iPHONE X: UPGRADE NOW!

> Issue 318 > Autumn 2017
> macformat.com > @macformat

Mac
FORMAT

YOUR NEXT iPHONE!

iPHONE X
✔ Edge-to-edge display
✔ Wireless charging
✔ Face ID & more!

Master Photos in High Sierra

How we restored an Apple classic!

MASSIVE GUIDE

iOS 11
75 essential tips & tricks for your device

NEW!
Apple Watch Series 3 & Apple TV 4K

PLUS
macOS High Sierra
Full installation guide & more!

Future
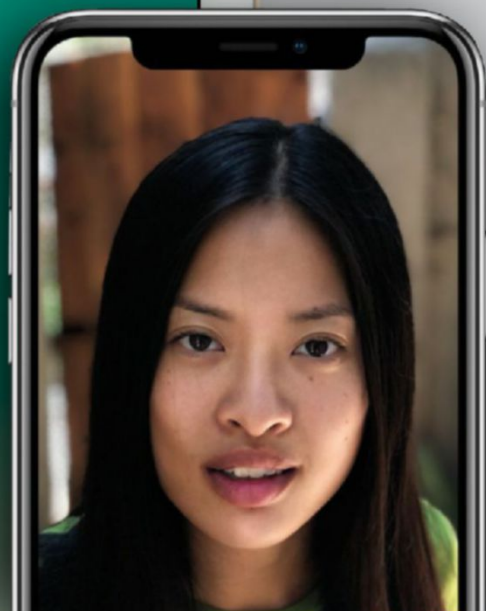
Mac | iPhone | iPad | Watch | iCloud | iTunes | Photos

Mac FORMAT PRESENTS

iOpener

Game-changing tech from the world of Apple and beyond

ORII works using bone conduction technology, much like hearing aids.

ORII

Make phone calls like a spy

If you feel like your life lacks the necessary level of James Bond coolness, ORII is for you. Simply put, it's a ring that lets you make phone calls with your finger. Pop it on and, next time you get a call, press your digit to your ear – you'll be able to hear the call as if you were holding your phone. Microphones in the ORII pick up your voice, which means you can also use Siri and dictate texts. It's quick and convenient, so there's no need to even take your iPhone our of your pocket. Sure, it's a little frivolous, but there's no denying that we want one.

> $159 (about £123) > **INCLUDES** ORII ring (charging dock and case also available)
> **WEBSITE** orii.io > **WORKS WITH** Any iPhone or iPad running iOS 9 or later

> There can't be many people who watched the latest Apple Event and didn't immediately want an iPhone X. I know I did (and an Apple Watch Series 3, too!). The iPhone X looks amazing. From the edge-to-edge Super Retina display to the wonders of Face ID and animated emojis, it looks like being a real step forward. Of course, you can't break new ground without leaving a few things behind, and it seems that the Home button and Touch ID have been thrown under the bus, but if you've loved Apple products as long as I have then you know you have to be prepared to adapt to new technology if you want to stay the course. It's no coincidence that Phil Schiller finished his section of the keynote with a quote from Walter Gretzky that Steve Jobs loved: "Skate to where the puck is going, not where it has been." Wherever Apple takes us, you can be sure that *MacFormat* will be there to help you along the way.

This issue we've also got a superb collection of tips for the new iOS 11, a guide to installing macOS High Sierra and Luis even manages to get an old Macintosh Classic working again on page 78. Enjoy the issue, and I'll see you next time for more from the wonderful world of Apple.

GRAHAM BARLOW
EDITOR-IN-CHIEF
editor@macformat.com

Meet the team

Jo Membery
Operations Editor
> Jo is looking forward to adding hilarious masks in Snapchats, not to mention playing with the iPhone X's amazing new Portrait Lighting features.

Alex Blake
Commissioning Editor
> Alex wants an Apple Watch Series 3, and he wants one now! Having 40 million songs, and the ability to make calls on his wrist is a game changer.

Paul Blachford
Art Editor
> The all-screen, edge-to-edge Super Retina display was the highlight of the Apple Event for Paul. Nothing else on the market really looks as good as the new iPhone X.

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APPLE CORE

EDITED BY **GRAHAM BARLOW** >

APPLE RUMOUR

iPhone 8 & iPhone X

Apple's latest smartphones were short on surprises, but does that matter? Not even a little bit

> In the brand-new Steve Jobs Theater at Apple Park, some of the most powerful men in the world were as giddy as fresh-faced schoolchildren. Why? They were unveiling their latest playthings: the iPhone 8 and iPhone X.

Let's start with the iPhone 8. Visually, it looks fairly similar to the iPhone 7, but with an important difference. That's its all-glass back, which enables wireless Qi charging for the first time in an iPhone. The cameras on both the iPhone 8 and 8 Plus have been improved, with 12MP rear cameras with new sensors, better dynamic range, and optical image stabilisation for both cameras on the Plus model. There's also a new Portrait Lighting mode with powerful lighting adjustment options.

But of course, everyone was waiting for the iPhone X, and it didn't disappoint. With an all-glass front and back, and a full edge-to-edge display, it's the first *proper* redesign since the iPhone 6. It has the same features of the iPhone 8 and then some, including a new Super Retina Display. With a 2436x1125 resolution, this packs in 458 pixels per inch, and its OLED display technology allows for the best, most vibrant screen in an iPhone. That high quality screen – and new front camera system – allows for Face ID, letting you unlock your phone and pay for stuff using your face. And with longer battery life, powerful internals and AR mastery, it's a big step from Apple.

The iPhone 8 boasts a Retina HD display with True Tone technology.

Apple Watch

> Ever since the Apple Watch launched, people have bemoaned its lack of cellular capabilities. Well, no longer, as you can now make calls from your Watch thanks to the new Series 3 models, all using the same phone number as you use for your iPhone.

You can now also stream Apple Music tracks directly to your Watch, and you'll hear Siri's voice for the first time on the Watch when using the virtual assistant.

On the inside, the Series 3 processor is 70% faster than its predecessor, and there's a new W2 chip for Wi-Fi and Bluetooth. New colours and bands complete the look.

EE will be the only UK network to provide cellular access to the Watch when it launches on 22 September. While the Series 3 pricing will start at $399 for the cellular model, there's no word yet on monthly call plan pricing.

