions are identical to those in Pages, including the way you import objects such as images and style text. We'll show you how to get started with a personal budget template, then get into more detail on data, formulas, and charts. 

Create a spreadsheet in Numbers

Numbers templates make it easy to get started creating your own spreadsheets



In this tutorial, we'll show you how to use one of Numbers' standard templates to make your own personal budget.

The template has two tabs: Budget and Transactions. The Transactions tab houses all the details of money spent during the period covered by the budget. These are allocated into categories. In the Budget tab, a table uses functions and formulas to add up the values of all the transactions in a given category and put them in a cell in the Actual column. For example, the Actual column in the

Entertainment row looks for all the cells in the Transactions table where the category matches 'Entertainment' and sums the value of the transactions.

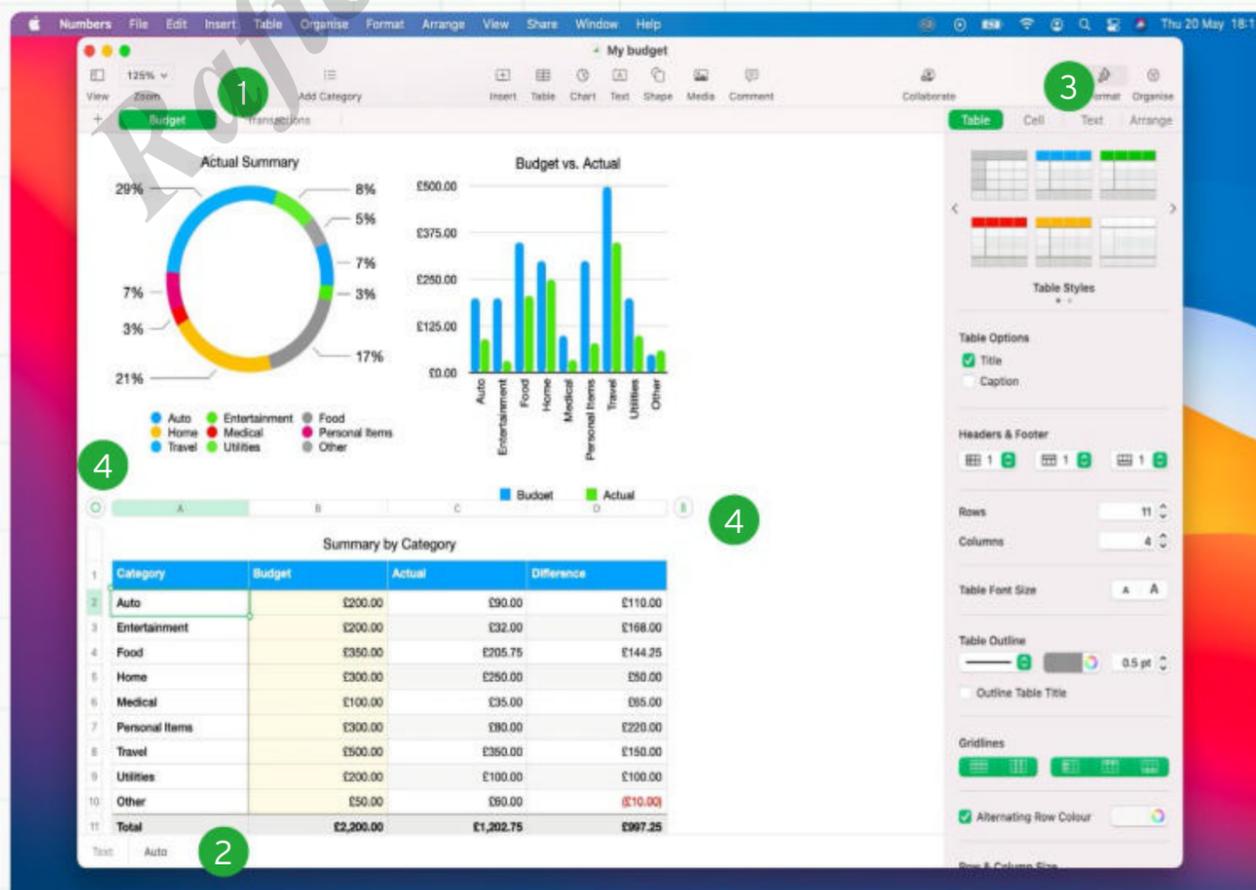
The Budget column in the table in the Budget tab contains manually entered values. These are then compared with the Actual spend to calculate the Difference.

A doughnut chart is created from the Actual column, showing how total spend is split across categories. And a bar chart displays the differences between budget amounts and actual spend for each category.

EXPLAINED... Numbers' interface >

1 Multi tabs > Numbers spreadsheets can have multiple tabs. Their names are displayed at the top of the sheet.

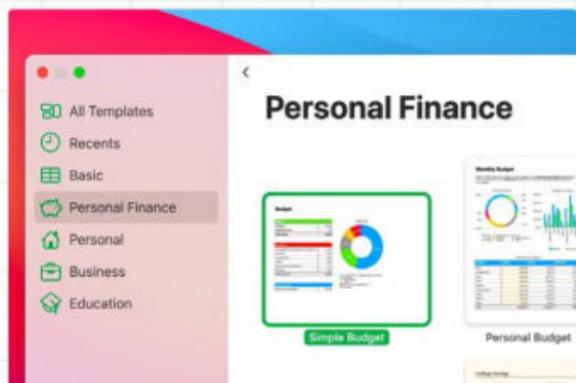
2 Formula bar > The formula bar at the bottom of the sheet displays the formula or value for the selected cell.



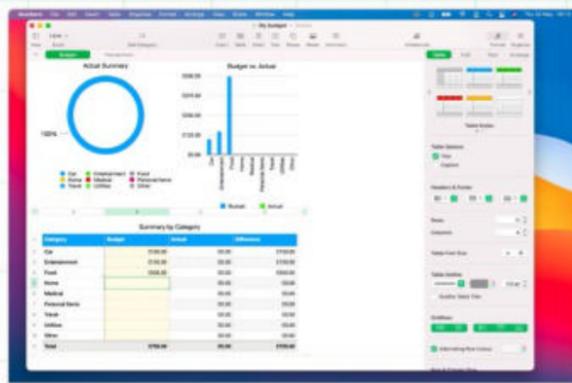
3 Format > The Format sidebar in Numbers is very similar to the one in Pages, but with tabs for formatting tables and cells.

4 Table options > Reposition tables by dragging the circle (left); add rows or columns by clicking '||' (right).

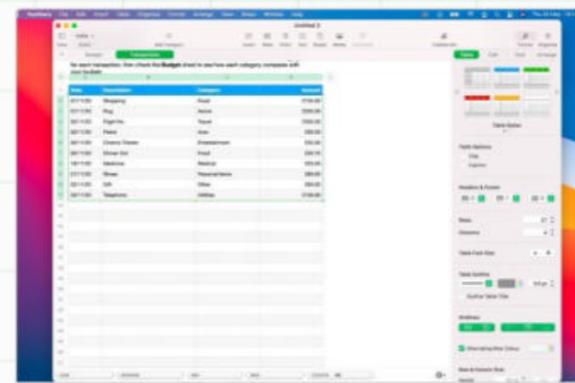
HOW TO Build your own personal budget spreadsheet >



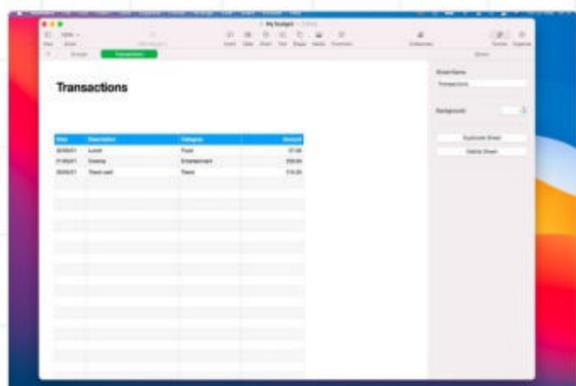
1 Choose a template
Launch Numbers. Choose New Document to display the Template Chooser. Use the categories on the left to navigate the templates, then click on one and press Create. We've chosen Personal Budget in the Personal Finance Section.



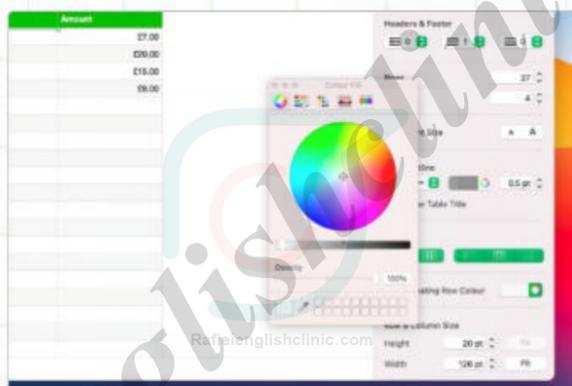
2 Add your budget figures
You'll notice that the Personal Budget template has two tabs, Budget and Transactions. We'll start by adding data to the Budget column in the Budget tab. For each category, type in the max figure you want to spend every month.



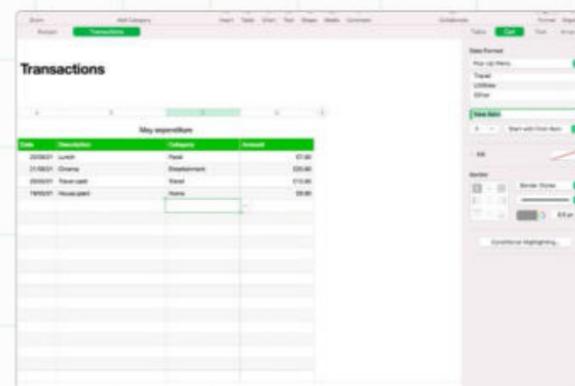
3 Delete template entries
Now we've set the budget, click on the Transactions tab. Select all the cells in the table by clicking and dragging over all the cells in the table and press \leftarrow . We'll use this table to log transactions as they are made.



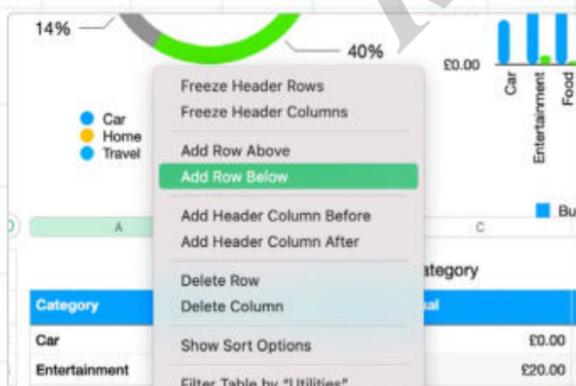
4 Add transactions
Type details into the Date, Description, and Amount columns for each transaction. In the Categories column, click on the arrow that appears when you click on a cell and choose a category from the list.



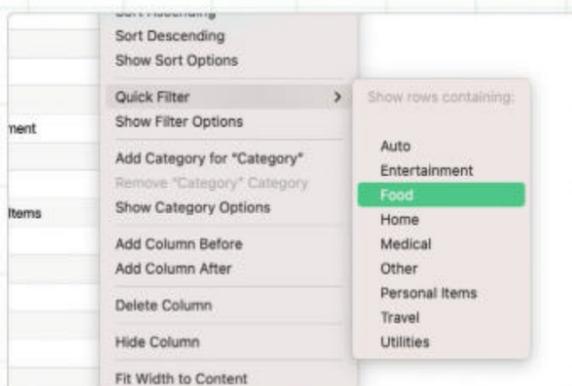
5 Customise table style
You can change the way the budget table looks. Click anywhere the table, then choose Format in the toolbar. Select the Table tab. Choose from one of the pre-existing styles or use the options beneath to create a custom style.



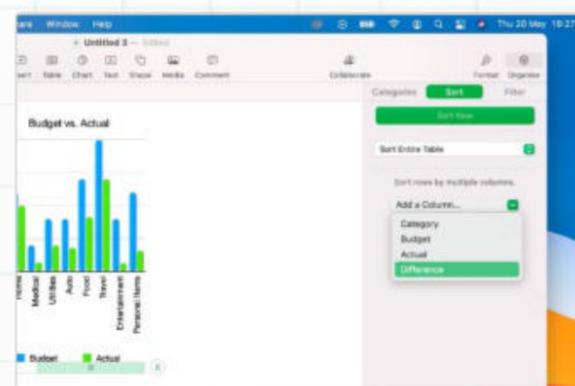
6 Create a new category
In the Transactions tab, click in an empty cell the Categories column. Choose Format > Cell. Under the list of items in the menu, press '+'. Type in the name of the category, then drag it into its alphabetical place in the list.



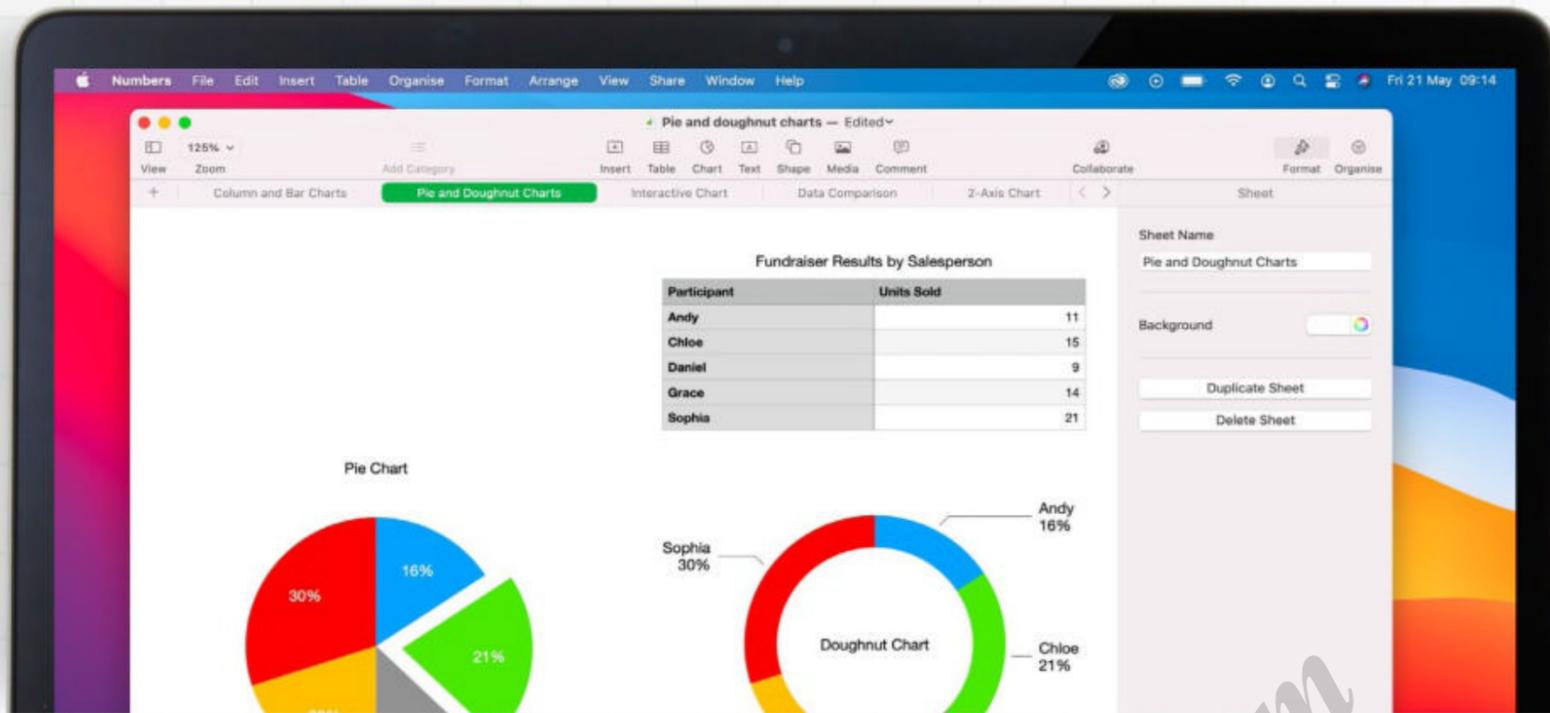
7 Add the new category
Click on the Budget tab. In the table, ctrl -click on the row above where the new category will go and choose Add Row Below. Type the name of the category into the Description column. Type an amount into the Budget column.



8 Filter transactions
To see how much you've spent on Food, go to the Transactions tab, click the header of column C and click the arrow. Choose Quick Filter, then Food. Other categories will be hidden and you will only see those for Food.



9 Sort transactions
To list items according to how they've performed against budget, click in the table, then press Organise, and Sort Choose Sort Entire Table. Click Add a Column and choose Difference. Choose Ascending or Descending for the order.



Table, charts and functions

Tables and charts are the heart of any spreadsheet. Here's how they work

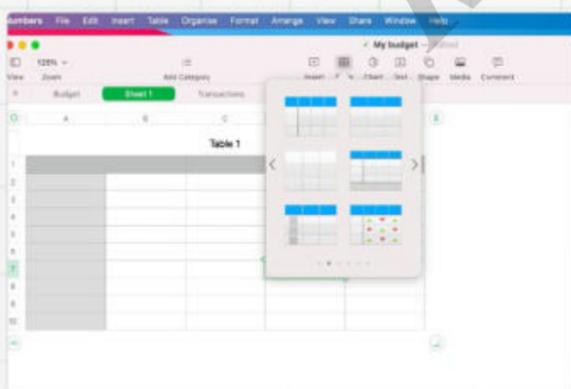
Using templates is a great way to get to grips with Numbers, but very soon you'll find yourself wanting to hack them to work with your own data sets, or to create spreadsheets yourself from scratch.

To do that, you'll need to create your own formulas using the functions Numbers understands. There are hundreds of these and they range from the very basic, such as adding up a column of numbers or calculating an average, to complex statements with

conditions and boolean operators. Thankfully, Numbers provides detailed descriptions and examples of how each function works so you know which ones to opt for.

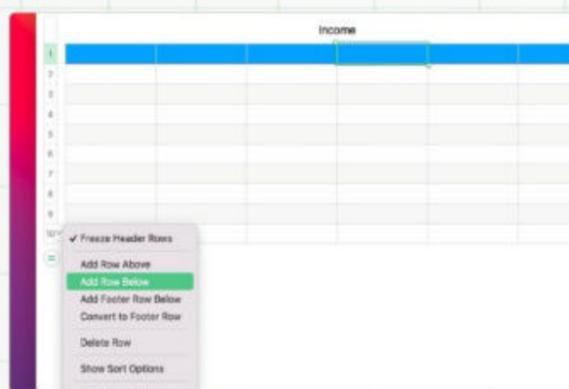
To see them, click in an empty cell in a table, press the Insert button in the toolbar and choose New Formula. You will see the Functions browser appear on the right of the screen with a library of functions, descriptions and examples. Use the categories on the left to find the function you want to know more about or use, or search for it.

HOW TO Add a table >



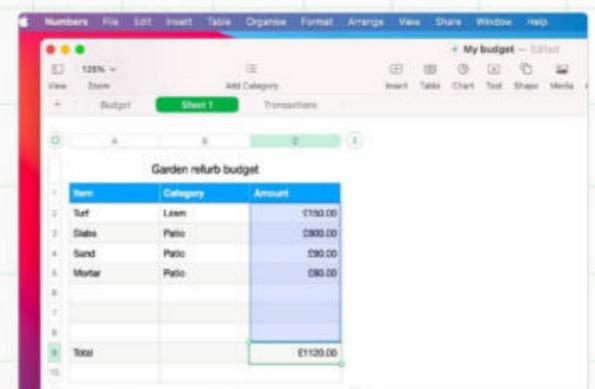
1 Add a table

When you open a new blank document in Numbers, it has one table in it. To add another one, click the Table icon in the toolbar. Use the arrows to scroll through the style options then click on one to choose it.



2 Add rows and columns

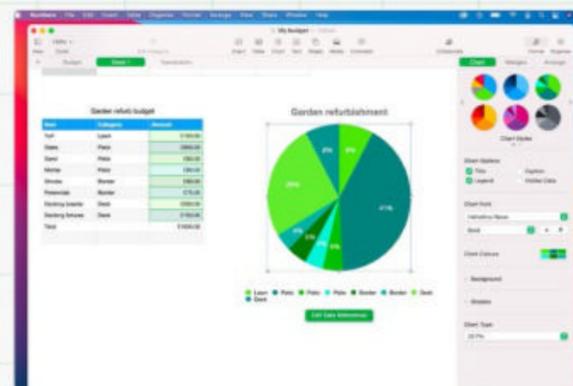
To add more columns, click on the '||' icon to the right of the header row and drag it right. To add more rows, click on the arrow next to the number of the bottom row and choose Add Row Above or Add Row Below.



3 Fill out the table

Use the Table tab in the Format sidebar to style the table and double-click over the default title to type your own. You can now start typing data or formulas into cells on the table, or paste data from another spreadsheet.

HOW TO Create a chart >



1 Add a chart

Identify the data you want to chart and decide what type of chart it suits. Click on the chart button on the toolbar and choose a chart type. Press Add Chart data to define the cells you want to use to populate the chart.

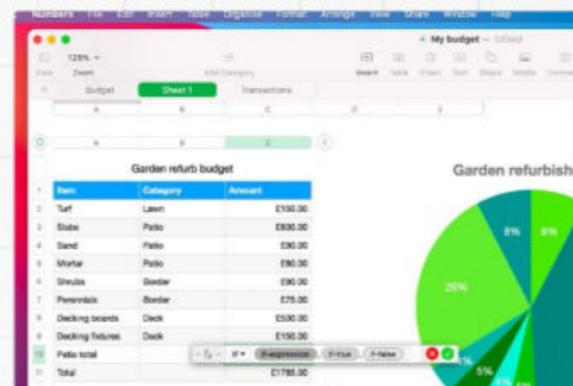
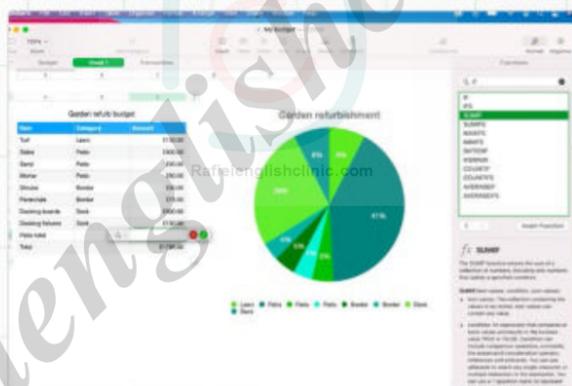
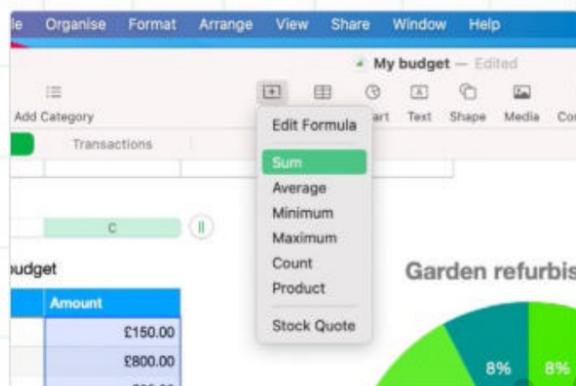
2 Add data to the chart

Click the bottom left of the sheet and choose Plot Columns as Series or Plot Rows as Series. Click in the first cell whose contents you want to plot, then the next, and so on. You can add data from multiple tables. Click Done.

3 Style the chart

Use the Format sidebar to style the chart by selecting a preset, or manually making adjustments. You can drag the chart and key anywhere on the sheet. To add or delete data, select the chart and choose Edit Data References.

HOW TO Use functions >



1 Add a simple function

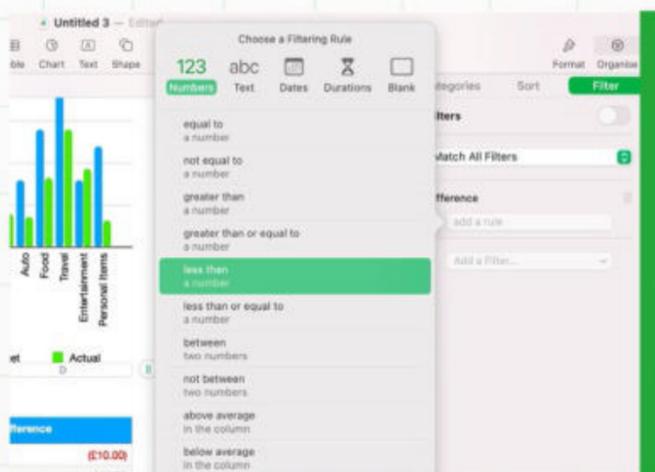
To add a simple function, such as Sum or Average, click and drag over the cells you want the formula to act on. Choose Insert in the toolbar. Select the particular function you want. It will then be added to the first empty cell.

2 Add a complex formula

Click in the cell where you want to add the formula. Click Insert and choose New Formula. You'll see a list of formula in the Functions browser; browse or search the list and choose the one you need. Click Insert Function.

3 Complete the formula

When the formula appears, click on the first cell you want it to act on and drag over the rest of the cells. If necessary, click on the second parameter in the formula and give it a value. When done, click the green tick.



Filter table entries

Hide data you don't need so you can focus >

Filters let you analyse your data by displaying only those data that meet criteria you specify. In our budget spreadsheet, we can filter out table entries where we were under budget so we can focus on those where we overspent.

To do this, select the table, choose Organise > Filter. Click Add a Filter. Choose Difference. With Numbers selected as the rule, choose 'is less than' and type '0'.

The table and charts in the spreadsheet will now ignore all the entries where you were under budget and display the rest.

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> **FEATURES** Apple M1 chip (8-core CPU, 8-core GPU), 512GB storage, 8GB of unified memory, 24-inch 4.5K Retina display (4480x2520 pixels), 2x Thunderbolt/USB 4 ports, 2x USB 3 ports, 1x Gigabit Ethernet port, Magic Keyboard with Touch ID



The 24-inch iMac is wafer thin, but that has resulted in even fewer ports at the back.

This is the Mac we've been waiting for. Measuring just 11.5mm thin and available in a choice of up to seven different colours, the 24-inch iMac feels instantly familiar and all-new at the same time. It clearly shares a familial familiarity with what's gone before – an all-in-one computer with a gorgeous (now 4.5K) Retina display, perched on top of an aluminium stand with a tell-tale iMac chin.

The changes though are massive – gone is the slightly bulbous shape of old in favour of an 11.5mm thin body with squared-off edges, making the iMac look more like a big iPad on stilts than a computer. The front of the machine is now entirely glass – something that's not all that clear from Apple's photos – and then there are the two-tone colours, which are stronger and more vibrant on the backs and sides of the iMac than on the front, which is more of a pastel shade. The Magic Mouse, Magic Keyboard and iMac stand all come in the paler colour too – although they seem to be a slightly different shade than the glassy chin. Although that's more of a trick of the light than anything.

While the 54.7cm width of the 24-inch iMac is more or less the same as the previous generation 21.5-inch iMac (which measured 52.8cm), its screen is now bigger, thanks to the display's narrower bezels. The 4480x2520 pixel display looks stunning, thanks to that 4.5K resolution and 500cd/m2 brightness, which beats many standalone displays that have lower specs for both. More controversial is the use of white rather than black bezels – while in our white-walled office it makes the screen edges seemingly disappear, it's also divided opinion among some Mac users who would have at least liked to have a black bezel option. Also controversially, the iMac retains its tilting stand – if you want to adjust the height of the display, you'll either have to stick the iMac on a pile of books, invest in a third-party stand or opt for a VESA mount – iMacs without the aluminium stand are also available to buy for this purpose.

Ports and specs

The controversies continue elsewhere – that super-thin body now means you get even less port choices than before – there are no longer any USB-A ports or even an SD card slot on the back, while the headphone jack has been moved to the left-hand side of the iMac, which at least makes it somewhat easier to reach. Apple has also removed the built-in power supply and Gigabit Ethernet port, with the former now coming in an offboard white 143W power brick, where you'll also find the Ethernet port on the mid-range and top-spec models; on the entry-level iMac, it's available as a £30 option.

Talking of models, the 24-inch iMac is available in three flavours, all equipped with Apple's M1 chip. The £1,249 entry-level iMac comes with an 8-core CPU (comprising four high-performance cores and four efficiency



The mid and top models come with two Thunderbolt/USB 4 and two USB 3 ports, all of which use USB-C connectors.



Jo says...

> I really love the look of the new iMac, but the best thing about it is just how quick and easy it is to use. And that 4.5K Retina display is great for watching movies on.



The iMac is available in up to seven different colours with matching accessories. Only the mid-range and top-end models get Magic Keyboards with Touch ID as standard.



cores), a 7-core GPU, 8GB of unified memory and 256GB of solid-state storage. This iMac also gets just two Thunderbolt/USB 4 ports, plus a colour-matched Magic Keyboard and Magic Mouse. Or you can opt for a Magic Trackpad for £50 more.

The £1,449 mid-range and £1,649 top-spec models are more fully featured, with each boasting an 8-core CPU/8-core GPU M1 chip and 8GB of unified memory, plus two Thunderbolt/USB 4 and two USB 3 ports (all USB-C), Gigabit Ethernet and a Magic Keyboard with Touch ID. The mid-range model gives you 256GB of solid-state storage, while the top-end model has 512GB.

Further upgrade options are available from the build-to-order list – with up to 16GB of unified memory available across the range, and 2TB of SSD storage on the mid-range and top-end models. The entry level can be maxed

out with 1TB of storage. All three 24-inch iMac models come with Wi-Fi 6 (aka 802.11ax Wi-Fi) and Bluetooth 5.0.

You also get more choice when it comes to the colour of your iMac in the mid-range and high-end configurations. While the entry-level is available in Blue, Green, Pink and Silver, the more expensive machines add Yellow, Orange and Purple. A fully-specced 24in iMac with all the trimmings will cost you a cool £2,449. Again a Magic Trackpad is an extra £50, but we think it's worth it. The Magic Mouse remains a source of bemusement, despite the new colour scheme.

M1 magic

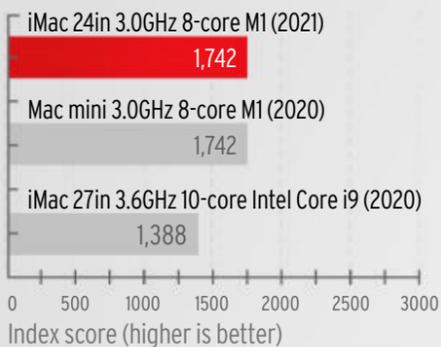
What else is new? Going hand in hand with these colour configurations is a new colour-coded and braided power cable which attaches to the back of the iMac using magnets, plus there's a matching USB-C to Lightning cable in the box (for charging the Magic Keyboard and/or Magic Mouse too). We love the fact that you can now log into the iMac using Touch ID – a feature that's finally

The 24in iMac is available in three flavours, all equipped with Apple's M1 chip



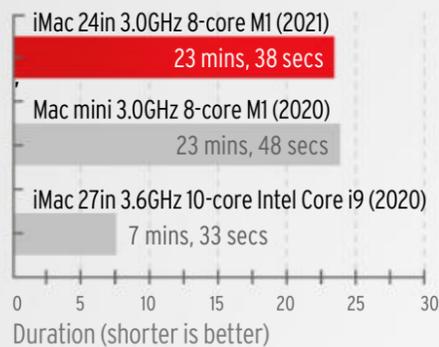
It might come in pretty colours, but the Magic Mouse retains its old design, which includes having a Lightning charging port on its bottom.

BENCHMARKS Our analysis explained >



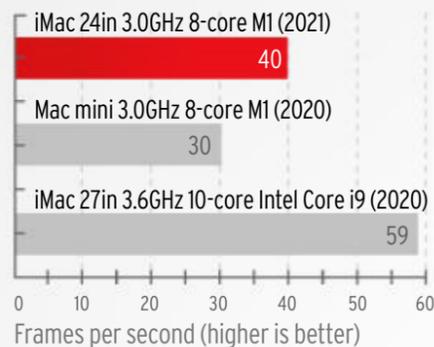
GEARBENCH 5 SINGLE-CORE TEST

> 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 Big Sur.



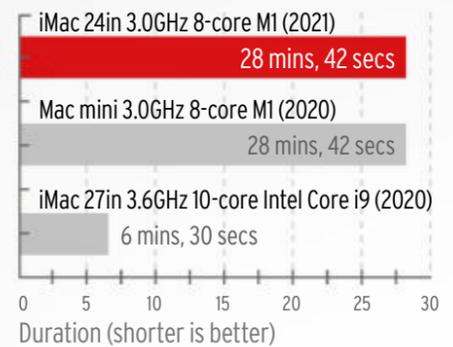
HANDBRAKE VIDEO ENCODING

> We transcode a Blu-ray-quality video file into H.264 format using HandBrake to test the multicore processor performance. Handbrake hasn't yet been optimised for 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 latest version of the app (Version 17.1) now runs natively on M1 Macs.



The iMac eschews a built-in power supply in favour of an off-board brick with added Gigabit Ethernet port (a £30 option on the entry-level).

been carried over from Apple's MacBooks, although again entry-level users miss out - unless they pay an extra £50 for a keyboard with that feature.