Apple TV 4K

> Apple has finally decided that the world is ready for a 4K Apple TV. The new model doesn't just pack in the pixels, though; it also has support for High Dynamic Range (HDR), meaning more vibrant scenes on your TV screens.

There's a new live sports app that notifies you when your team is playing, and Apple has worked with movie studios and streaming providers to make their content available in 4K and HDR. And if you bought HD movies in the past, you can get free upgrades to their 4K versions.

Forget the messy sockets and cable spaghetti of the old days, wireless charging is finally here.

SECRET APPLE JOB ADVERT

MAN FINDS JOB POSTING HIDDEN IN CODE

> A cyber security reporter has found a secret Apple job ad by chance. Zack Whittaker was analysing data sent from iPhone apps when he noticed it was being sent to an Apple URL. He followed the link and was greeted with the message 'Hey there! You found us', along with details of an engineering job at Apple. Apple has since removed the job listing.

TIM COOK'S IN THE MONEY

APPLE CEO GETS $89.2 MILLION STOCK REWARD

> Thanks to Apple's sterling performance compared to its rivals, company CEO Tim Cook has been awarded 560,000 Apple shares, coming to a whopping $89.2 million. Apple's shares hit a record of $159.75 per share in early August, making for a rather nice payout for Cook. However, the CEO did state back in 2015 that he plans to give away most of his fortune to charity.

Speaking for itself

"Hey Siri, how do you like your new voice in iOS 11?"

Apple rarely spills the beans on its inner workings, but has changed tack by publishing a paper on how it's made Siri sound more human. The paper, with the impenetrable title 'Siri On-Device Deep Learning-Guided Unit Selection Text-to-Speech System', outlines how Apple chooses the voice actors behind Siri, and how it chops and changes their voices to make Siri say just about anything.

First, the chosen voice for the digital assistant must be one that is 'pleasant and intelligible and fits the personality of Siri'. Once one has been found, Apple records 10-20 hours of speech with the voice actor. A variety of reading material is used, from audio books and navigation instructions to witty jokes, according to the Siri team's blog. That's then spliced together using a number of clever artificial intelligence (AI) techniques in order to create all of the chatter you hear from Siri.

For iOS 11, Apple chose a new female voice for its American English accent, and made use of its own deep-learning technology to improve the tone and cadence of Siri's voice. Apple says the new voice performed far better in tests than its iOS 9 and iOS 10 equivalents.

Since December 2016, Apple has been publishing research on its AI efforts in an bid to tempt more AI experts to join the company.

Project Titan's futuristic secrets

Apple's secret car plans – now shelved – have been revealed

Project Titan, Apple's supposed self-driving car scheme, has been the worst-kept secret in Silicon Valley. Now, even more details have been leaked, thanks to a *New York Times* article.

The piece alleges that the original aim of Project Titan was to overhaul the idea of what a car should be. So the Apple Car would have spherical wheels like globes, allowing it to potentially move sideways as well as backwards and forwards, and a spherical steering wheel to give more precise control. There would also be motorised doors, plus virtual or augmented reality features for the interior displays. However, a series of disagreements led to the project stalling. There were arguments over what programming language to use for the car's software, and whether the car should be fully or semi-autonomous.

These disagreements led to project leader Steve Zadesky taking a leave of absence, Apple executive Bob Mansfield taking over, and many employees being laid off. Under Mansfield's watch, Apple has shifted focus onto autonomous software, and is allegedly testing this in a self-driving bus for Apple employees – but it's still interesting to think what might have been had Apple's original ideas come to fruition.

Apple's plans to revolutionise the car have changed considerably.
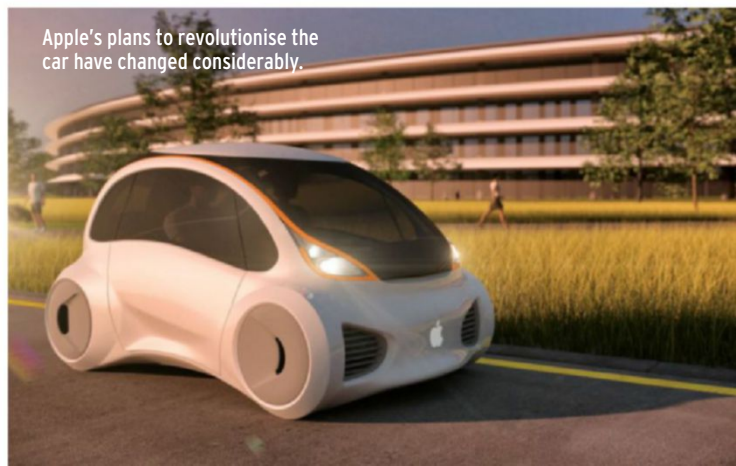
APP OF THE MONTH

[MAC APP]

Luminar Neptune £64

Fix up your photos in a flash

> **Macphun's Luminar was already a good photo app; the Neptune update makes it even better.**
With Neptune you get new filters, tools and tweaks, leading to improvements both up front and under the hood.

The most noticeable change is Neptune's Accent AI, which Macphun claims is 'the world's first AI-powered photo filter'. It's impressive, and works quickly to make adjustments big and small to your images. There's also a ton of presets that you can speedily apply if you want a ready-made fix. You can see the effects each preset will have using a handy before and after slider, so there aren't any nasty surprises.

Granted, it's not on the same high-end level as Adobe Photoshop, but it boasts over 300 tools and features. If you want to do short and simple edits to your photos with the minimum of fuss, Neptune is well worth a look.
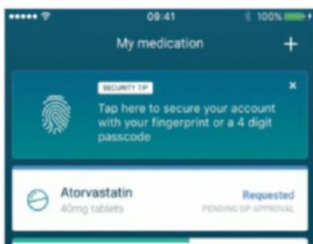

[iOS APP]
ECHO
FREE

> Echo is simple: it gets your medicines and prescriptions delivered to your door, with free postage – perfect if you can't make it to the pharmacy but still need your medication. The app has been completely rebuilt for version 3, with better reminders and updates.
Why you need it: Ideal if you can't make it to the pharmacy.
What's it best for: Reminders for when to take your tablets.

[iOS GAME]
SONGBIRDS
£1.99

> Songbirds lets you create music in an unusual, interesting way. You draw across the sky or create paths into water and the birds will follow, creating relaxing melodies as they go. It's a peaceful music app with a novel approach to creating tunes, and looks beautiful too.
Why you need it: It looks and sounds gorgeous.
What's it best for: Helping you relax with gentle music.

[iTUNES STORE]
CONCRETE AND GOLD
FOO FIGHTERS £9.99

> Based around lead singer Dave Grohl's thoughts on the future direction of America, the Foo Fighters' ninth album has all the high-energy output of their earliest work. At close to 25 years into their career, *Concrete and Gold* shows that they're still going strong.
Why you need it: Yet another solid album for the collection.
What's it best for: Rocking out like a hyperactive kid.

APPLE TV

> Our top picks of what's worth watching and playing this month

[MOVIE]
ALIEN: COVENANT
£9.99

> The sequel to 2012's *Prometheus* sees the crew of the Covenant discover what they think is a lost paradise. You know what happens next.

[PODCAST]
WELCOME TO MACINTOSH FREE

> A podcast all about Apple, the people it's influenced and those who made their mark on the world's biggest company.

[TV SHOW]
VALKYRIEN
£16.99

> After his wife is refused treatment, a doctor begins a secret hospital – and treats politicians, celebrities and terrorists.

Steve Wozniak
IN NUMBERS

We check out The Woz – innovator, entrepreneur, and co-founder of Apple
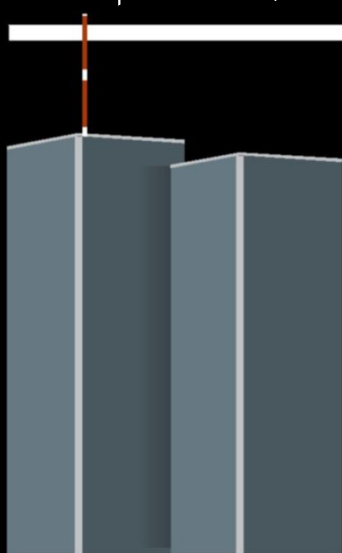
$1

The Apple II was the first computer to display digital colour graphics. It was thought that achieving this would cost thousands, but Woz did it with a $1 chip.

36

36 years ago, Wozniak crashed his private plane and suffered head injuries and short-term memory loss. He has said that playing games on an Apple II helped him regain his memory.

1973

In 1973, Wozniak started an automatic dial-a-joke service, soon getting 2,000 calls a day. He met his first wife when he personally answered her dial-a-joke call.

9/11

After 9/11, US aircraft banned people from carrying metal utensils. So Woz made himself a steel business card, letting him cut his in-flight steak how he liked it.

6:30am

Before Apple, Woz was into phone phreaking. He once called the Vatican at 6:30am, claiming to be Henry Kissinger, and almost woke the Pope.

$10,000,000

When Steve Jobs and Apple's board refused to give stock options to early employees in 1980, Wozniak offered $10 million of his own stock to Apple workers.

Mac FORMAT

INVESTIGATES

Against the clock

Tech pundits say the Apple Watch is a flop, but Apple begs to differ – so who's telling the truth? WRITTEN BY **ALEX BLAKE** >

Read almost any tech website's coverage of the Apple Watch and a familiar story emerges. It's a failure. No one wants to buy one. It was a huge mistake on Apple's part, a gamble that hasn't paid off and should simply be shelved. You get the idea. This narrative is persistent and near-universal. But is it true? We decided to take a look at the numbers to see whether the Apple Watch really is in a slump, and what can be done by Apple if it is.

It's not hard to see why people might think the Apple Watch is struggling – almost the entire wrist wearable industry is still trying to find its feet. Former giants are falling left, right and centre. In 2014, Nike abandoned its FuelBand wearable. Jawbone is going out of business. Samsung and LG have given up. Even Pebble, which more or less kicked off the entire smartwatch craze, has been bought by Fitbit after incurring huge debts. Right now, this is an industry that may be best described as 'chaotic'.

So why have these companies struggled so much in an industry that was once seen by many as a potential goldmine? Well, it may be a classic example of the Gartner hype cycle, named for the market research firm that first proposed it. The cycle describes the hype that

> It's not hard to see why people might think the Apple Watch is struggling

A vast amount of hype surrounded the Apple Watch when it was first released.

surrounds new technology. First comes the peak of inflated expectations, soon followed by the trough of disillusionment as a number of players falter and collapse. Then comes the slope of enlightenment and, eventually, the plateau of productivity. It is likely that the hype peak drew in companies that simply weren't able to compete, and have failed as a result. Apple though? That's a different story.

A different approach

In contrast to so many wearable companies that have fallen by the wayside, Apple has actually been very successful with the Watch. A lot of that is to do with the very different way Apple views fitness data, and the way it convinces people to get fit and stay that way.

Jay Blahnik, Apple's director of fitness and health, summed up Apple's approach like this: "Let's not try to make this about the most you can do, let's save that for the Workout app. This is not about the most you can do, but the least you should do every day." Put another way, if you want people to get fit, they need achievable goals.

There's a popular fitness adage that you should walk 10,000 steps a day. Blahnik disagrees: "What a lot of people don't realise is the average American does 2,500 to 3,500 steps per day," he says. "So 10,000 is four times the amount the

Each Apple Watch can be personalised with a wide range of straps.

average person does, which is why it's really hard. And when it's really hard for you to do, there is going to be burnout." Preventing that burnout by setting goals that are only a slight amount above what users have already achieved is what keeps wearers coming back.

Another interesting insight comes from Rachel Kalmar, a fellow at the Berkman Klein Center for Internet & Society at Harvard University. She explains that wearables are like flour mills. "Though some consumers have ideas of things they'd like to bake, most don't want flour, they want cookies," she says. "The same is true for data: most people don't want the data itself, they want cookies: the useful products and services that are built with this data." Now compare that to what Blahnik says about the Watch: "Typical activity trackers also measure metrics but they tend to do them in numbers. We've built our entire design around a visual. Well, what's interesting about a visual is numbers continue to get bigger. No matter how big they are, they can always be bigger. But a ring is either closed or not closed. So we've found there's a real addictive behaviour in making sure that final ring gets closed."

Fitness first

By taking away the raw numbers, Apple has been able to simplify the process of getting people fit, while at the same time being able to customise it to every user, thereby making it

Apple's 'other products'

Apple has so far refused to give out exact Watch sales figures, leading to a lot of guessing on the part of analysts. Ever since the wearable went on sale, Apple has bundled its sales numbers into the 'other products' category in its quarterly reports. This also includes products like the Apple TV, Beats headphones, AirPods and the iPod. And this category is doing well. In Apple's Q3 2017 results, the 'other products' category grew 23% year-on-year.