While the all-new design and colour choices (with echoes of the original multi-coloured iMacs of yesteryear) are very welcome, the real star of the show is Apple's M1 chip, which replaces the Intel Core i5 found in the old 21.5-inch model (one variant of which is still available at £1,099). The difference between the two is certainly light and day - while the old 21.5-inch could be a bit wheezy, even with an SSD inside rather than a hard disk or Fusion Drive), the new 24-inch iMac starts up almost instantly - and everything feels really fast: the Finder is fast

and fluid; apps open in a snap (especially if they're optimised for the M1 as many now are), and getting any work done from working on spreadsheets in Numbers to making music in GarageBand or photo editing in Photos, Pixelmator Pro or Affinity Photo feels ridiculously quick and satisfying. You'll quickly fall in love with your Mac all over again. Intel slowdowns be gone!

Performance scores

However, as with the M1-powered Mac mini, MacBook Air and 13-inch MacBook Pro, there are caveats - while the iMac is quick and efficient with most everyday computing tasks, there will be times when you crave more than 8GB or 16GB of unified memory and more graphics cores than are provided by the 7-core or 8-core GPU.

As you'll see from our benchmarks, the M1 iMac achieved a single-core score of 1,742 in Geekbench 5 (compared to 1,100 for a 16-inch MacBook equipped with an 8-core Intel Core i9); it was less clear cut in our multi-core test where the M1 achieved 7,665 score and the same Intel Core i9 scored 6,990. Geekbench's 5 Compute Benchmark, which tests graphics performance, also reveals a clear difference between the 8-core GPU of the M1 iMac (19,349) and the discrete graphics of the AMD Radeon Pro 5700XT (58,507) available in its 27-inch Intel



The front of the iMac sports white bezels, the familiar chin and a paler colour compared to the back and sides.

M1 is just the beginning >

So far the 24-inch Mac, Mac mini, MacBook Air, 13-inch MacBook Pro and iPad Pro have all been given the M1 treatment, but the really exciting stuff is still to come. Anyone wanting more power for work or play might want to wait for the rumoured 30-inch iMac that's due later this year or early next, along with replacements for the existing MacBook Pros. What's certain is these new machines will be driven by more powerful Apple silicon

that will finally enable Cupertino to show Intel the door. Rumour has it that work is already underway on a 10-core M2, which will make its way into redesigned MacBook Pros plus a higher-spec Mac mini. The M2 will have more high-performance cores (eight compared to the M1's four) and vastly improved graphics power, with 16-core and 32-core GPUs mooted. The M2 is also expected to support up to 64GB of memory, compared to the M1 maximum of 16GB.



Apps open in a snap, and getting any work done feels quick and satisfying

brother. That's borne out in our 30-minute Handbrake test where the M1 iMac took 23 minutes, 38 seconds to transcode a Blu-ray quality video; the 27-inch iMac achieved the same result in just 7 minutes, 33 seconds.

As you'd expect, the M1 iMac's performance in our DaVinci Resolve test, where we render an effects-laden video, is on a par with other M1 Macs such as the Mac mini and 13-inch MacBook Pro, finishing the job in a shade under 29 minutes. However, the iMac did perform better in our Rise of the Tomb Raider benchmark, which runs through a 1980x1080 demo with graphics set to High, achieving a score of 40 frames per



The colour-matched braided cable attaches magnetically, meaning it needs a little less force than before.

second (fps), whereas the other M1's hit 30fps. The discrepancy here could be thanks to better cooling in the M1 iMac – we certainly heard the fans kick in although they were whisper quiet rather than roaringly loud.

Movies and calls

Finally, we can't look at the M1 iMac without mentioning its movie playback prowess. Watch a 4K HDR movie on that Retina display and the result is gorgeous and rewarding with smooth motion, beautiful, realistic colours and suitably meaty sound effects (thanks to an improved six-driver speaker array, which sits behind the glass chin alongside the logic board and other components).

FaceTime calls are improved too, thanks – finally – to the inclusion of a 1080p HD camera, while voice and video calls should sound clearer thanks to what Apple calls a 'studio-quality' three-mic array.

So, what do we make of the M1 iMac? Like the Mac mini, MacBook Air and 13-inch MacBook Pro, Apple has given its most affordable and most consumer-friendly machines a huge Apple-silicon shaped shot in the arm. The machines are quick to start, quick to use (for the most part) and deliver quality computing in spades. But the iMac is especially worthy of praise – it looks great, it works like a dream and addresses almost all of the shortcomings of its 21.5-inch predecessor. It's not without caveats, sure, but for right here, right now the 24-inch iMac is practically perfect. We can't wait to see what Apple does next. **Rob Mead-Green**



The squared-off edges and 11.5mm depth make the iMac almost iPad like. And that's no bad thing.

Mac FORMAT VERDICT

> Beautiful to look at and a dream to use, this is the iMac many of us hoped for. Go buy one.



- ⊕ Plenty of power for the money
- ⊕ Gorgeous 4.5K display
- ⊕ Touch ID – at last!
- ⊖ Limited port choice

12.9-inch iPad Pro (2021)

Apple's largest tablet is better than ever – if you can afford it

> From **£999** (£1,149 model tested) > **FROM** Apple, apple.com/uk

> **FEATURES** 12.9-inch Liquid Retina XDR display (2732x2048 pixels), Apple M1 chip (8-core CPU, 8-core GPU), 8GB of memory (128GB, 256GB and 512GB)/16GB of memory (1TB and 2TB), up to 2TB of storage, Pro camera system with 12MP Wide and 10MP Ultra Wide lenses, 12MP TrueDepth camera, Wi-Fi 6 (aka 802.11ax), Bluetooth 5.0, Face ID, Thunderbolt/USB 4 port, 40.88w/hr battery with up to 10 hours battery life



The Pro camera system combines a Wide 12MP lens and Ultra Wide 10MP lens with 125° field of view.

Big things are happening to Apple's biggest tablet. The 12.9-inch model on test here now sports the M1 – the same Apple silicon System on Chip (SoC) found on the Mac mini, MacBook Air, 13-inch MacBook Pro and 24-inch iMac.

The 2021 iPad Pro also includes a much improved display. Dubbed the Liquid Retina XDR display, it features 10,000 miniLEDs with 2,596 local dimming zones for improved colour fidelity and brightness – up to 1,600cd/m² in fact – and a 1,000,000:1 contrast ratio.

Like its Mac siblings, the 12.9-inch iPad Pro also now comes with a Thunderbolt/USB 4 port connection, enabling you to connect a huge range of peripherals – from Thunderbolt docks and displays to external drives, making it much more flexible.

And the iPad Pro Wi-Fi + Cellular also includes support for 5G, so you can now get even faster connectivity on the go (conspiracy theorists need not apply). Also on board are Wi-Fi 6 (aka 802.11ax Wi-Fi) and Bluetooth

5.0, plus a Pro camera system with Wide and Ultra Wide lenses on the back and a 12MP TrueDepth camera on the front.

The Pro options

Those are the headlines, now let's delve into the options list: the base £999 model includes all of the goodies mentioned above and comes with 128GB of onboard storage, the £1,099 doubles that to 256GB, and the £1,299 version doubles that again to 512GB. Spending £1,649 nets you 1TB of storage space, while the £1,999 version gets 2TB. These two top-tier models also get more memory. While the 128GB, 256GB and 512GB versions get 8GB of unified memory, the 1TB and 2GB models get 16GB. Those are the Wi-Fi only prices.

Wi-Fi + Cellular models cost even more – expect to pay £1,149 for the 128GB model, £1,249 for the 256GB, £1,449 for the 512GB, £1,799 for the 1TB, and £2,149 for the 2TB. Phew. Oh, and you'll need to allow for an extra £448 if you want to add a second-generation Apple Pencil (£119) and Magic Keyboard (£329) too.

If those prices are a little rich for you but you still want to go pro, the 11-inch iPad Pro has also received an M1 upgrade. Prices for that start at £749 for a 128GB Wi-Fi model and top out at £1,899 for a Wi-Fi + Cellular model with 2TB of storage on board. Note: the

Must-have accessories >

To really make the most of the iPad Pro, you'll need to do what the pros do and get these

Apple Pencil

(2nd generation)

> **£119** > apple.com/uk

> Apple's smart stylus makes it easy to write, draw and paint on the iPad Pro's screen, thanks to pressure sensitivity, tilt, and palm rejection. Its chiselled sides mean it won't roll off your desk, and it attaches to the magnet connector for easy charging.

Apple Magic Keyboard

> **£349** > apple.com/uk

> Once you've used the magnetically attached Magic Keyboard, you'll wonder how you ever managed to type on an iPad without one. Backlit and with widely spaced keys, it offers a comfortable typing experience while also helping to protect your iPad Pro when not in use.



Apple's Magic Keyboard and Pencil combine to really transform the tablet experience.



11-inch iPad Pro eschews the miniLED backlit Liquid Retina XDR display in favour of an LED-backlit Liquid Retina version.

While Apple has made sweeping changes to iPad Pro's major components, it hasn't done so with the design – and that's no bad thing. It remains one of the best tablets out there. Build quality is excellent and we love the iPad Pro's design aesthetic – its flattened sides, curved corners and aluminium body (available in Space Grey or Silver) look and feel fantastic and it's a look that's echoed across other Apple devices like the iPhone 12, iPad Air and M1 iMac. In 12.9-inch guise, the iPad Pro does feel big, measuring 214.9mm wide, 280.6mm long and 6.4mm deep. That can make it seem slightly unwieldy if you're used to smaller tablets like the iPad Air. The larger version is also thicker than the

Attaching the Magic Keyboard to the iPad Pro makes it feel more Mac-like

model it replaces by 0.5mm, thanks to the presence of those miniLEDs.

As before, the iPad Pro comes with four speakers – two on the bottom either side of the Thunderbolt/USB 4 port and two on the top, meaning you can enjoy proper stereo when watching movies. The iPad Pro also comes with a magnetic connector on one side for securing and charging the Apple Pencil, plus you'll find a Smart Connector on the back for the Magic Keyboard.

Power on tap

One of the most striking things about the Magic Keyboard is that attaching one makes the iPad Pro feel more Mac-like. When using its backlit, comfortably spaced keys and trackpad, your Mac muscle memory can't help but kick in – although, of course, there's a disconnect: iPadOS doesn't work like macOS and so some of the interface instincts you want to use here will be wrong (more on this later). The Magic Keyboard is brilliant though, and we love having a proper

1,000,000:1 contrast ratio, 1,600 nits of peak brightness, P3 wide colour, True Tone and ProMotion... the XDR Liquid Retina display looks incredible.



The iPad Pro charges via Thunderbolt/USB 4, and lasts up to 10 hours of general use.



Paul says...

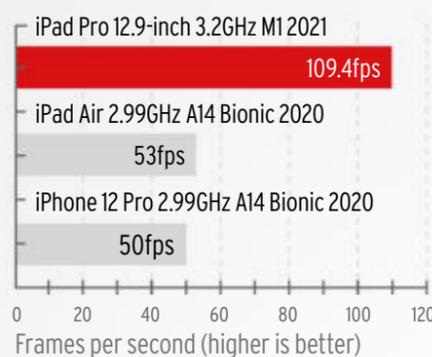
> As a creative, drawing on the iPad is really enjoyable - sketching away on Procreate for iPad from the comfort of a sofa is a joy. But I do have mixed feelings about the tablet. The hardware is superb, but the software is a little hit-and-miss.

BENCHMARKS Our analysis explained >



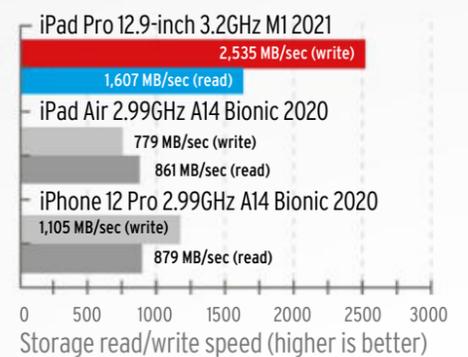
GEEKBENCH 5 SINGLE-CORE TEST

> We use this cross-platform benchmarking tool to measure a device's performance, with a single-core processor baseline of 1,000. Higher scores are better.



3DMARK WILD LIFE (2560X1440)

> This cross-platform benchmarking app measures a device's graphics performance, running a one-minute test at 2560x1440 resolution. Higher frame rates are better.



PERFORMANCE TEST MOBILE (PASSMARK)

> Another cross-platform benchmarking tool for mobile devices, this one provides individual scores. Here we're measuring storage read/write speeds.

hardware keyboard to type on rather than an on-screen one. In the Magic Keyboard's new White finish, it looks great too. However, it probably won't take long for it to start looking grubby, especially if you frequently take your iPad on the road - a black Magic Keyboard might be a better option here.

Using this big, brilliant iPad Pro is tremendous fun - apps open in a snap, applying Machine Learning smarts to photos in Pixelmator Pro is a breeze, and playing console-derived games such as Divinity: Original Sin II (reviewed next issue) show off this machine's incredible graphics prowess - with the caveat that iPadOS currently limits individual apps to a maximum of 5GB of memory. That seems fair when you remember that most iPads come with 4GB of memory or less (even last year's iPro only has 6GB), but feels wrong when the iPad Pro potentially gives you up to 16GB to play with - hopefully Apple will address that in a future OS update. However, there's so much power on tap that most of us will probably only ever scratch the surface of what the iPad Pro can do.

Hi-vis visuals

Talking of creativity, fire up an HDR movie and the Liquid Retina XDR display really delivers, with deep dark blacks, excellent contrast and incredible detail and colour, especially in darker scenes. You soon get lost in the on-screen action, especially with the stereo sound emanating from the built-in speakers as well. The display can also go very bright - almost ridiculously so. Crank up the



The 12MP Ultra Wide front-facing camera enables Centre Stage - which keeps the user focused on in video calls.

brightness and you can feel the back of your retinas burning. Retina display indeed.

As we suggested earlier, where things can fall down is with iPadOS itself. Despite the fact that the iPad Pro is effectively a touchscreen M1 Mac, it doesn't work like one. While the Files app is closer to Finder than ever, and the presence of sidebars helps, iPadOS still doesn't feel as flexible as macOS - apps open in full screen by and large (unless you're using Split View), while dragging and dropping between apps or in Files feels clunkier than in its macOS equivalent. iPadOS 15 goes some way towards addressing this, but the changes feel timid rather than bold - given the Mac and iPad Pro now share a common platform, the argument for having two separate OSes that work in different ways feels increasingly arbitrary. **Rob Mead-Green**



Mac FORMAT VERDICT

> The 12.9-inch iPad Pro was already one of the world's best tablets. Now it's even better.



- ⊕ Big, bright, beautiful display
- ⊕ M1 superpowers
- ⊕ Thunderbolt - at last!
- ⊖ iPadOS feels limiting

Apple TV 4K (2021)

Apple's TV streamer now with a fast processor and all-new remote

> **£189** > **FROM** Apple, apple.com/uk > **FEATURES** A12 Bionic chip, 32GB/64GB of storage (64GB model tested), Wi-Fi 6 (aka 802.11ax Wi-Fi), Bluetooth 5.0, 1x HDMI 2.1 port, 1x Gigabit Ethernet port, Siri remote, Lightning cable

The Apple TV 4K now includes Wi-Fi 6, Bluetooth 5.0, and supports Thread



**Mac
FORMAT
VERDICT**

> A small but welcome update. The A12 Bionic chip makes the Apple TV slick to use, aided by the redesigned Siri Remote.



- ⊕ More future-proof than before
- ⊕ Redesigned remote is a huge improvement
- ⊕ Easy-to-use interface
- ⊖ Rivals are cheaper

Think the new Apple TV 4K looks familiar? That's because it is, coming in the same shape and size as the previous generation. But this new version has an A12 Bionic chip (replacing the A10X found in its older sibling), and an all-new aluminium Siri Remote, which has been completely redesigned.

The rounded-corner TV streaming box retains its compact, yet chunky dimensions, measuring 98x98x35mm and features a matt black top with Apple TV logo, gloss black sides, with an HDMI 2.1 port (upgraded from the previous gen's HDMI 2.0) and a Gigabit Ethernet port on the back. The 2021 Apple TV 4K also now includes Wi-Fi 6 (aka 802.11ax) and Bluetooth 5.0, plus it supports Thread – the fast-growing Internet of Things (IoT) protocol, while also doubling as a home hub for HomeKit-compatible smart home gear.

The Apple TV 4K is available at two different price points, the only difference being that the £169 model has 32GB of on-board storage (for things like apps and games), while the £189 model has 64GB. Given the tiny price difference, it makes sense to opt for the larger capacity model if you can afford it.



The iPod-like clickpad on the new Siri Remote is far less prone to accidental presses than its predecessor.

While the latest update may not seem like a giant leap, the A12 chip, Wi-Fi 6 inclusion and redesigned remote make for a much more enjoyable Apple TV experience.

tvOS 14 remains as easy as ever to use, but navigating your way around its menus and sub-menus feels slicker and quicker now thanks to that A12 Bionic chip. The biggest difference to usability comes via the Siri Remote (also available separately for £55), which now features a circular iPod-like touch-enabled clickpad and a couple of additional buttons – a dedicated Power button (which can also switch on/off your TV at the same time) and a Mute button. The previous gen's Menu button is now a Back button. Siri access has been moved to a dedicated button on the right side – pressing it enables you to use Apple's virtual assistant to quickly access your favourite content, carry out App Store and iTunes searches and more.

Dolby and HFR HDR

The Siri Remote is certainly much easier to use than the model it replaces – that version had a large touch-enabled clickpad at the top of the device that was too easy to trigger accidentally (such as when picking up the remote). The new iPod-like clickpad is much less prone to being triggered at random, and you can either use the four directional buttons to navigate or glide your fingers across or around the circular clickpad. That makes it easier to scrub forward or back when watching content in apps that support its new gestures, however not all apps have been updated to take advantage of it... yet.

If you're a home cinema buff, another reason to get the new Apple TV 4K is that it now supports Dolby Vision as well as High Frame Rate HDR, delivering much more dynamic range on TVs that support the feature. It's all very impressive. **Rob Mead-Green**



ViewSonic M2e

A versatile home projector with Wi-Fi and AirPlay support



> £549 > FROM ViewSonic, viewsonic.com/uk
 > FEATURES 1080p projector, HDMI, USB-C, USB-A, MicroSD, dual-band Wi-Fi and AirPlay

The M2e supports AirPlay screen-mirroring to stream video from your Apple devices

Projectors are primarily aimed at business users for presentations, or home cinema buffs who aren't satisfied with a mere TV screen for watching Hollywood blockbusters.

However, ViewSonic's new M2e is a feature-packed, compact projector that is well suited for use at home, while still being affordable enough to provide an alternative to a conventional TV.

The compact projector measures just 184mm wide and deep, and stands 54mm high, so you shouldn't have any trouble finding a convenient spot for it on a coffee table or stand. It's light too, weighing in at just 1kg and, as well as running off mains power, it's also possible to power the M2e from a USB-C powerbank. The powerbank will need to provide at least 45W output, and the projector's brightness will be reduced to 60%, but that's still a handy option if you want to take it out into the garden for an alfresco movie evening on a warm summer night.

The primary projector features are fairly straightforward, with the M2e providing standard HD resolution (1920x1080) and 1,000 lumens brightness. The image quality is good – although not a match for the Retina resolution that most of us are used to from our Apple devices – and its short 'throw' feature is actually quite impressive, as it can create an image 100 inches in size (diagonally) from a distance of just 2.7m from your screen. However, the relatively modest brightness does mean that you really need to block external daylight as much as possible in

AirPlay support makes the M2e a good option for movie nights with your Apple devices.

order to see the image clearly. When trying the projector out in the office first, the slatted blinds were a problem, allowing in quite a lot of sunlight while testing the M2e on a sunny spring morning, but it was fine later in the day in a room with closed curtains.

Well connected

The projector scores in other areas too, particularly on ease of use for people who may not have used one before. As well as the 1080p lens, the projector also has a camera and light sensor built in, which allow it to auto-focus like the camera in an iPhone. We had the projector set up and perfectly focused in about five minutes. In fact, the most complicated aspect of the M2e is deciding which of its many input options you want to use.

As you'd expect, there's HDMI for connecting devices such as an Apple TV or Roku streaming stick, but it also has a USB-C port, USB-A, and MicroSD slot so that you can play video from a wide range of computers, mobile devices and storage devices. It's got a respectable little set of Harman Kardon speakers already built in, but the M2e also provides a 3.5mm audio output, as well as Bluetooth for streaming to wireless speakers. The M2e even includes dual-band Wi-Fi and – although ViewSonic's website bafflingly omits any mention of this – it supports AirPlay too. This means that you can use AirPlay's screen-mirroring features to stream video via Wi-Fi from your Apple devices too (although this does require a 5GHz Wi-Fi network).

The M2e won't completely replace your TV, as it's best suited for use in dimly-lit rooms, but its wide-screen image and the sheer versatility of its connectivity features make it a good addition to your home entertainment system. **Cliff Joseph**

Mac FORMAT VERDICT

> Easy setup, good connectivity features, including AirPlay support, and decent image quality.



- ⊕ Effective auto-focus feature
- ⊕ Impressive connectivity features
- ⊖ 1080p resolution
- ⊖ Best in a dark room



The M2e provides HDMI, USB-C, USB-A and microSD for connectivity options, as well as a 3.5mm audio jack port.

Fauna audio glasses

Audio kit for both your ears and your eyes...



The speakers and touchpad controls on the arms are very inconspicuous.

> **£249** > **FROM** wearfauna.com > **FEATURES** Glasses with 2-way sound system (USound MEMS microspeakers, electrodynamic woofers), 250Hz-20kHz, Bluetooth 5.0, IP52 dust and water resistance

The audio is clear with impressive stereo separation

When it comes to the latest audio gadget, the future's so bright we gotta wear shades! Designer shades that belt out our musical needs, that is. We're talking about Fauna's designer audio glasses.

We've seen 'open audio' gadgets before and felt the addition of speakers has either ruined the look of a pair of perfectly good glasses or, more importantly, not impressed in terms of audio ability. The Fauna glasses look and sound great.

Fauna do both clear glasses and sunglasses, and the Fabula Crystal Brown sunglasses we reviewed are neat, light, and fashionable. We were expecting a weight penalty thanks to the temples' audio control bars but at 50g they're on a par with most designer shades. The case is chunky (169x57x66 mm) but it's also pretty light (196g) considering it acts as the charging station.

The case has a QR code in the lid, taking you to the Fauna website for set-up instructions and support. Six charging pins either side inside the case pair up with discreet contacts on the arms of the glasses; close the case, then plug in the (included) short USB-A to USB-C cable at the front. Four LEDs to the right of the port then indicate charge level. The glasses last around four hours per charge and the case can boost them back up several times.

You connect the glasses via Bluetooth, then let the audio magic commence. On the left temple, you double-tap to start or pause, slide

back to increase volume/slide forward to lower volume, or tap and hold for four seconds to skip to the next song. For phone calls, double tap to accept or end a call; volume controls are the same, and you hold and tap for four seconds to decline a call. From the right temple, you double-tap to activate your voice assistant. The controls are easy to remember and work perfectly.

Sound and vision

The audio is surprisingly good. Each arm comprises a MEMS electrodynamic speaker and woofer. We love the freedom the glasses provide – you don't have to worry about fiddly wires/losing tiny earbuds/wearing oversized inconspicuous cans... The glasses lack a bit of bass oomph, but they can go pretty loud, and the audio is clear with precise directional audio and impressive stereo separation. Anybody particularly close by can hear a slight background noise but this is very minimal and no different to sound leaks from headphones. We appreciated the fact you are also well aware of external sounds, making the glasses feel safe to wear when, say, crossing a road or riding a bike. The beam-forming, echo-cancelling mics in the right arm mean making and receiving calls is also a clear and pleasant experience.

The Carl Zeiss Vision 1.8mm-thick acetate lenses are 50% lighter than mineral glass. The sunglasses provide over 99% UVA and UVB protection, and the clear options have a coating to protect from artificial light. The lenses can be changed for prescription ones at any opticians.

We'd have liked the audio to stop when the glasses are removed. And there's no 'off' button (although the glasses go into standby mode after about 20 minutes). But these are minor niggles. The price is pretty fair too – given that Bose's audio glasses are similarly priced. **Jo Membery**

Mac FORMAT VERDICT

> Look good and sound good with these great-sounding audio glasses.



- ⊕ Surprisingly impressive sound
- ⊕ Nicely designed with discreet speakers
- ⊖ Don't pause automatically when removed/no off switch
- ⊖ Not for true audiophiles



The case is only a fraction on the bulky side considering it also acts as the charging station for the glasses.



Keychron K3

A low-profile mechanical keyboard with options

> \$74 (about £50) > FROM Keychron, keychron.com > FEATURES Tenkeyless Bluetooth keyboard, choice of Gateron Mechanical or Keychron Optical switches, custom switch options, USB-C port for connection and charging

Keychron offers a choice of switch types as well as customisable key options

Mac FORMAT VERDICT

> This low-profile mechanical keyboard is great, although it can take some getting used to.



- ⊕ High quality keyboard
- ⊕ Customisable actuation/feel
- ⊖ Can take some getting used to
- ⊖ Bluetooth battery life is short

Much as we like Apple's Magic Keyboard for Mac, the typing experience falls a little flat.

That's, in part, due to the keyboard's ultra-slim profile. But it's also due to the limited key travel, making it irksome to type on – the Apple Wireless Keyboard (2003-2015) it ain't.

If you miss that old typing feel, then the K3 keyboard from Keychron might just be the solution. It's a tenkeyless compact Bluetooth keyboard that offers a choice of switches and customisable keys – enabling you to get the feel you want. The K3 is also backlit (unlike the Magic Keyboard) and you can choose between white backlighting or whizzy RGB.

The Keychron K3 offers a choice of two main switch types: Low-Profile Gateron Mechanical (11.7mm) and Low-Profile Keychron Optical (10.7mm). Gateron Mechanical switches give you lots of tactile feedback; the Optical switches are better for gamers and typists who want lightning speed.

The choices don't end there: Gateron Mechanical switches are available with three different levels of behaviour/sound level – Red (Linear/Quiet), Blue (Clicky/Clicky) and Brown (Tactile/Gentle). The Optical switches have seven options – from White (Linear/Quiet) to Orange (Clicky/Clicky). The Keychron website helpfully explains what each of these colour options are best suited to.



The Keychron website gives a detailed overview of what the options mean for key behaviour, travel and sound.

Choosing the right switch/option is important. That's because Gateron switches are soldered in place, whereas Keychron Optical switches are hot swappable – so you can mix sets of switches however you like. Our review unit shipped with three sets of Keychron Optical switches – Brown, White and Orange – and swapping them out is fairly straightforward, thanks to the inclusion of keycap/switch puller tools. Of the three sets, we preferred the default Brown switches, which offer decent travel while being quiet to type on. The Orange set has the most noise/key 'clackiness'.

Travel set

Swapping from Apple's Magic Keyboard to the Keychron K3 takes some getting used to. Because this is a low-profile keyboard, you won't get the same degree of key travel as some mechanical keyboards, however at 10.7mm that's a lot more travel than the Magic Keyboard can muster. The underside of the Keychron keyboard also has two pullout feet for added height.

You can also pair the K3 keyboard with up to three different devices – using the multi-position switch on the back of the keyboard's aluminium frame, where you'll also find a Bluetooth 5.1/Off/Cable switch and a USB-C port for charging and/or direct connection to your Mac.

While this is a Bluetooth keyboard with auto shutoff, we didn't find its battery life to be particularly long, so you'll probably need to top up either after long typing sessions or every few days. The keyboard can also be slow to wake from sleep. **Rob Mead-Green**

Group test

Reviewed by **CRAIG GRANNELL**

ON TEST...

- > CARROT Weather
- > Dark Sky
- > Hello Weather
- > (Not Boring) Weather
- > Weather by Tomorrow.io
- > Weather Underground: Local Map



BEST WEATHER APPS FOR iPhone AND iPad

Whatever the weather out there, make sure you're ready for it with these brilliant apps



There's a line of thinking that weather forecasts are redundant. Just look out of the window! But that only works for about 10 minutes into the future. As everyone who's marched out of the door wearing a T-shirt and subsequently been drenched will attest, longer-term forecasts are handy things.

These days, you needn't rely on newspapers or the TV to help you plan: you can put a meteorologist in your pocket. Not literally, obviously... we're referring to weather apps. Apple provides one in the form of the imaginatively named Weather, but search the App Store and you'll find a range of third-party alternatives.

This round-up explores why you might look further afield. The apps on test provide rich feature sets, customisation and unique interfaces that might gel with you a little more than Apple's app does. Also, there's nothing stopping you installing several weather apps. Use each one for a specific function, even if you stick with Apple's for an at-a-glance indication of whether you need to head out with a bottle of suntan lotion, a jumper, or an umbrella (in other words, ready for The Typical British Summer™).

How we tested

> Counter-intuitively, we didn't get hung up on weather forecasting accuracy. Doing so would have been scientifically illiterate, because you can only test accuracy for a single location at specific points in time. Instead, we concentrated on usability and clarity, along with each app's wider feature set and options. Our primary test device was an iPhone, but we also used each app on an iPad to see which developers are optimising their output for Apple's tablet.

Things to consider...

- 1 Available sources**

> Weather forecasting is complex and accuracy varies wildly. Apps that enable you to switch between a range of sources can therefore be a boon.
- 2 Pricing and subscriptions**

> You might balk at subscribing to a weather app, but weather data costs developers a lot of money. Consider the value proposition for what you need. A free version might be enough.
- 3 Settings and units**

> Decide how much you want to bend an app to your will and have that govern your selection. Some are inflexible even with units. Others have many settings.
- 4 Data access**

> How much weather information do you really need - just the temperature and a weekly outlook? If so, you'll be set with pretty much any weather app.



CARROT Weather

> **Free** or **£4.99** per month/**£19.49** per year
 > **FROM** Grailr, meetcarrot.com/weather

1 Like a weather forecaster combined with HAL 9000, CARROT Weather dishes out forecasts and sarcasm. This gives the app lashings of character, which alongside its AR mode and location game makes for the most unlikely of things: a fun weather app.

But tap almost anything and you can dig deeper, be that to unearth weather data in the main view or settings when holding tabs. A handy cards system shows info while using little screen space. On iPad, this is the sole app on test where it feels

like the creator really cares about Apple's tablet. Interface Maker takes CARROT Weather the extra mile. You use a drag-and-drop system to craft custom set-ups. The only downside is this and other key features like notifications and widgets, are behind an IAP. Still, the price matches feature-packed rivals – and the app itself betters them.

> **VERDICT**
 + Excellent customisation
 + Great on iPhone and iPad
 + Character and clarity
 - Maps aren't the best
 ★★★★★

Dark Sky

> **£3.99** > **FROM** Apple, darksky.net/app

2 The original Dark Sky dazzled with cloud-like neon rainfall predictions billowing across black maps.

Hyperlocal forecasts peeked an hour into the future, aiming to help keep you dry.

Now, the app's more conventional in appearance yet recalls its minimalist roots in a forecast view that's easy to scan. A single scrolling pane houses cloud cover, precipitation, and temperature information.

The map exists in static thumbnail form and a bespoke Map tab. The latter's full globe view – with barely any delay – is the most fluid

and gratifying. Beyond the glitz, a powerful notifications system provides daily summaries and alerts based on user-defined data points.

Omitting Home screen widgets is a blow, though, and the lack of alternate sources will sting if Dark Sky isn't accurate where you live. Apple's purchase of the app also means its long-term future remains unclear. For now, though, it's a solid buy.

> **VERDICT**
 + Easy to read forecast
 + First-rate precipitation map
 + Single purchase and no IAP
 - No Home screen widgets
 ★★★★★



Hello Weather

- > Free or £1.99 per month/£12.99 per year
- > FROM Electric Dream Machine, helloweather.com

3 Hello Weather's sunshine icon provides an indication of what's to come. This breezy app has chunky visuals and revels in simplicity, rather than deep data dives.

That's not to say it lacks information. Tap the 'Right now' section and you can view humidity, pressure, and UV details. The week's forecast can be switched between bar charts and written form. The Home screen widgets are the best we've seen on iPhone – just don't expect to tap something and be inundated with numbers and graphs.

Notably, the free version is also barely compromised from a visual standpoint, merely adding an upsell button to the forecast screen. It's ideal for the basics or if you want a vibrant weather app. Go pro and unlock data sources beyond Dark Sky, a great Apple Watch app, and other settings. You should weigh up the value proposition for your needs.