These are the same results where Tim Cook stated the Watch had grown 50% in sales year-on-year, suggesting that the wearable is the main driver of sales in that category. This annual increase is likely to have been spurred on by the price drop and improved features of the Apple Watch Series 2. Does this success mean that Apple will soon release solid sales figures for the Apple Watch? Only time will tell on that one.

While other fitness trackers focus on the numbers, the Apple Watch takes a more visual approach to feedback.

more approachable. Blahnik says the goal was to make fitness a 'ritual' like brushing your teeth – something you don't even think about. By focusing on the numbers, other wearables have simply scared users away.

This emphasis on fitness is likely to be one of the main reasons for the Watch's success. Think about the Apple Watch launch. You could buy the wearable at high-end fashion boutiques, but you couldn't just walk into an Apple Store and buy one. And, with its lofty £10,000 price tag, the Apple Watch Edition clearly was not aimed at fitness fanatics.

That's all changed. The second version of the Apple Watch Edition starts at a much more reasonable £1,299, minimising the push for high-end fashion acceptance. In its place is a renewed focus on fitness. The Apple Watch Series 2 added water resistance, GPS functionality and a partnership with Nike. The slogan on the Watch's online store page

The Watch's best chance of success lies in health and fitness
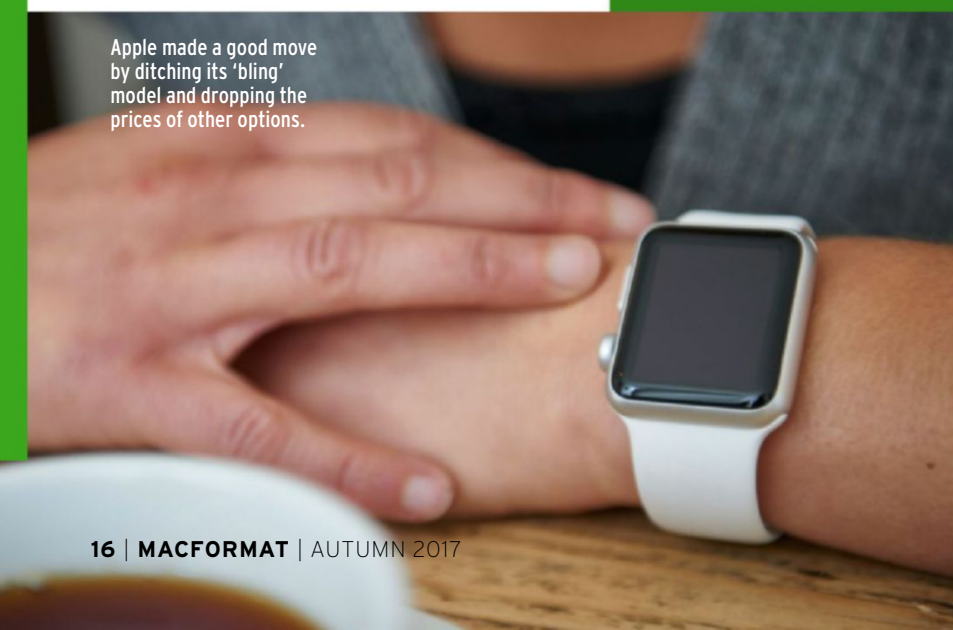
reads 'Choose the Apple Watch that moves you.' It all points to the idea that Apple has accepted that the Watch's best chance of success lies in health and fitness.

That's reflected in the Watch's sales performance. According to Strategy Analytics, Apple sold 2.8 million Apple Watches in Q2 2017, up 56% from Q2 2016. The firm has previously reported that Apple sold 13.6 million Watches in 2015, 11.6 million in 2016 and 3.5 million in Q1 2017, meaning the company has supposedly sold over 30 million units so far. Not bad for a product that tech writers are claiming has failed.

Here are some more numbers attesting to the Watch's success. Tim Cook says Watch sales figures are up 50% on last year. Market analysis firm Canalys estimates that Apple increased Watch shipments to stores by 77% year-on-year in Q1 2017. In fact, that 77% helped the entire industry grow 25%, showing how much trouble other wearable companies were in during the first quarter of 2017. And Canalys has also reported that Apple took a whopping 80% of smartwatch revenues in Q4 2016. Of course, without any solid numbers from Apple, these figures should be taken with a pinch of salt. But Tim Cook's words on soaring Watch sales go a long way, so the fact that these latest numbers agree with him suggests they're not too far off the mark.

Second-guessing

So why did the pundits get it so wrong? A large part of the blame can be laid at the feet of a report from analytics firm IDC, which

Apple made a good move by ditching its 'bling' model and dropping the prices of other options.

Apple's smartwatch rivals

If Apple is one of the leaders in the smartwatch field, what does the rest of the industry look like? As we mentioned earlier, there have been a lot of casualties, with Pebble being perhaps the most notable. The company raised a huge $10.3 million on Kickstarter in 2012, then the largest amount that had ever been raised on the website. But with missed sales targets and increasing debts, it was sold to close rival Fitbit in late 2016.

Others have suffered similar fates. At the same time as Pebble's sale to Fitbit, Motorola pulled out of the nascent smartwatch market indefinitely, with Shakil Barkat, the company's head of global product development, saying: "Wearables do not have broad enough appeal for us to continue to build on it year after year."

That leaves Apple and Samsung as two of the only companies to have had any kind of success in the smartwatch field, mirroring their smartphone dominance. Samsung beat Apple to the punch with a 4G LTE-enabled smartwatch, allowing users to make calls and reply to texts without needing to take their phone with them.

Then there's Google, which has taken a different approach to its wearable rivals. Instead of building its own hardware, it has chosen to license its wearable operating system out to traditional high-end watchmakers like Fossil, Armani and Montblanc. Google provides the platform, not the hardware.

Fitbit goes from strength to strength in the wearable market.

claimed in December 2016 that the Apple Watch's 'growth' (if you can call it that) stood at an eye-watering -71%. Yes, *minus* 71%.

Unfortunately for IDC, it got the numbers wrong. A day after the release of IDC's report, Tim Cook told Reuters that "Sales growth is off the charts" for the Apple Watch. He then continued: "In fact, during the first week of holiday shopping, our sell-through of Apple Watch was greater than any week in the product's history. And as we expected, we're on track for the best quarter ever for Apple Watch." Fighting talk, indeed.