> VERDICT

- ⊕ Vibrant, friendly design
 - ⊕ Superb Home screen widgets
 - ⊕ Impressive Apple Watch app
 - ⊖ Sluggish radar view
- ★★★★★

(Not Boring) Weather

- > £1.79 per month/£14.49 per year
- > FROM Andy Works, andy.works

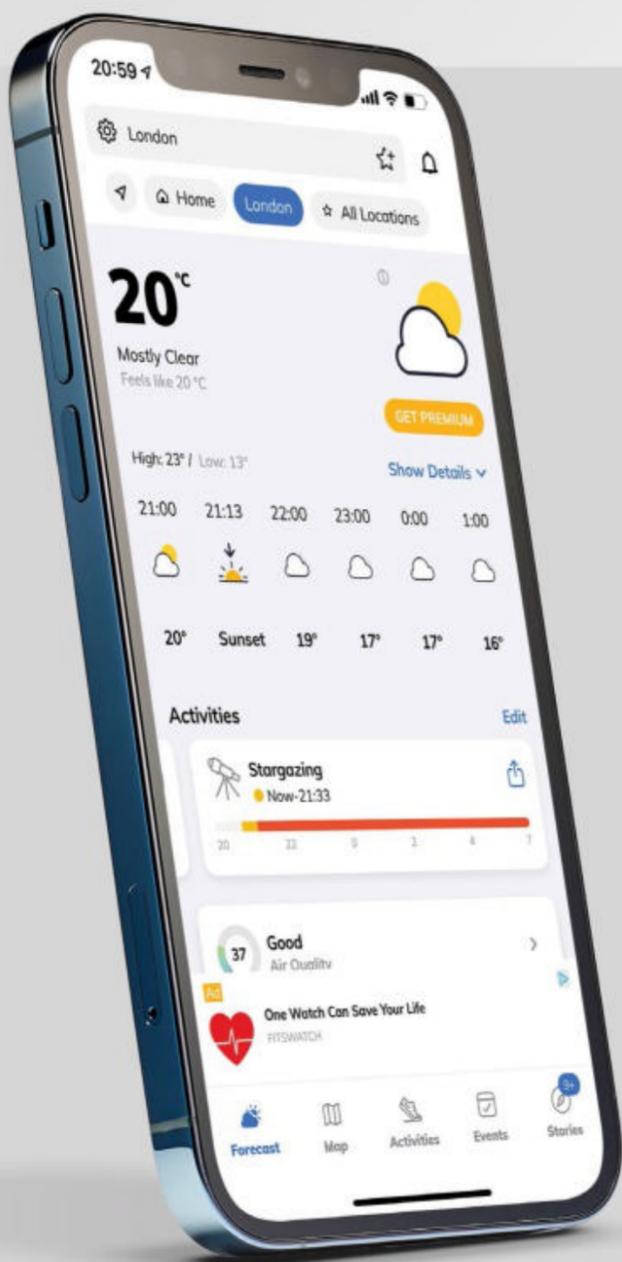
4 (Not Boring) Weather comes across more graphic design experiment than weather app. If it's sunny, a bold red orb sits before you, with a temperature readout you could see from across the street. When it rains, chunky raindrops blaze across the screen from a black cloud.

Below these animations, you can access daily or weekly predictions, scrubbing across them to update the main display. It's wonderfully playful – the moon and sun set and rise as you scrub; but it's awkward to switch between views.

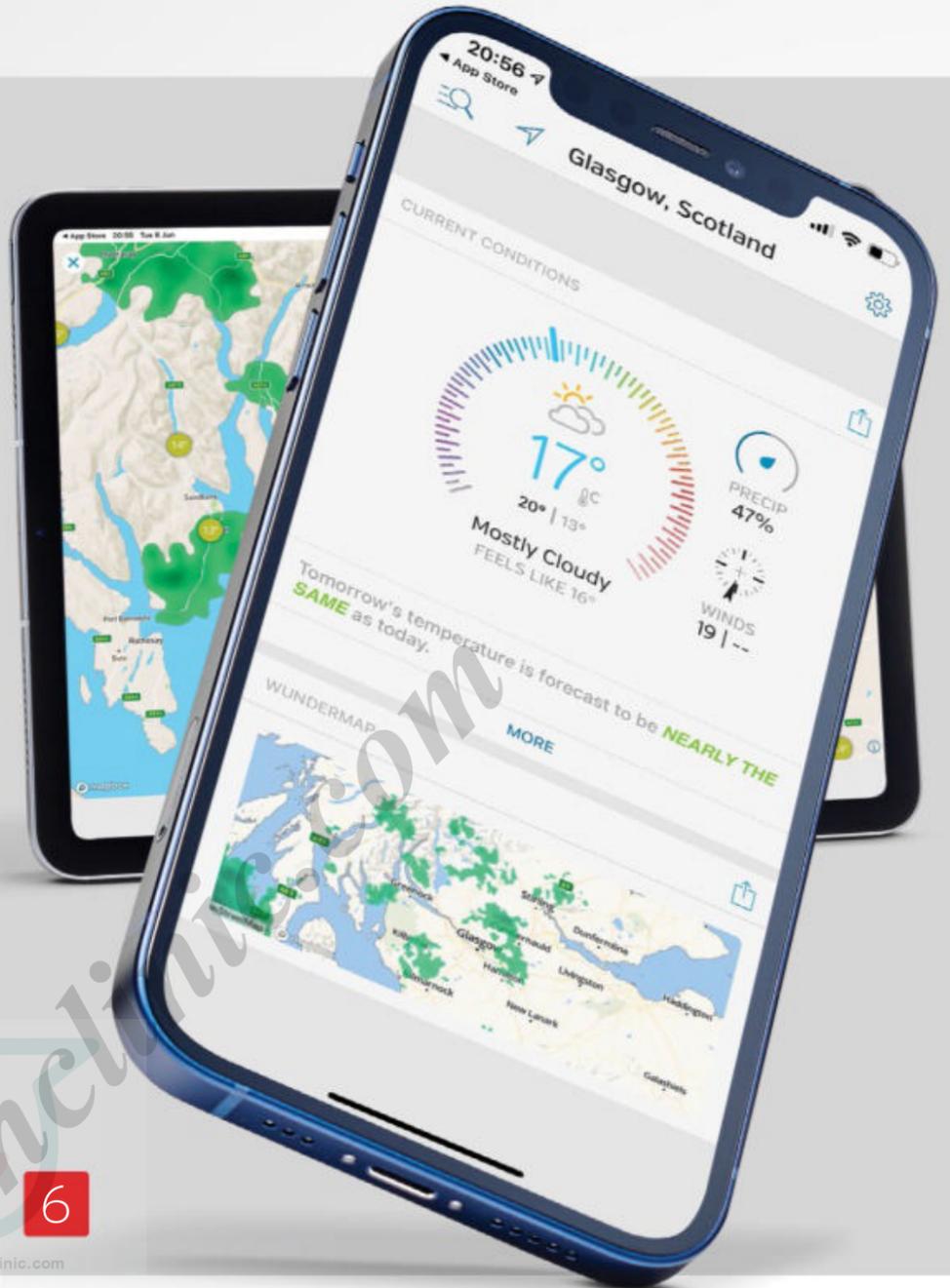
Other drawbacks include widgets being mentioned in the app's settings but not showing up on the Home screen and a subscription charge. Still, if you want a fresh approach to weather apps and are keen on other Andy Works apps (currently a timer and calculator, both unlocked with the same subscription), this one's worth a look.

> VERDICT

- ⊕ Unique visual design
 - ⊕ Playful, fun nature
 - ⊖ Awkward view switching
 - ⊖ Comparatively pricey
- ★★★★★



5



6

Weather by Tomorrow.io

> Free or £19.49 per year/£48.99 lifetime
> FROM The Tomorrow Companies, tomorrow.io

5 Examine several iPhone weather apps and Weather by Tomorrow.io seems solid but struggles to stand out. The unfussy interface clearly outlines current conditions, and a Show Details button reveals a table with eight further data points for anyone desperate to know what the dew point will be at noon. There's a jerkily animated map, news stories to browse, and options for notifications and units.

The Activities tab is more interesting. Here, you define activities you partake in, and can assign them to any of

your locations. Bar charts then detail when would be optimal, good, acceptable, or bad for things like walking or driving. We'd be hard-pressed to splash out £19.49 annually for this app's premium incarnation, which removes the ads and provides unlimited alerts, but as a freebie for the activities stuff it's certainly worth a download.

- > **VERDICT** [REDACTED]
- ⊕ Clean, pleasant interface
 - ⊕ Activities recommendations
 - ⊖ Map is pretty poor
 - ⊖ No alternate sources
- ★★★★☆

Weather Underground: Local Map

> Free or £3.99 per month/£19.49 per year
> FROM Weather Underground, wunderground.com/download

6 A few years ago, this was an impressive free weather app. Weather Underground deftly packed in data and looked great. Since then, it's regressed, with a comparatively decompressed interface that forces you to scroll too much. Fortunately, there's still a lot to like. The daily forecast pane makes it easy to spot rainfall and temperature trends over the coming week, and the sun/moon pane is brilliantly designed.

The best bit, though, is the Wundermap. A small version exists on the main screen, but tap that and it

fills your display. It's not as pretty as Dark Sky's map, but is slick and responsive as you pinch-zoom to view rainfall and temperature readings. Handily, it doesn't lurk behind the IAP – this app's premium tier merely removes adverts and adds 'smart forecasts'. So stick with the free version and get a first-rate weather map on your phone.

- > **VERDICT** [REDACTED]
- ⊕ Useful, fluid, responsive map
 - ⊕ Great daily forecast pane
 - ⊖ Decompressed design
 - ⊖ No Home screen widgets
- ★★★★☆



THE WINNER CARROT Weather

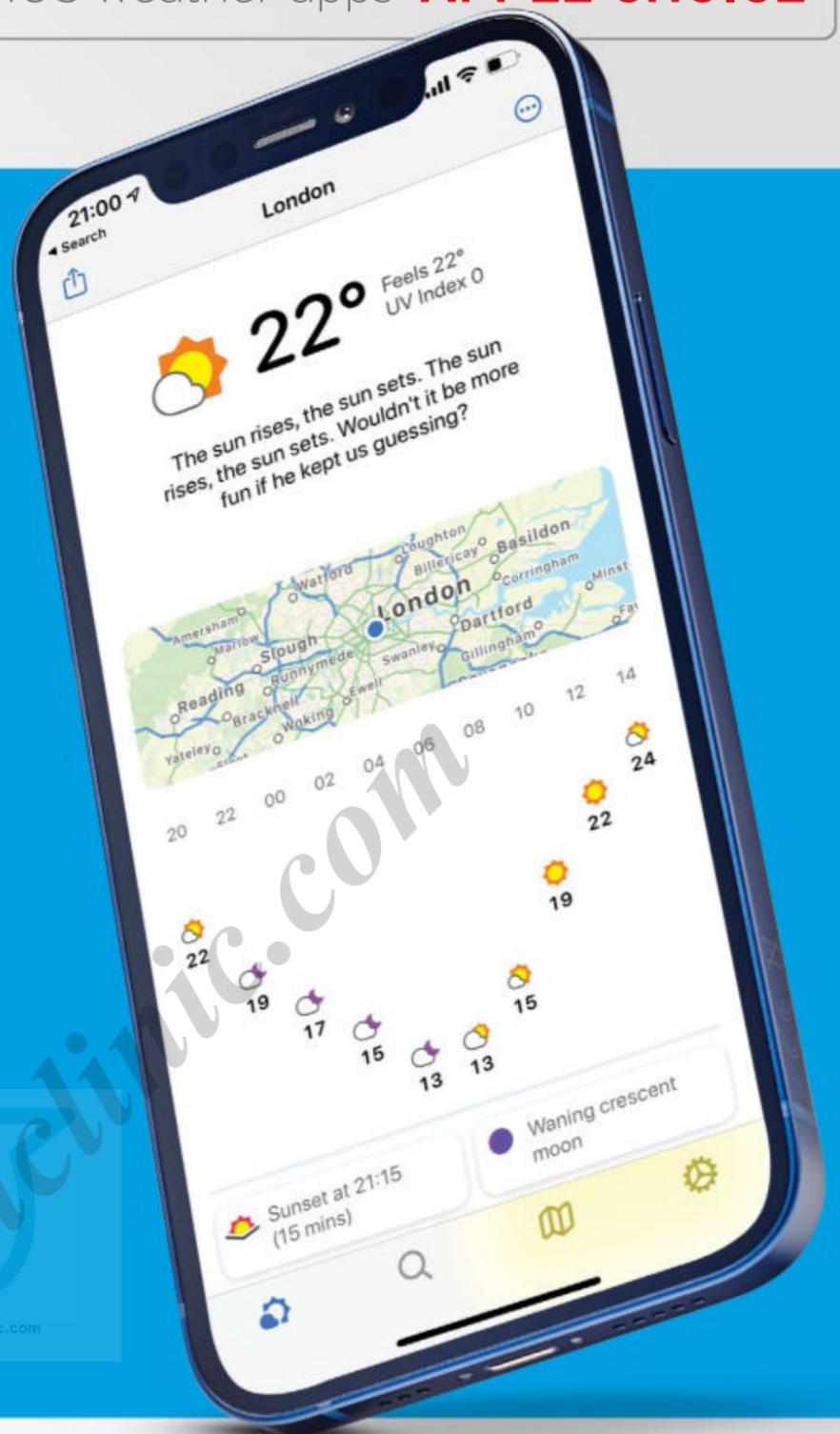
Feature-packed forecasts with a funny outlook

Flexibility, features, and fun combine to make the best weather app on both the iPhone and iPad. From an objective standpoint, CARROT Weather blows the competition out of the water. That said, it doesn't better its rivals at everything – Dark Sky and Weather Underground have superior maps; Hello Weather is bolder and friendlier; there's no equivalent of Weather by Tomorrow.io's activities recommendations. But it gets things right where it counts.

The app is packed with features and it's hugely flexible,

with a superb interface designer. It doesn't flood the screen with information, but leaves deep data dives only a tap away. And it is equally impressive and optimised for iPad. The snag is that you pay for that quality, though the price tag is pretty reasonable.

Anti subscriptions? Go for Dark Sky – assuming Apple doesn't remove it from play. Happy to pay monthly but want something simple? Get Hello Weather. And if you don't fancy paying any money but are bored with Apple's Weather, go for the free versions of the CARROT and Hello Weather apps.



> How do they compare?



> Specs	CARROT Weather	Dark Sky	Hello Weather	(Not Boring) Weather	Weather by Tomorrow.io	Weather Underground
Price	Free or £4.99 per month or £19.99 per year (premium tier)	£3.99	Free or £1.99 per month or £12.99 per year or £43.99 lifetime	£1.79 per month/£14.49 per year	Free or £19.49 per year or £39.99 lifetime	Free or £3.99 per month or £19.49 per year
Website	meetcarrot.com/weather/	darksky.net/app	helloweather.com	andy.works	tomorrow.io/consumer-app/	wunderground.com/download
Multiple sources	Yes	No	Yes	Yes	No	No
Notifications	Custom	Custom	No	No	Custom	Severe/significant weather
Extended forecast	Up to 14 days	7 days	7 days	7 days	14 days	9 days (free); 15 days (premium)
Units	Custom	UK/USA/metric	UK/USA/metric	UK/USA/metric	UK/USA/metric/custom	UK/USA/metric
Apple Watch app	Yes	Yes	Yes	No	Yes	No
Home screen widgets	Yes	No	Yes	No	No	No
> 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.

Nudget: Spending Tracker

An easy way to monitor your money

> £3.99 > FROM Sawyer Blatz, nudgetapp.com
> NEEDS iOS 13 or later

Nudget is a beautifully designed way to track your personal spending

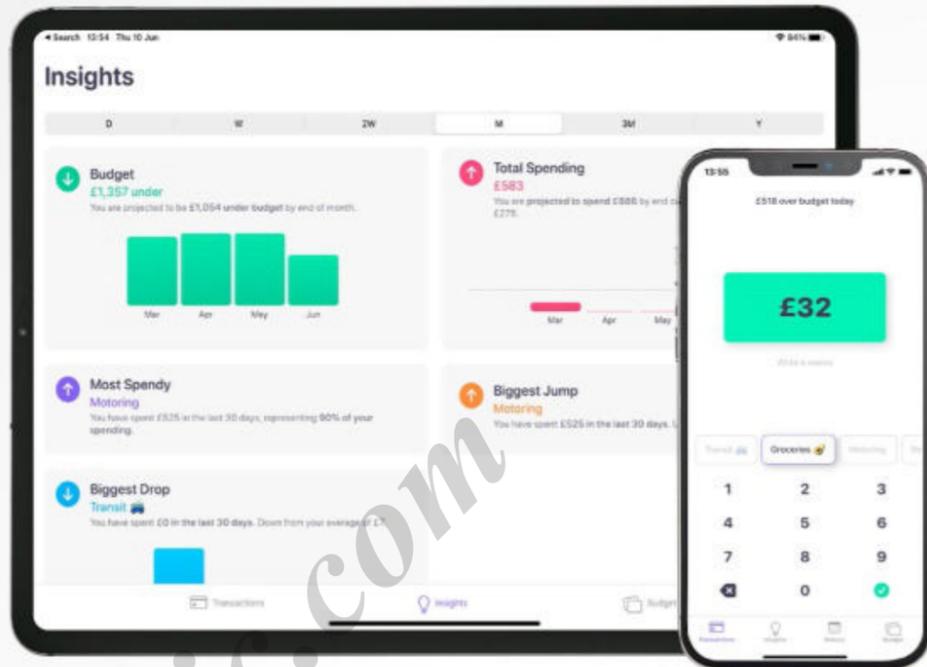
Tracking and managing personal budgets would seem to be a task well suited to software.

But many applications on the market are more business-oriented, with features that a regular user probably doesn't need. There's always a Numbers or Excel spreadsheet then, but, well, they're not exactly fun.

Nudget aims to streamline and simplify the tracking of your personal spending. If it's easy to do, people are more likely to do it.

Nudget is slick and Apple-like. There are no sign-ups or logins, and iCloud sync is available across your iOS devices. Face ID can also be used on supported devices for authentication. On first launch you are prompted to enter your monthly income, which can be edited at any point, and extra income can be added on an ad-hoc basis.