Writing for technology website The Memo, pundit Oliver Smith recently argued that the reason the tech world misjudged the Watch is that it had a 'difficult birth', in his words. "Apple made three genuine missteps; the Watch was overpriced, too focused on apps rather than fitness and notifications, and aimed at breaking into the world of high fashion rather than mass market," he wrote in early August 2017. But by September 2016, he argued, Apple had fixed all of those issues.

Apple doesn't always get launches right. For every iPhone and Apple II, along comes a Newton MessagePad – a product that doesn't get it right at launch, and has to be refined down the line (although we doubt the Watch will be killed off as unceremoniously as the

The second generation Apple Watch added water resistance and GPS functionality.

Newton was). The point is that the Watch has found its niche as a fitness wearable, not a fashion accessory. Now that Apple seems to have realised this, the sales are flooding in.

Watch this space

So what's next for the Watch? Well, despite its apparent success, Apple still isn't the number one fitness wearable company if you include sport bands – that honour goes to Xiaomi, with Fitbit in second place and Apple not too far behind. Strategy Analytics pegs Xiaomi's wearable shipments at 3.7 million units in Q2 2017, with Fitbit at 3.4 million and Apple shipping 2.8 million. But given Tim Cook's bullish outlook on the Watch, it may not be long before it claws its way to the top spot. It should also be remembered that much of both Xiaomi and Fitbit's success comes from sales of their entry-level fitness bands, a market that Apple has thus far sought to avoid.

Apple won't be releasing a fitness band any time soon – it's quite content offering a higher-end smartwatch. That approach has served it well so far, if Tim Cook's statements are anything to go by. They also underline the risk that comes with trying to second-guess Watch sales figures when Apple keeps them well hidden. But like it or not, the Watch is here to stay – and it's doing just fine.

CONTACTS

Have your say on all things Apple!

LETTER OF THE MONTH!

Coffee overload

> So Ulysses is the latest Mac app to switch to the subscription model. The outcry against it is huge, although there are some fans applauding the company for making this decision.

From a business perspective, the subscription model makes sense: a regular cashflow, vital for survival in business.

From a user's perspective it's yet another monthly outgoing. We're regularly sold subscriptions using the 'less than the price of a coffee a month' analogy. But what many software developers seem to forget is that we're now buying many coffees a month: Adobe, Microsoft, Evernote, etc.

Indeed, my coffee consumption is so large if I'm to stick with Ulysses then another software developer will have to lose my money. There's only so much coffee a month I can afford.

The subscription model is not bad for users necessarily. It does allow developers to offer their apps via the App Store for a free trial, so users can really test them, before we shell out any money. I've lost count of how many times I've paid for an app from an App Store, only to have wasted my money because it failed to deliver what it promised.

Perhaps Apple should do more to help developers. After all, it's in their interest to have sustainable businesses developing apps for their platforms. In the meantime, I've got to review my coffee intake.

BY SIMON WHALEY

■ LETTER OF THE MONTH

Win a PlugBug World

> The author of our Letter of the Month receives a prize! Email us to be in with a chance of winning a PlugBug World from Twelve South, an iPad/iPhone charger and MacBook adaptor. Find out more at twelvesouth.com

GRAHAM SAYS... For people that don't know, Ulysses is a cross-platform (macOS and iOS), distraction-free writing tool for professional writers. The subscription model seems to be the way professional apps are going these days, and we can see why. It provides a stability that enables a business to invest in long term development and planning, and without that it's quite possible that these sort of professional-level apps (which are never going to command the number of users that more consumer-focused apps have) would cease to exist.

MISSING THE OLD SCHOOL FEATURES

> I enjoy your mag, and I completely agree with the sentiment of keeping old kit going;

Airmail 3 won our Group Test of email clients back in our September issue (#316).

I have an original MacBook Air, it actually came with the manilla envelope! It was getting a bit slow and Apple have long since abandoned it; however, I recently opened it up and replaced the tiny PATA HDD for a larger SSD. Even through that slow interface, it is superbly usable. I did the same to my 2007 iMac with the same result.

Now can we address email clients...

I have several email accounts that I want to run through one client, some of which get a lot of spam. I note that your enthusiastic endorsement of AirMail 3 (September issue, #316) did not appear to say if it included a spam filter. An email client without a good spam filter is completely useless!

BY ANDREW HARLAND

GRAHAM SAYS... Airmail does not have a dedicated spam filter of its own, therefore marking as spam relies on the server of the email account that you use. If the server learns that a certain email sender has a message marked as spam already in the spam folder, then it will work, else it will not. So, it totally depends on the server and Airmail does not filter spam as of now.

WIRELESS CHARGING?

> Can someone explain to me why there is such a fascination in getting wireless charging on everything?

At the moment, when I travel or when I charge my iPhone by the bedside each

PHOTOS APP SORT

> I have 60,000 photos in my Photos app (I used Aperture before Apple cut it). I have thousands of football photos of my local team from when I was chairman. I want to park these away but they're mixed with my other photos.

What I would like to do is sort by location. Having used the excellent Photo Duplicate Cleaner to get rid of duplicates (an external app which works along side Photos), I was hoping for a similar 'sort by location' to put pics in folders in Photos. But I can't find one, any ideas on how I can file away all these sporty snap shots?
BY MARK AMBROSE

GRAHAM SAYS... Photos in macOS actually has this feature built in, Mark. In the Albums bar on the left side of the Photos screen, choose Places

and you'll see a map showing where you took the photos. You'll then be able to zoom in to the location of your football snaps. Click on it and you'll see photos taken in that location. To

make this a permanent folder, click the + icon (top left corner) and choose to 'Add this moment to' and album. The album will now appear in the Albums area of the left-hand bar.

Gary Pearce playing for Earls Colne FC. Photo courtesy of Mark Ambrose.

night, all I need is a USB cable with a tiny Lightning connector but if we get what apparently 'everyone wants', I'll need a charging pad next to my bed that still needs a power cable and, when travelling, I'll need to carry a charging pad and a cable!