In the Budget section, you can add recurring expenses like rent or subscriptions that the app will automatically factor into your budget. You can also specify an amount you plan to put into savings every month. The Budget screen shows you how much spending money you have, based on deductions for expenses and savings. The figures can be split by day, week, fortnight,



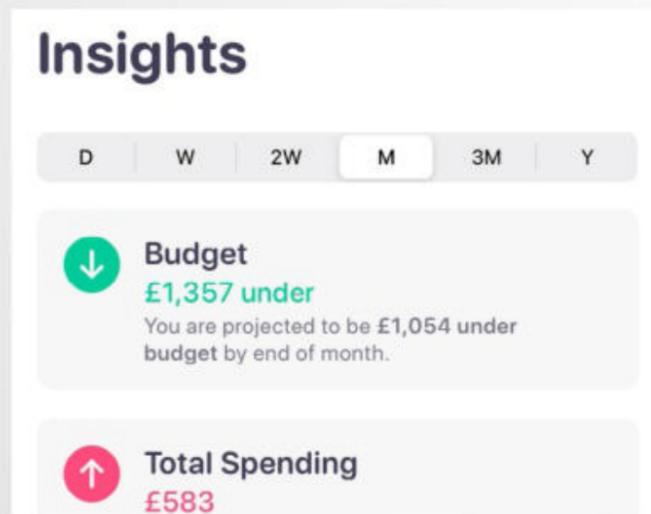
Get detailed but clear insights into how your spending habits break down.

month, quarter, or year. The day-to-day business of tracking spending then happens in the Transaction section. Here you simply tap to add an amount when you make a purchase and there are editable tags like transit, groceries, clothing, and more. The developer recommends using fewer, more generic tags rather than the names of individual stores, for example, to keep the overviews more readable.

Hey big spender

These transactions automatically get deducted from your available spending money and the third section, called Insights, provides you with an overview of how your spending is going. There's a budget projection, a list of your biggest purchases, notable drops and jumps in spending in specific categories, and a total spend indicator. This data can be viewed using the same date range breakdowns as mentioned above. Data can be exported as plain text too.

Nudget is a straightforward way to record and track personal spending that's beautifully designed. Bear in mind that it's not linked to your actual bank accounts, so it only knows what you tell it. It also seems a perfect candidate for Apple Watch support, and happily this is slated for a future update. Budget tracking can be a chore, but Nudget is one of the easiest ways to do it, providing a clear and uncluttered overview of your finances. **Hollin Jones**



Nudget is slick and Apple-like, and iCloud sync is available across devices.

Mac FORMAT VERDICT

> Nudget is a well-designed budget tracker that keeps things simple.



- + Very affordable
- + Easy to set up and use
- + iCloud sync across iOS devices
- Apple Watch support is pending

Notability

Share and sync with iOS devices

- > **£8.99** (IAPs) > **FROM** Ginger Labs, gingerlabs.com
- > **NEEDS** macOS 10.15 or later

Mac FORMAT VERDICT

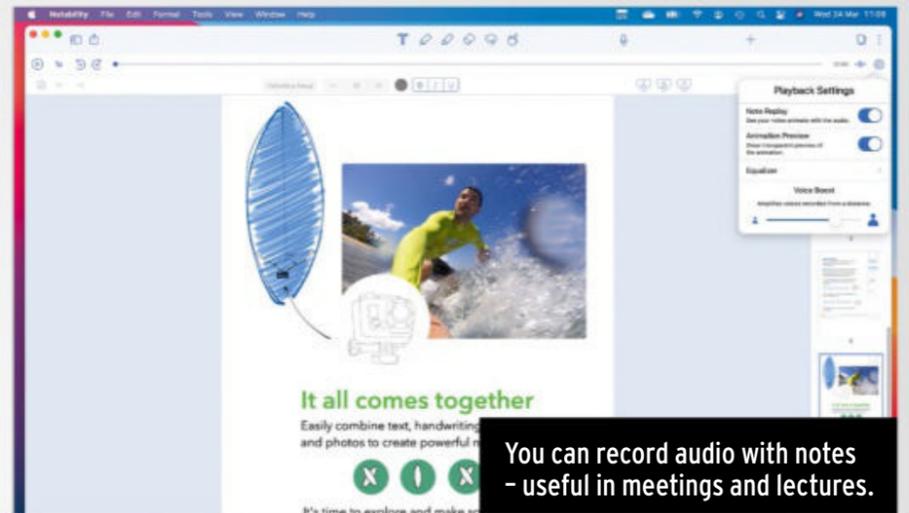
- > This is a companion app rather than a standalone Mac app.



- ⊕ Syncs over iCloud
- ⊖ Made for fingers

Notability is one of our favourite note-taking apps for iOS and iPadOS.

The Mac app interface is organised into four sections, including the main editing window. The Library is a Finder-style sidebar that shows note categories; to its right are the thumbnails of the notes in that category. There's a main edit panel, and a note navigator with thumbnails of the current note at the right. If you hide all the other panels, the editing panel automatically resizes and rescales. We found that quite annoying – hiding



the panels made the text jump from 11pt to 20pt, and switching into full-screen mode took it to 48pt.

One of the things we like best about Notability on iOS is its support for Apple Pencil, enabling you to annotate, scribble, sketch, and highlight in a really natural way. You can do all these things with your Mac too, but unless you have a graphics tablet or use your iPad and Pencil via

Sidecar it's quite awkward with a trackpad or mouse. And if you're going to use Sidecar you might as well use the iPad Notability app.

Note that handwriting recognition, to turn writing into editable text, and maths recognition, to turn equations into hi-res images, are in-app purchases (at £2.99 each).

Notability on Mac is best considered as a companion to the iPad app. **Carrie Marshall**

Commander One 3.0

A dual-pane Finder alternative

- > **Free** (IAPs) > **FROM** Electronic Team, ftp-mac.com
- > **NEEDS** macOS 10.12 or later

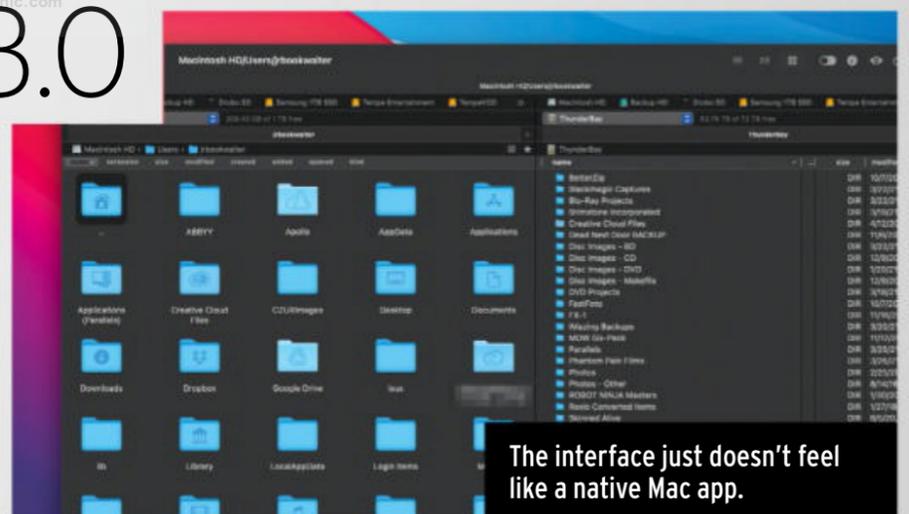
Mac FORMAT VERDICT

- > A modest update for everyone but macOS Big Sur users.



- ⊕ Dual-pane file manager
- ⊖ Not M1 optimised

Despite Finder's advances, there are still Mac owners who feel it doesn't go far enough. Commander One 3.0 is a versatile dual-pane solution with support for unlimited tabs, hotkey shortcuts, built-in Command Line bar, and FTP client that speeds up everyday tasks, and eliminates the need for third-party utilities. It also now directly accesses cloud storage services Google Drive, OneDrive, Mega, and pCloud, as well as Dropbox and Box. There's now full support for Big Sur. The app remains



Intel, although it installed and ran fine on our M1 MacBook Pro. Despite the claims of faster data transfer rates, we found the Apple silicon-enhanced Finder copied an 80GB Parallels VM to a USB 3-connected external SSD in just under three minutes – about 10 seconds faster than using Commander Pro.

The overcrowded interface is chock full of options, but file manager competitors Path

Finder or ForkLift feel more like native Mac apps while also improving discoverability of crucial features, which are largely buried here.

That said, compatibility with macFUSE 4 enhances Commander One's handling of native file systems, as well as those from third parties. Amazon S3 users will also like a new option to use path-style URLs when accessing their buckets. **JR Bookwalter**

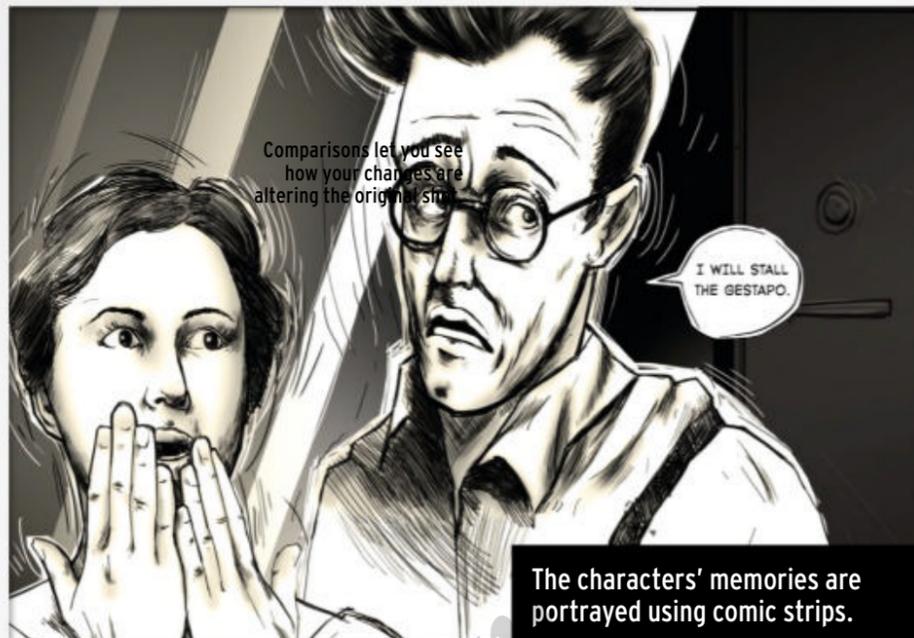
Attentat 1942

Life under Nazi occupation in authentic voyage of discovery

> £3.99

> FROM Charles Games, attentat1942.com

> NEEDS macOS 10.15 or later



The characters' memories are portrayed using comic strips.

The story was written by historians, giving it a grounded authenticity

The premise of *Attentat 1942* seems simple – you interview survivors of the Nazi occupation of Czechoslovakia to discover information about your grandfather.

The more you play, though, the more it reveals the complexity and ambiguities of trying to survive amidst such brutal repression.

Why was your grandfather arrested by the Gestapo? How did your grandmother survive the war? These are surface questions, but they reveal deeper uncertainties – by agitating against Resistance activities, are you a collaborator or a survivor? Should you fight back even if it triggers violent retaliation against innocent people? The characters react in different ways; the past is complex, the truth hard to discern.

Much of the game involves interviewing these people in live-action vignettes. The characters are portrayed by actors, but they are remarkably believable thanks to the writing and the skill of the actors. The story was written by historians, giving it a grounded authenticity.



You must interview survivors of Nazi repression to progress the story.

You can easily forget *Attentat 1942* is a game that must be completed rather than an interactive movie that you passively consume. Ask the wrong question and your subjects can suddenly trail off or refuse to divulge any more, temporarily locking you out of lines of inquiry or interview subjects. You can redo interviews at the cost of one coin per retry, but these often involve long, unskippable sections before you get the chance to ask a fresh question, which is a shame.

Under pressure

How do you earn coins? By completing the mini games scattered throughout *Attentat 1942*. Each is set during the occupation period and takes the form of an animated comic strip. Some are puzzles while others comprise quick-time events, so there's a good variety to keep you on your toes.

Frustratingly, many are completely devoid of hints. One game involves stalling the Gestapo at your front door so your wife can hide incriminating Resistance evidence, with each word you choose spawning more options to blurt out under the pressure of an ever-decreasing time bar. Most options seem reasonable, making choosing the correct one feel like an exercise in guesswork. Get it wrong and the worst that happens is you miss out on some coins, but it feels a little arbitrary.

This is a minor gripe, though. *Attentat 1942* is an otherwise excellent experience. Its lifelike, deeply realistic portrayal of life under occupation – the fear, the resilience, the attempts at survival, and even some degree of normality – will resonate long after you finish it. Regardless of whether you're a history buff or exploring the subject for the first time, there's plenty to love. **Alex Blake**

Mac FORMAT VERDICT

> History brought to life with poignancy and gravitas.



+ Realistic and believable

+ Excellent acting

+ Fascinating story

- Some repetition

Scanner Pro: PDF Scanner App

Excellent free mobile scanner

- > **Free** (IAPs) > **FROM** Readdle, readdle.com
- > **NEEDS** iOS 11 or later

Mac FORMAT VERDICT

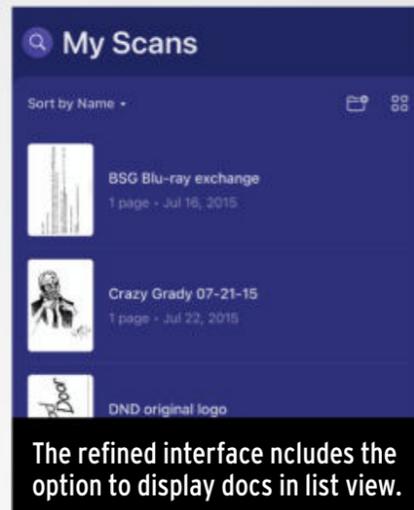
> Better than ever, and now free for all to use.



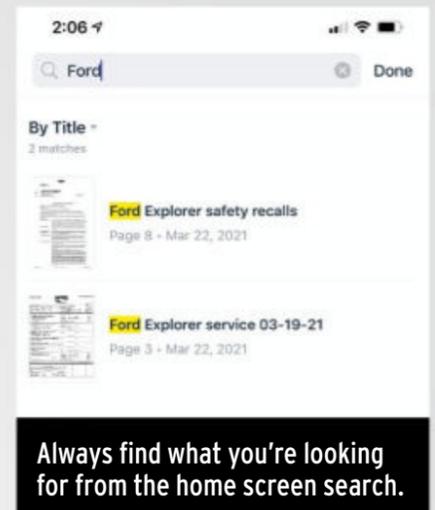
- ⊕ Best-in-class document scanner
- ⊖ Sharing watermark on free app

Scanner Pro has recently been updated to version

8.0. The biggest change? The app is now free, so everyone benefits from auto crop, shadow removal, iCloud syncing, and sharing with others – albeit with a watermark. This limitation can be removed with a Plus subscription (£19.49/year), which also enables on-device OCR in 26 languages, full text search, password protection, and automatic upload



The refined interface includes the option to display docs in list view.



Always find what you're looking for from the home screen search.

workflows. These and other current features remain unlocked for those who own the paid version; developer Readdle plans to introduce additional goodies which may or may not require a subscription.

The update also enhances Scanner Pro's look and feel, and organisation approach. The interface now uses dual shades of eye-pleasing purple, with the option to view scans

as thumbnails or in a list. New sorting options allow finding docs more quickly by name, date created, or date modified.

The Text Vision feature recognises scanned text in a document so you can copy or share it, and the app now uses that data to make the content of all saved files searchable. This feature works from the app home screen or can be limited to the currently open document. **JR Bookwalter**

GoodTask 6.4

Track everything about yourself

- > **Free** (IAPs) > **FROM** Haha Interactive, hahaint.com
- > **NEEDS** iOS 12 or later

Mac FORMAT VERDICT

> A powerful and highly customisable task manager.

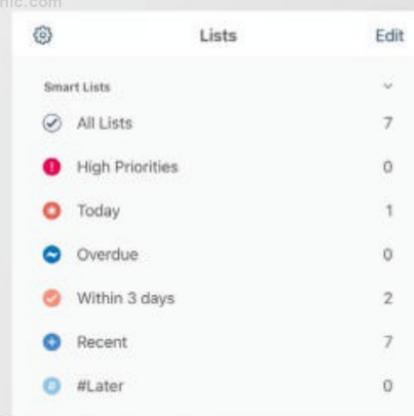


- ⊕ Powerful Quick Actions
- ⊖ No delegation or collaboration tools

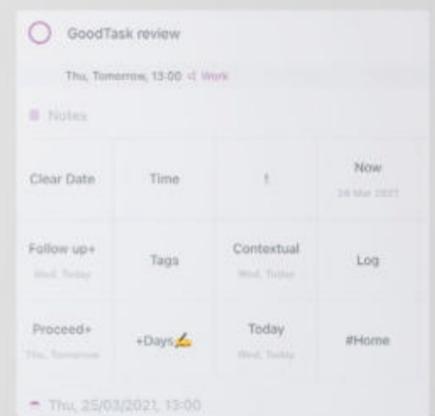
GoodTask makes the process of creating tasks as easy as possible. Version 6.4

adds a Board View that lets you easily view upcoming tasks by deadline in columns across the screen.