This seems like a backwards step to me. Let's face it, it's really not that difficult to plug in a Lightning cable especially since they are reversible and they come in many different lengths making it easy to use. It might be better for Apple to put more time and effort in to providing a better battery life, an iPhone with a battery that lasts more than a day would be good. Lastly, while I'm having a rant, wireless should mean NO WIRES! So many devices claim to be wireless but still need a power cable. OK, rant over. Great mag by the way!
BY DEREK THOW

GRAHAM SAYS... The answer, I would venture, Derek, is convenience. Instead of having to fumble about in the dark trying to fit a Lightning cable into your iPhone, you can just plonk it onto a device by your bedside and it starts to charge. And, if wireless charging is built into restaurant tables, then you can charge while you eat, for example. These might seem like small timesavers right now, but from small beginnings come great things.

MATT BOLTON...

YOU CAN TELL WHEN APPLE IS FIRING ON ALL CYLINDERS, BECAUSE IT STARTS SHOWING OFF

The most memorable part Apple's iPhone X event for me wasn't a product unveiling, but a bit of fun. Craig Federighi spent a bunch of time just showing off the new face-tracking Animoji feature, sometimes with his impressively elastic face (he's a natural for a reboot of *The Mask*), sometimes by just continuing his presentation, with a gigantic cartoon fox face mimicking him in a manner so fluid, I felt kind of weirded out.

This moment wasn't just memorable because of the confusing dreams I've been having since, but because it was Apple doing what it loves the most: showing off insanely advanced tech used for a completely trivial purpose, because that's how it gets used in real life most of the time, and Apple makes products for real life.

At some Apple events, you feel like it has to push features a little artificially, because it knows they're not really all that. But when things are coming together, as they are for Apple right now, the showcases are much more relaxed, because the products speak for themselves, even if that speaking is happening through an animated poop emoji.

It really felt like Apple was flexing its technical muscle at this event. The A11 Bionic chip is stupidly powerful from just a standard processor point of view (think: MacBook Pro levels of powerful), but Apple's customisation of its chips means we get features like being able to change the lighting on a person's face, or 4K 60fps video, which is basically going to look like just a window when you play it back on a TV, if Apple's encoder is as good as it says. The old "Only Apple can do this" adage was trotted out again, but it's never been more true, because it requires an intimate connection between hardware design and software aims.

Even the Face ID demo felt like showing off. Lots of other companies have done this first, but to make it secure, they try things like iris scanning, which never works very slickly, because it's working with such a narrow and complex window. Apple just strolls in and says 'Well, why didn't you scan the face *properly*?" It was the tech equivalent of the flashy swordsman getting shot unceremoniously by Indy.

(I was wrong about Apple and face recognition last issue – I woefully underestimated the level of tech sophistication it was willing to throw at the problem.)

And on top of that, you've got probably the best-looking phone screen on the planet, the Apple TV just became the movie-lover's hottest platform, the Apple Watch is now your phone (making your phone your laptop, I suppose, which seemed inevitable now I stop to think about it), and even the iPhone 8 was far more than just an afterthought. And we have HomePod and iMac Pro to come, which both look groundbreaking, while AirPods are still unsurpassed in wireless tech... just the Mac mini to fix now! Please?

The "Only Apple can do this..." line has never been more true

The iPhone X is Apple's vision for the future of phones. And that future is in November, when the X is released, as long as your future also has £1,000 in it.

The iPhone 8 looks a lot like the 7, but a new glass back is no small design change; the A11 Bionic chip is a big internal boost.

ABOUT MATT BOLTON

> Matt is the editor of Future's flagship technology magazine 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".

SPLIT VIEW

> The *MacFormat* team debates the hot Apple issues of the day, using their iPhones of course!

Paul says…

"AN 8K DISPLAY? APPLE SCREENS GO SUPER-SIZE"

Apple is working on a standalone display, and some reports say it'll have an 8K screen! 🖥️

Alex says…

I'm not sure what to make of that. 5K is still more than most people need at the moment, so 8K seems like a bit much! 😲

Well I'm sure designers will love it – I'm already getting excited. Remember that Apple said it's working on this alongside the Mac Pro, so an 8K display won't be for the mainstream.

That's true, and I can't imagine it'll be priced for the mainstream either! 💰 But there are people shooting 8K footage who would really benefit from being able to edit it on a nice big (OK, huge) 8K resolution screen. Apple is determined to win back high-end pros with the Mac Pro reboot, so putting out an 8K display doesn't seem too far-fetched.

Exactly. Just thinking about the price makes me nervous! An Apple 8K display combined with a shiny new high-end Mac Pro? Only the five richest kings of Europe will be able to afford it all! 👑

Better start counting the pennies then. But we do know one thing – whatever the pixel count, I'm sure the display will look gorgeous. Apple hasn't lost its sense of style yet. 😎

Siri…ously?

"What is your best pick-up line?"
tap to edit

'Is your name Bluetooth? Because I'm really feeling a connection.'

APPLE IN QUOTES

DAISUKE WAKABAYASHI
nytimes.com

"They studied ways to redesign a car… without a steering wheel."

Apple allegedly had some interesting ideas for its driverless car project

STEVE JOBS
apple.com

"I don't care what anyone says the rest of the day, we're giving you an offer."

What Steve Jobs said when offering former exec Scott Forstall a job

JOHN SCULLEY
rxadvance.com

"The average age of the Mac team was 22 and Steve never wanted more than 100 people working in the Mac group."

Former Apple CEO on the milieu when he joined

MATT MIESNIEKS
superventures.com

"[ARKit is] the biggest thing that's happened to the AR industry since it began."

Augmented reality expert on why Apple's ARKit is such a big deal

Win!

A home audio makeover from Acoustic Energy!

If you feel like your home audio setup is more one-hit wonder than platinum selling chart-topper, this month's competition prize will be music to your ears!

> **We've partnered with Acoustic Energy to give you two ways to get better sound around your home.** The first is the Aego BT2 Bluetooth speaker. With a classy aluminium body straight out of the Apple playbook, it'll fit right in on your desk next to your Mac.

It comes with Bluetooth 4.2 aptX Low Latency for stellar audio quality, and its powerful battery will keep the music playing for up to 36 hours.

There are some nifty extras too, like USB iPhone charging and even a microphone so you can make hands-free calls. That all makes it a great little speaker packed with features.

We're also giving away an Aego Sound3ar from Acoustic Energy. This is perfect for overhauling your sound in a big way, whether that's on your TV or sitting on your desk with your iMac.

The Sound3ar combines a slimline, elegant soundbar with the powerful, booming subwoofer from Acoustic Energy's Aego^3 line, giving you the ideal way to bring out the sound wherever you want to hear it.

So whether you want to enjoy the latest blockbuster in your front room, or take your Mac's audio output to the next level, the Sound3ar is the perfect way to do it.

> **THE QUESTION**
We've got one BT2 and one Sound3ar to give away. For your chance to win, simply answer this question:

How long is the Acoustic Energy BT2's battery life, in hours?
A) 24
B) 36
C) 60

For more information about the BT2 and Sound3ar speakers, and Acoustic Energy's full range of speakers, sound systems and other audio products, head over to **acoustic-energy.co.uk**

HOW TO ENTER...

> To enter, you can visit our website at **bit.ly/MacAego**.
> For full terms and conditions, go to **bit.ly/MacAego**. 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 Publishing Limited and carefully selected third parties.
> This competition closes on **23 October 2017**. Over 18, GB residents only.

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APPLE HOME

EDITED BY **CLIFF JOSEPH** >

LIVE SMARTER

The smart home is
here – live the Apple
dream today!

Apple says that it wants to 'reinvent home music' with its new HomePod speaker – and its innovative multi-room features could do just that

Apple was as modest as ever when it announced its new HomePod speaker back in June. ''We want to reinvent home music,'' said CEO Tim Cook – which is quite a boast when the big names of the hi-fi industry have almost a century worth of experience designing speakers tucked under their collective belts. Cook has given a number of interviews where he talks about the HomePod's excellent sound quality, and it's certainly true that the hardware design of this compact little speaker looks very impressive (see p25). And, of course, the HomePod is a 'smart' speaker too, with the ability to use Siri voice commands to control your lights, heating and other smart household appliances. However, Apple is 'reinventing' home music in another way too, since it's introducing some genuinely innovative technology for multi-room speaker systems that even leading companies, such as Sonos, can't currently match.

**Available in December, the Apple HomePod
is a next-generation multi-room speaker
that promises superb sound quality, smart
home control and several innovative features,
including AirPlay 2.**

HomePod &
multi-room
audio

It looks good, sounds good, and can control your smart devices – but the HomePod has some other audio tech tricks up its sleeve too

What is the A8 processor?

> The A8 chip was originally designed by Apple for the iPhone 6. It's a dual-core chip containing two billion transistors running at 1.1GHz, so it's a pretty powerful processor. It acts as the 'brain' of the HomePod, allowing it to fine-tune the sound to suit your room, as well as listening out for your Siri voice commands.

Can I use my old AirPlay speakers?

> Some manufacturers have said they will issue software updates for their existing AirPlay speakers to make them compatible with AirPlay 2, although models that don't get updated will still work with AirPlay.

When Apple announced the HomePod back in June, it also mentioned that the speaker would include both the iOS HomeKit software for home automation, and the AirPlay software that is built into Macs and iOS devices that enables them to stream music via Wi-Fi over your home network. More importantly, both HomeKit and AirPlay are being updated as part of iOS 11, which will be launched just ahead of the HomePod. These updates will allow HomeKit and the new AirPlay 2 to work together for the first time.

B&O's BeoPlay range includes a number of AirPlay-ready speakers, many of which can be upgraded to AirPlay 2.

Super-smart speaker tech

The HomePod stands just 172mm tall, yet manages to squeeze in seven high frequency tweeters, which are arranged in a circle around its base. The top part of the speaker holds a large, upward-facing woofer for lower frequencies.

In between are six separate microphones that enable the HomePod to monitor the sound in the room around it. The A8 processor inside the HomePod can analyse that sound and work out both how big the room is, and where the speaker is positioned. It can then configure the seven tweeters as a 'beamforming array' that adjusts the sound to suit the room. If the HomePod is sitting in the centre of the room it will spread the sound through 360-degrees. Or, if it's tucked into a corner, it will turn the sound into beams that fire away from the walls.

Since its a 'smart speaker' the HomePod also uses Siri and HomeKit, so you can not only control what's playing, but your smart home accessories too.

The full details are still under wraps, but if you have a speaker that works with AirPlay 2 – and this can be any AirPlay 2 speaker from other manufacturers, as well as Apple's own HomePod – then you'll be able to control the speaker using the Home app on your iPhone or iPad. And, at the same time, AirPlay 2 will be able to use the 'rooms' feature in the Home app to stream music to multiple speakers located in different rooms.

Streaming sounds

This is kind of a big deal. There are plenty of companies that already produce their own multi-room speaker systems, including well-known names such as Sonos, Bose and Libratone (whose Zipp won our Best On Test award back in 2016). The trouble with these speakers is that they all work differently, and use different networking technologies and apps to connect multiple speakers that are located in different rooms. This means you have to commit to buying your entire multi-room speaker system from just one manufacturer, since their speakers won't be able to work with speakers made by others. You're also limited by the apps that each manufacturer provides for its speaker systems. Most of those apps will work with streaming services such as Spotify and Tidal, but few of them currently work with Apple Music, so your choice of multi-room system will also depend on which streaming services you like to use.

But, according to Apple, that will all change with AirPlay 2. The updated Home app in iOS 11 will be able to stream music to any speaker that works with AirPlay 2. This means that you can now create your own 'off the shelf' multi-room audio system using different speakers from a variety of manufacturers (as long as they all support AirPlay 2). So you could have Bang & Olusen's over-the-top A9 as your main speaker in the living room, Apple's HomePod in the bedroom to control the lights and heating, and maybe a portable Libratone Zipp Mini that can double up as your holiday travel speaker as well.