The app syncs with iOS Reminders and Calendars and pulls in lists from the former. You can pick which lists to include and create new ones, add tags to tasks and filter them to only see those with, or without, a specific tag. Actions enable you to create or edit parameters, such as title, due date, and notes. Quick Actions



You can create Smart Lists based on task parameters.



Quick Actions allow you to apply multiple actions with one tap.

allow you to apply multiple Actions simultaneously. There are several ready to use, or you can create your own. You can also create templates – groups of tasks and subtasks – and apply one on any given day, or set it to recur.

The app can be customised with themes, and you can change font sizes and the way tasks are displayed. There's an accompanying Apple Watch app, and support for iOS

Widgets. The Favorites widget lets you add a customised new task or directly open a list. And you can share lists using Share Sheets.

One of the few things GoodTask doesn't do is allow you to collaborate or delegate tasks easily with others. The iOS app costs £9.99 to unlock all features; the Mac version costs £38.99. That's still competitive and good value for money. **Kenny Hemphill**

6 apps to rejuvenate your garden

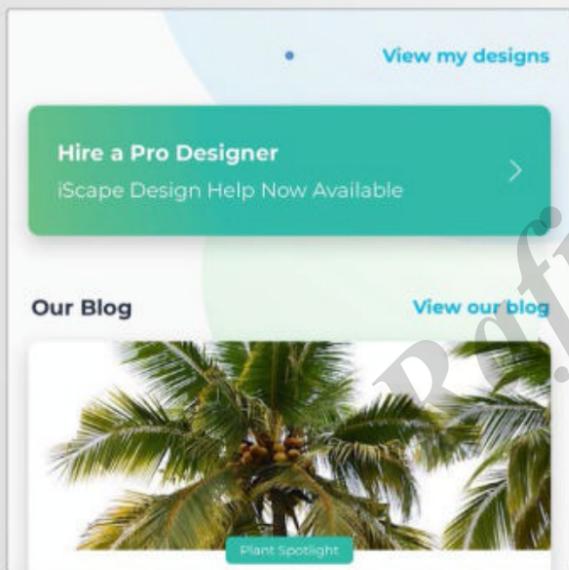
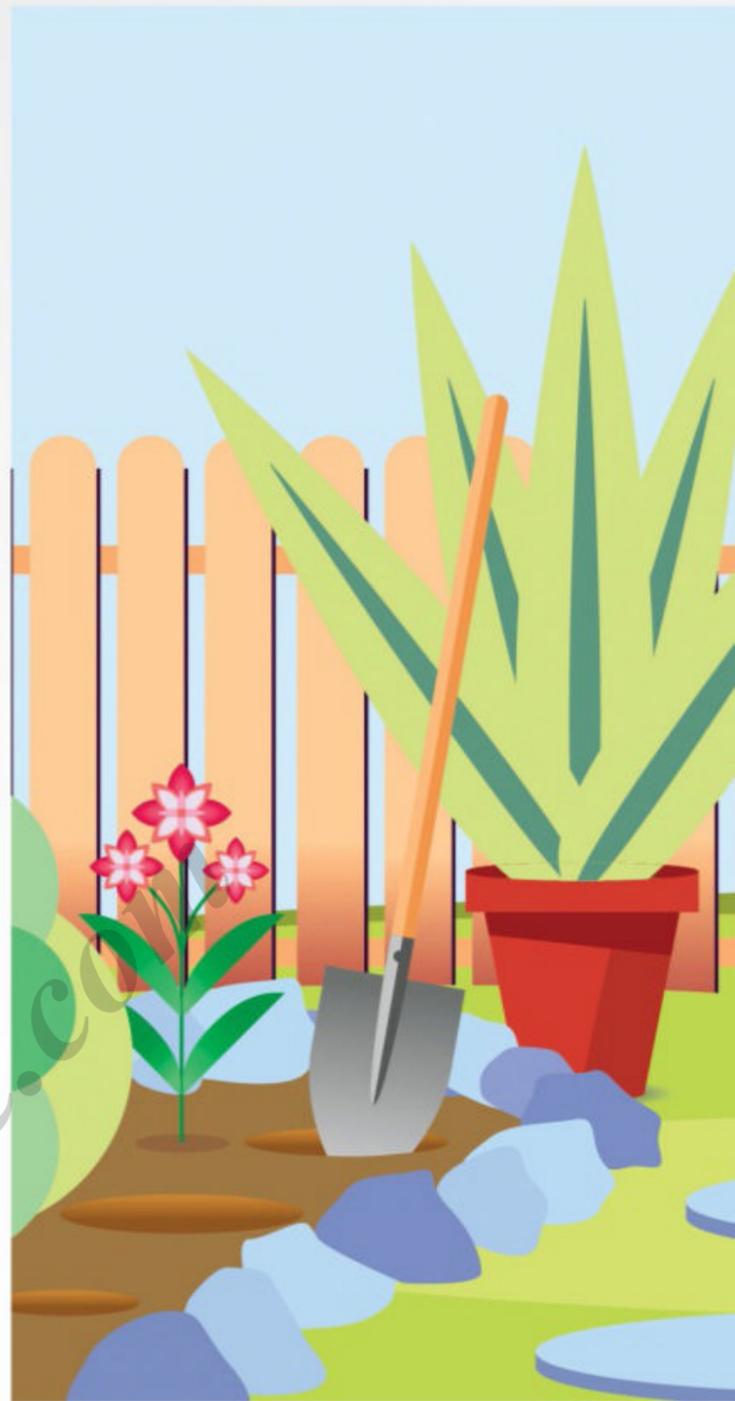
Turn over a new leaf with these apps

Reviewed by **ALEX BLAKE**

Summer is finally upon us, and if a wet Spring has stopped you from making the most out of your garden, now is the time to get out there and put your green fingers to work.

While gardening may seem like a very traditional pastime, it can really benefit from a touch of digital

assistance. Whether you want to grow your own veg or nurture a field of beautiful flowers, there are plenty of apps to help you. We've rounded up six gardening apps that do everything from identifying plants and offering growing tips to planning your dream garden in minute detail. Best of all, they're all completely free to get started.



iScape

> **Free** (IAPs) > **NEEDS** iOS 12.2 or later



To have a thriving garden, you need to plan it to perfection. Visualising how the finished product should look can be tricky, but iScape makes it simple. This handy app lets you plan and landscape your garden from the comfort of your device. With tons of design tools on hand and easy ways to purchase the products you need, you'll have a ready-to-go plan in no time.

Rating: 4.5 (100+ reviews)

	Broccoli	Celery	Green Bean	Iceberg Lettuce	Kohlrabi	Napa Cabbage	Potatoe	Tomato
Broccoli		♥	♥	♥			⚡	♥
Celery	♥		♥	⚡	♥	♥	⚡	♥
Green Bean		♥		♥	♥	♥	♥	♥
Iceberg Lettuce	♥	⚡	♥				⚡	♥
Kohlrabi		♥	♥				♥	
Napa Cabbage		♥	♥					♥
Potatoe	⚡							
Tomato	♥	♥	♥	♥	♥	♥	⚡	

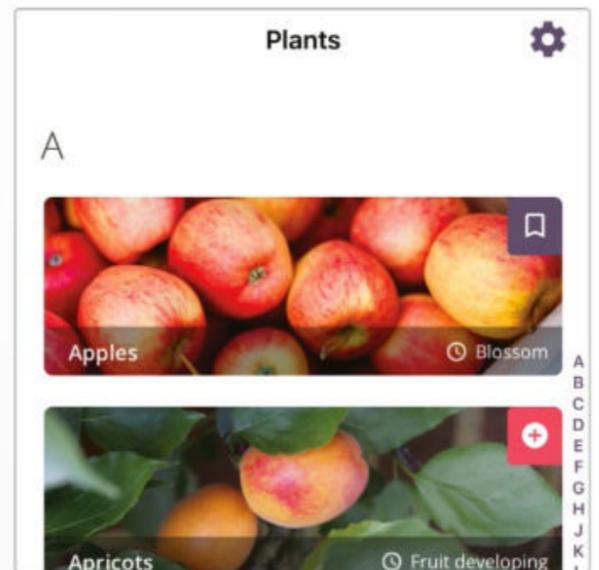
Tomatoes keep pests away from cabbages.

Veggie Garden Planner

> **Free** (IAPs) > **NEEDS** iOS 9 or later



While iScape focuses on your entire garden, Veggie Garden Planner drills down into the detail of planting and growing your own vegetables. You get a top-down view of your plot, with tips on which vegetables grow well next to each other and which are bad neighbours, when to sow and when to harvest, and advice on best practices for crop rotation.

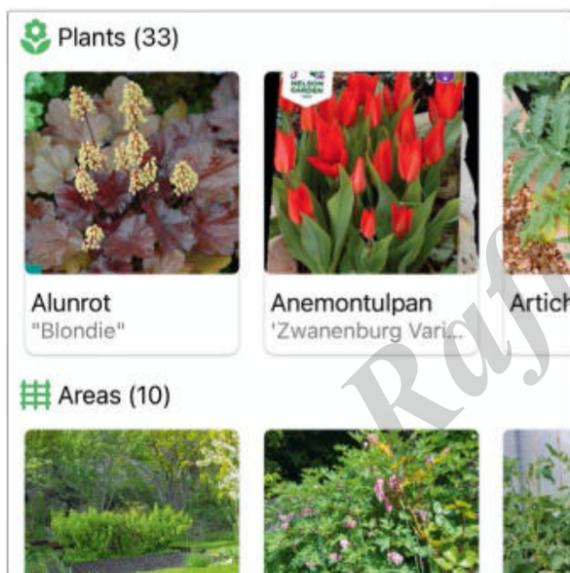
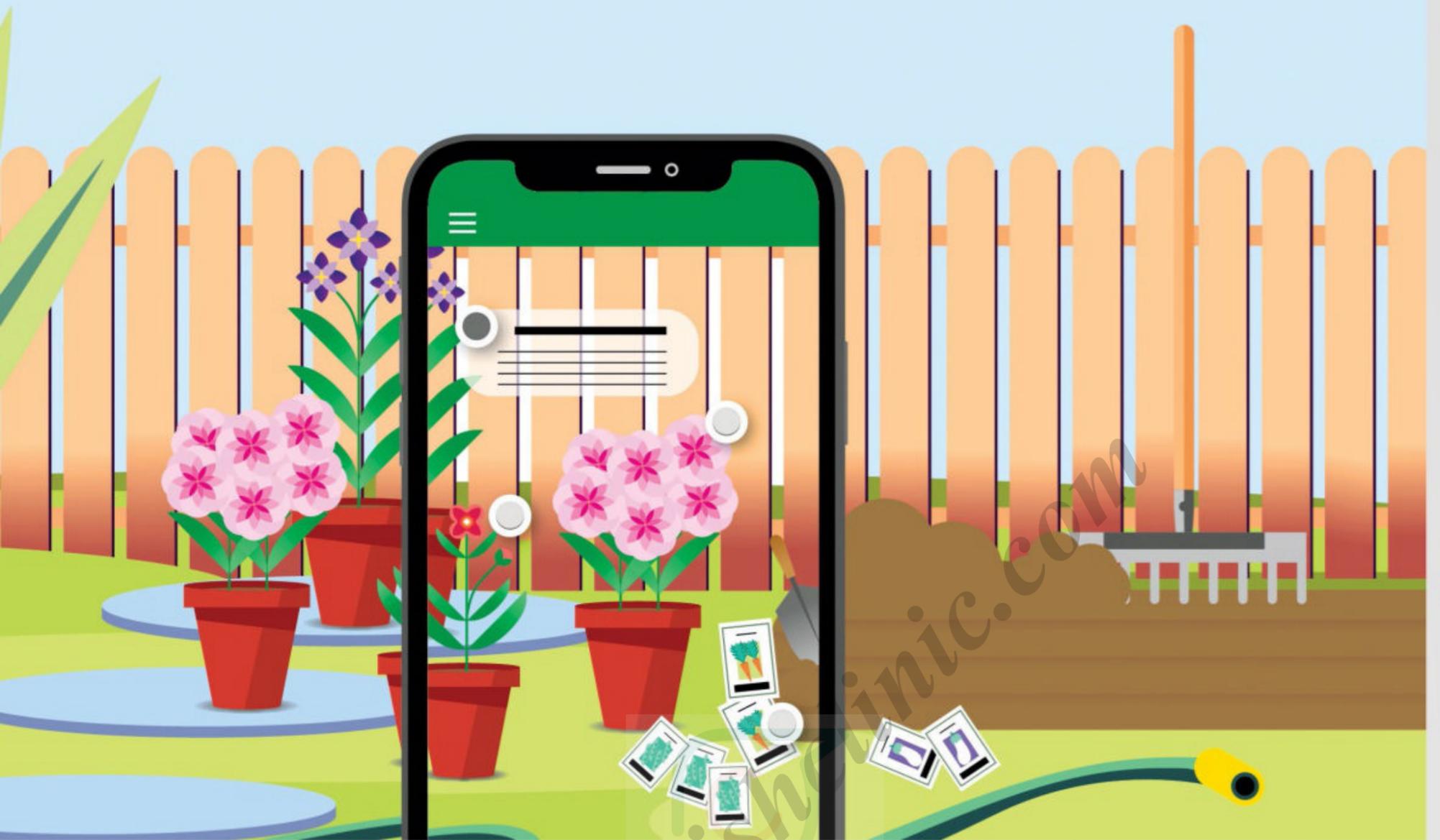


Grow Your Own

> **Free** > **NEEDS** iOS 8 or later



What better place to get gardening advice than the Royal Horticultural Society? The RHS's Grow Your Own app is chock-full of advice tailored to your experience and skill level. There's a calendar to help with planting schedules, advice for common problems, plus help for over 100 varieties of fruit, veg and herbs. Even better, it is 100% free, with no fees or subscriptions.

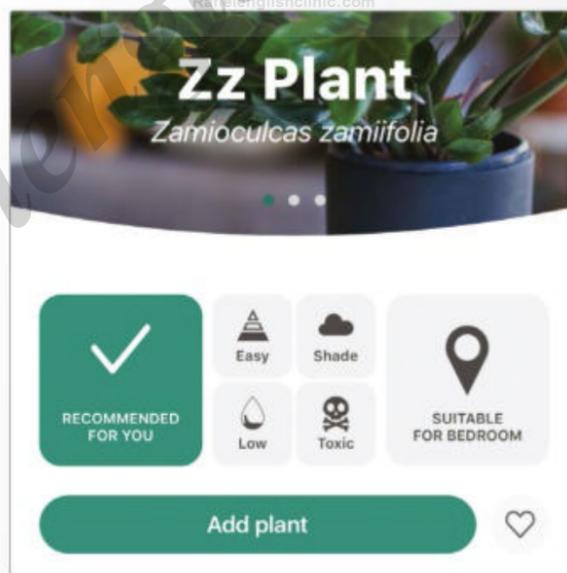


Gardenize

> **Free** (IAPs) > **NEEDS** iOS 10 or later



As your plants grow and your garden develops, it's important to keep track of everything and ensure it's going to plan. The Gardenize: Grow & Track Plants journal app lets you record your plants and the actions you've taken through photos, notes, and reminders. You can also connect with other users and find inspiration in their gardening success stories.

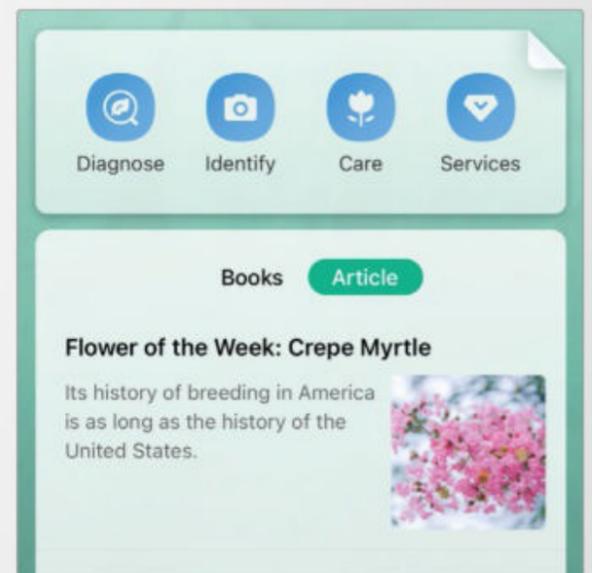


Planta: Keep your plants alive

> **Free** (IAPs) > **NEEDS** iOS 13 or later



Rearing an outdoor garden is one thing, but growing plants indoors is another matter. Planta offers advice based on where you grow your plants, whether indoors or out. With care guides and reminders, flower identification tools, and even a light meter to ensure your plants are never under- or over-exposed, it has all you need for happy horticulture.



PictureThis

> **Free** (IAPs) > **NEEDS** iOS 11 or later



Do you have a mystery plant lurking in your garden that you can't identify? PictureThis – Plant Identifier uses artificial intelligence to classify almost anything growing in your garden – just snap a quick pic and it gets to work. Once the plant has been unmasked, PictureThis can diagnose problems and guide you on how to care for it, with reminders and notes.

STORE GUIDE

EDITED BY **ROB MEAD-GREEN** >

Your complete guide to the best Apple hardware and third-party accessories

EXPECTED
AUG 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 Big Sur, 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 eight-core CPU/seven-core GPU option comes with a 256GB SSD (configurable to 512GB or 1TB). The eight-core CPU/eight-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.

The 27in iMac, last updated mid 2020, sports SSDs across the line and you can choose from six-core tenth-gen Intel Core i5s on the entry level models, or an eight-core tenth-gen Intel Core i7. The 27in iMacs also boast AMD Radeon Pro 5300 graphics on the entry and mid-range models, and an AMD Radeon Pro 5550 XT GPU on the £2,999 model. All three models have 5K Retina displays with True Tone. You can add up to 128GB of memory and up to 8TB of solid-state storage.



The 24in iMac released in April 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	£1,649
HIGH END	27in 3.8GHz eight-core Intel Core i7	MEMORY 8GB of 2,666MHz DDR4 GRAPHICS AMD Radeon Pro 5500 XT STORAGE 512GB SSD DISPLAY Retina 5K (IPS, P3 gamut) ALSO Magic Mouse, Magic Keyboard	£2,299

R = Retina display

**EXPECTED
SEP 2021
UPDATED
NOV 2020**



The MacBook Pro 13-inch (Late 2020) features Apple's own silicon 5nm M1 chip.

MacBook Pro > From £1,299

> In November 2020, Apple rather surprised the tech world with an earlier-than-expected release of the first MacBook Pro with its own custom designed 5nm Apple M1 chip.

The eight-core CPU is said to offer 2.8 times faster performance over its predecessor, while the eight-core GPU has five times faster graphics. The 16-core Neural Engine completes the powerhouse spec sheet for advanced machine learning. All this, coupled with a 61W battery, translates to the longest battery life for a MacBook Pro so far, with an impressive 17 hours of web browsing and 20 hours of video play. The Pro comes with 8GB of unified memory but you can upgrade to 16GB. Storage starts at 256GB SSD, and can be configured up to 2TB.

The physical build remains the same as the May 2020 model (1.56x30.41x21.24cm), and still features the Magic Keyboard, Touch Bar, Touch ID and Force Touch trackpad. There are now two Thunderbolt/USB 4 ports. As well as Bluetooth 5.0, the 13in Pro now supports 802.11ax Wi-Fi.

13-inch model pricing starts at £1,299; while upping the unified memory to 16GB

and opting for the top SSD storage of 2TB takes the price to £2,299.

So far, only the 13-inch model has been updated to the M1 chip, but the 16-inch is obviously due to follow. The 13-inch 2.0GHz Intel Core i5 Quad Core model with Intel Iris Plus Graphics, starting at £1,799, is still available. As are the 16-inch ninth-gen Intel Core models, which start at £2,399.

> 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	13in, M1 8-core CPU, 8-core GPU	MEMORY 16GB of unified memory STORAGE 512GB SSD TOUCH BAR Yes TOUCH ID Yes	£1,699
HIGH END	16in 2.4GHz 8-core Intel Core i9	MEMORY 64GB of 2,666MHz DDR4 GPU AMD Radeon Pro 5500 4GB STORAGE 1TB SSD TOUCH BAR Yes TOUCH ID Yes	£3,799

**EXPECTED
DEC 2021**

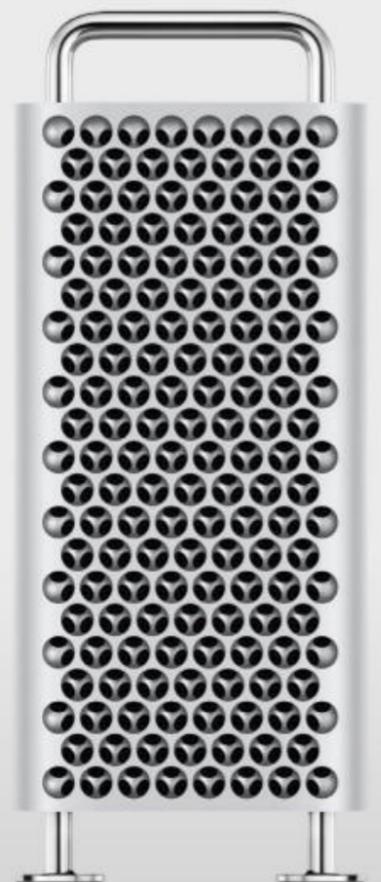
Mac Pro

> From **£5,499**

> Aimed at creative pros, Apple's high-end desktop has always been designed to deliver as much power and flexibility as possible.

Ironically, the previous 'trash can' Mac Pro proved to be a design dead-end, and so Apple came up with this - a stainless steel and aluminium tower that's almost infinitely configurable - you can even add wheels if you want to.

If the price at the top makes you wince, that's just the start - prices rise incredibly steeply once you get beyond the standard spec, and even those wheels will cost you £400, while adding six 128GB DDR4 ECC memory cards costs £14,000. Given that you can fit everything from a 28-core Intel Xeon W processor to 8TB of SSD storage that's hardly a surprise, though.



The new Mac Pro has been designed to be as configurable as possible.



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. But without a price hike! Prices still start at just £999.** The next step model (with increased SSD storage and eight-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 eight-core CPU, but a seven-core GPU, and 256GB SSD storage. While on the step-up model, the CPU and GPU are both eight-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 base model or £600 on the eight-core GPU model.

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 is equipped 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 R
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 R



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 in November 2020 with the homegrown M1 chip.**

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.



Apple TV 4K

> From £169

> **Apple's media streamer has been around since 2007, and in April 2021 Apple unveiled the sixth generation.** Running an A12 Bionic chip and its own OS (tvOS), the latest model offers 4K high frame rate HDR. You get Apple TV+, as well as access to third-party content using apps such as BBC iPlayer. 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 JUN 2021
UPDATED OCT 2020

iPhone > From £699

> In October 2020, Apple launched the iPhone 12 family of handsets. The Pro features Apple's A14 Bionic chip, with either a 6.1-inch or 6.7-inch (Max version) Super Retina XDR all-screen OLED True Tone display, and comes in 128, 256 or 512GB storage options. The 12MP camera system incorporates Ultra Wide, Wide and Telephoto lenses with Portrait mode, plus HDR video with Dolby Vision.

The iPhone 12 and iPhone 12 mini have the same A14 Bionic processor as their pricier sibling, but come in 64, 128 and 256GB storage options. Both boast the Super Retina XDR True Tone display. The standard screen size is 6.1-inch, while the mini is 5.4-inch. These phones feature 12MP Wide and Ultra Wide cameras, but can also record HDR video with Dolby Vision. All the new iPhone 12 models connect to 5G, and feature Face ID, Apple's U1 chip and Haptic Touch.

> Choose an iPhone

	> MODEL	> KEY SPECIFICATIONS	> PRICE
ENTRY LEVEL	iPhone 12 mini (5.4in Super Retina XDR)	CAPACITY: 64GB PROCESSOR: A14 Bionic FACE ID Yes CAMERA 12MP photos (dual lens), HDR video	£699
UPGRADER	iPhone 12 (6.1in Super Retina XDR)	CAPACITY: 128GB PROCESSOR: A14 Bionic FACE ID Yes CAMERA 12MP photos (dual lens), HDR video	£849
HIGH END	iPhone 12 Pro Max (6.7in Super Retina XDR)	CAPACITY: 512GB PROCESSOR: A14 Bionic FACE ID Yes CAMERA 12MP photos (triple lens), 4K video	£1,399



EXPECTED SEPT 2021
UPDATED SEPT 2020

iPad > From £329

> In September 2020, Apple brought out the eighth-gen iPad featuring a new six-core A12 Bionic chip. The processor update allows for a Neural Engine to support image processing and Augmented Reality experiences. Built for iPadOS, 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 iPad comes in Gold, Silver and Space Grey with 32GB or 128GB options. At 490g, it is light yet the recycled aluminium enclosure is one of the most durable built by Apple.

> Choose an iPad

	> MODEL	> KEY SPECIFICATIONS	> PRICE
ENTRY LEVEL	10.2in iPad	CAPACITY 32GB PROCESSOR A12 Bionic CONNECTIVITY Wi-Fi CAMERA 8MP UNLOCKING Touch ID	£329
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 OCT 2021
UPDATED OCT 2020

iPad Air

> From £579

> There are changes aplenty for the iPad Air. The larger 10.9-inch Liquid Retina display also boasts slimmer bezels. You now get an A14 Bionic chip with Neural Engine for 40% faster performance. The device still uses Touch ID but has replaced the Lightning connector with USB-C. The device is compatible with the second-gen Apple Pencil and the Magic Keyboard with trackpad.

Apple Watch

> From £379 (Series 6)

> The world's number one smartwatch now boasts an always-on Retina display.

Along with the two size options (40 and 44mm), the Watch is available in aluminium, stainless steel, titanium. The ceramic option has now been discontinued. Along with the W3 and U1 chips, the 64-bit S6 dual-core processor promises to make the watch 20% faster than Series 5, while retaining the same 18-hour battery life.

Series 6 now boasts a blood oxygen sensor and makes the most of the new watchOS 7 features, such as Family Sharing, improved sleep and fitness tracking, and more customisable faces.



EXPECTED SEPT 2021
UPDATED SEPT 2020

AirPods Max

> From £549

> Apple's rather expensive over-ear headphones are finally here. The aluminium cups rotate independently, the knitted mesh headband helps reduce on-head pressure, and the Digital Crown helps you to control your audio with ease. More importantly, the high-fidelity audio performance is exceptional, and the H1 chip uses computational audio to assist ANC and Transparency mode. In addition, spatial audio with dynamic head tracking ensures that the headphones deliver an immersive experience.



EXPECTED DEC 2021
NEW DEC 2020

BEST BUYS... Curated picks of third-party kit >

> **DESKTOP SPEAKER**

Ruark MR1

£329.99 ruarkaudio.com



> Winner of MF357's head to head, the MR1 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 we love the chunky function/volume dial too.

> **IN-EAR EARPHONES**

M&D MW07 Plus

£279 masterdynamic.com



> Master & Dynamic's MW07 Plus offer 10 hours of listening time, and the charging case holds an additional three charges (so you get 40 hours in total). These great-sounding earbuds are IPX5 rated, so they're excellent for workouts and commuting. The marble-effect finish gives them a premium aesthetic, as does the stainless steel charging case.

> **KEYBOARD (MAC/iOS)**

Logitech MX Keys For Mac

£99.99 logitech.com



> If you spend a lot of time at your desk, you'll know how imperative the right keyboard is. The MX Keys is full size with spherically dished, smooth-touch keys. The keyboard can pair with up to three Mac or iOS devices, and you can switch between them without having to re-pair. Battery life is good and the backlight is cleverly triggered by a proximity sensor.

> **THUNDERBOLT 3 HUB**

Brydge Stone Pro Hub

£229.99 brydge.co.uk



> If you're looking for a hub that offers multiple connectivity and impressive power delivery, this could be the one for you. You can power up your MacBook, thanks to over 87W of power from the wall power supply, and you can also charge up to four extra USB devices at once (three USB-A and one USB-C). You also get a dual-purpose audio and mic mini jack port.

> **HEADPHONES**

Beats Solo Pro

£269.95 beatsbydre.com



> The latest Beats headphones pack an impressive 40-hour battery life and Active Noise Cancellation. We love the unfold to power design and sound reproduction is excellent. Powered by Apple's H1 processor, the Solo Pro also offer simple pairing, Hey Siri detection and audio sharing with iOS 13 or later.

> **WI-FI ROUTER**

Zyxel Multy U WSR30

£199 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.

> **PORTABLE SPEAKER**

Sonos Roam

£159 sonos.com



> According to Sonos, this is its smartest speaker yet. You get Bluetooth and Wi-Fi connectivity, and Alexa and Google Assistant AI. The lightweight but rugged speaker's extensive feature list includes Sound Swap - throwing sound to the nearest Sonos speaker, and Auto TruePlay - where it automatically tunes itself to the environment. It also sounds great!

> **EXTERNAL SSD**

OWC Envoy Pro FX SSD

£365.99 (1TB) owcdigital.com



> Don't let the size of this neat little SSD fool you - it's both tough and efficient. Not only is it dust- and waterproof (IP67), and drop tested to military standards, it boasts blisteringly fast read and write speeds, and the supplied cable is capable of transferring data at 5,000MB/sec over Thunderbolt. Storage capacities range from 240GB to 2TB.

> **MACBOOK BAG**

Hex Technical backpack

\$149.95 (about £110) 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 >> PHOTO EDITOR (MAC)
Luminar AI

From £59 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.

> TO-DO (MAC/iOS)
Todoist

From Free 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.

> PHOTO EDITOR (iOS)
Pixelmator

£4.99 pixelmator.com



> Pixelmator is a full-fledged layer-based photo editor, graphic design and painting app. It offers over 100

brushes, dozens of tools and 32 blending modes giving you full control, all for a really affordable price. The app works with iCloud to sync all your projects across devices including Mac. It also supports formats like PSD, PNG and JPEG, making it the best app for all your graphic needs.

> TEXT RECOGNITION (MAC)
TextSniper

£6.99 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.

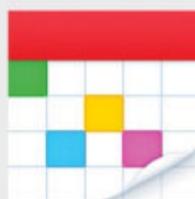
> FILE FINDER (MAC)
HoudahSpot 6

£31 houdah.com/houdahSpot



> If you find that Spotlight isn't quite the Mac super sleuth you need it to be, try HoudahSpot 6. Searches are fully

customisable and groups of criteria can be combined into logical expressions. Custom search windows can then be saved as templates, handy for common searches, and your searches can be further refined progressively. The Mail plug-in is great for drilling down through your mailboxes.

> CALENDAR & TASKS (MAC/iOS)
Fantastical 3From £3.25 per month
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.

> NOTE-TAKING (iOS)
Notability 10

£8.99 gingerlabs.com

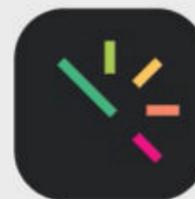


> Notability is a very flexible note-taking app. It can combine different mediums, such as

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.

> TIME TRACKING (MAC/iOS)
Tyme 3

£3.49 per month tyme-app.com



> If you need to make sure you're paid for hours/miles you put in for work, or any expenses you incur, you need this

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RANDOM APPLE MEMORY

AirPort Express

Charlotte Henry recalls how Apple entered, then exited, the competitive world of internet routers

On 7 June 2004, Apple proudly unveiled AirPort Express. It was an 802.11g mobile base station that could be plugged into the wall, providing internet connections wherever you went. It's hard to imagine now, but in 2004 'portable' internet might required all sorts of cables and power supplies – it wasn't as simple as opening up the hotspot provided by your iPhone then. Four years later, in March 2008, things improved further as Apple updated the AirPort Express, introducing the 802.11n wireless standard which it said delivered up to five times better performance than its predecessor. A second generation of the 802.11n arrived in June 2012.

As significant as the mobile internet developments were, there were also analogue and digital audio outputs in the base station. This meant that users could connect it to a stereo and use the AirTunes music networking software to wirelessly stream music from iTunes on their Mac or PC. "Users can now play their iTunes music on any stereo in their home – all without wires," commented Steve Jobs at the time of the release. From the start, multiple base stations could be bridged together, enabling music to be played across a wider area.

However, it wasn't to last. In November 2016, Bloomberg News revealed the team working on the AirPort Express and its siblings, AirPort Extreme and AirPort Time Capsule, had been disbanded. Then, in April 2018, the company confirmed to 9to5Mac that the entire AirPort line had been discontinued.

The demise of the AirPort Express wasn't really a surprise. Wireless routers were never really an industry in which Apple could be said to be a leader and, ultimately, other Apple products like the HomePod provided a better solution for playing music wirelessly. Beyond the HomePod, the legacy of the AirPort Express remains, with the Apple TV and even the Mac mini closely resembling the second-generation base station's design.



When connected to an Ethernet network, the AirPort Express base station provided wireless internet access.

ABOUT CHARLOTTE HENRY

> Charlotte Henry is a journalist and author covering media and technology. Based in London, she is the UK Associate of The Mac Observer, hosts its Media+ podcast, and has written for various other outlets. Her first book, *Not Buying It*, was published in 2019.