Adding AirPlay support to a speaker also means you're no longer reliant on the often rather clunky apps that the manufacturers provide. As we've mentioned, the apps provided with most multi-room speakers don't work with the Apple Music service, but speakers that support AirPlay or AirPlay 2 will enable you to stream music or audio from any app that you have on your iPhone, iPad or Mac, without having to rely on a dedicated app provided by the manufacturer.
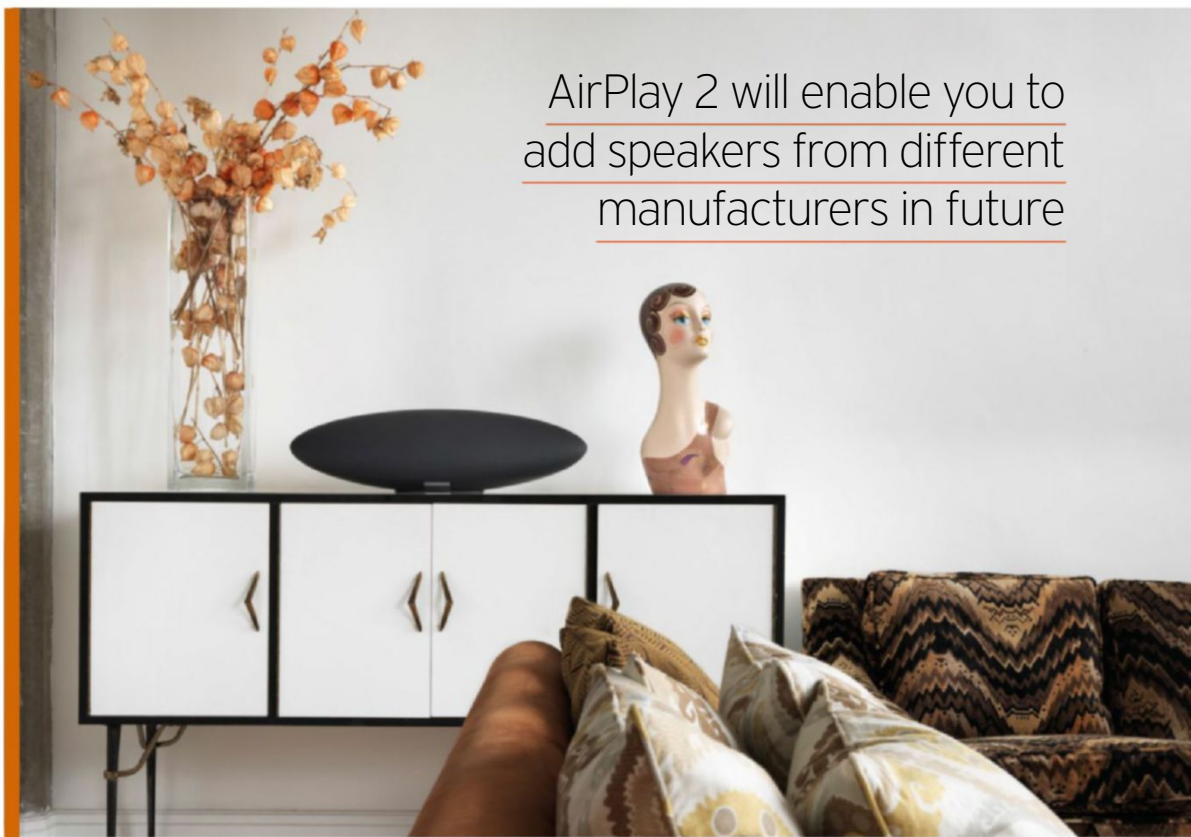
AirPlay 2 will enable you to add speakers from different manufacturers in future

Can I use other loudspeakers?

> There are a number of ways of adding AirPlay support to non-AirPlay speakers. D-Link's Music Everywhere can be found online for around £40, although it only supports AirPlay rather than AirPlay 2. Apple's AirPort Express currently works with AirPlay as well, but Apple hasn't yet said if it will update the AirPort Express for AirPlay 2 – so you might need to use the latest Apple TV instead.

What's that about the Apple TV?

> The Apple TV can already work with HomeKit, so if you just want to control your HomeKit lights and other devices then you don't need to spend £350(ish) on the HomePod. The latest fourth-generation Apple TV will also work with AirPlay 2 – so any non-AirPlay speakers that are connected to your TV should be able to benefit from the versatile audio capabilities of AirPlay 2.

Bowers & Wilkins' Zeppelin Wireless is one of our favourite AirPlay speakers – it's easy to use and sounds fantastic too.

AirPlay audio

Speakers that support AirPlay do tend to be more expensive than their Bluetooth equivalents, but they're also more versatile – and offer better sound quality too – so it's worth spending some money on at least one good AirPlay speaker that you can use as your main system at home. And the versatility of AirPlay 2 will enable you to add other speakers from different manufacturers in future.

There are some pretty good AirPlay speakers already available, starting at just £169 for Libratone's Zipp Mini, or £249 for the full-size Zipp. There's a bit of a cluster around the £500 mark, with models such as the sleek Zeppelin Wireless from Bowers & Wilkins, and the M5 from Bang & Olufsen (which has a cylindrical design very similar to the HomePod). And if you're feeling flush you could spend well over £1,000 on Devialet's Phantom speaker, which looks like something out of

The Devialet Phantom is a gorgeous, but expensive, AirPlay speaker.

Star Wars, and boasts 4500W of output that could do as much damage as a Death Star.

Other big name which have announced plans for new AirPlay speakers since the launch of the HomePod include Bose, Bowers & Wilkins and the Apple-owned Beats. Additionally, some existing speakers that use the original AirPlay (introduced in 2010) may also work with AirPlay 2 – or may be updated by their manufacturers so they do. However, since that's unlikely to be the case for every speaker model available out there, it's worth doing some research when shopping around to make sure any AirPlay speaker you buy will be compatible in future – we'll keep you up to date on when AirPlay 2 arrives with iOS 11.

So the HomePod really is a landmark product. Not only does it promise excellent sound quality, and voice control technology that will compete with the Amazon Echo, it also looks like it could completely transform the market for multi-room audio speaker systems in a way that no other manufacturer can.

The AirPlay-compatible Libratone Zipp Mini costs around £169.

FIVE OF THE BEST
AirPlay speakers and accessories >

Apple HomePod
$349 (£TBA)
apple.com/uk/music
There's a lot riding on the HomePod; it has to sound great and be smart enough to challenge the Amazon Echo for control of your smart home. It's also Apple's first foray into the multi-room audio market, thanks to the new features of AirPlay 2.

B&O BeoPlay M5
£529
beoplay.com
Bang & Olufsen has a number of AirPlay speakers, and has said that most of them can be updated to use AirPlay 2. The M5 is relatively expensive, but has a second woofer to boost the bass, as well as a powerful 130W output.

B&W Zeppelin Wireless £499
bowers-wilkins.co.uk
B&W's Zeppelin was one of the first, and best, AirPlay speakers. Sadly, the current model, the Zeppelin Wireless, can't be updated for AirPlay 2, although it still sounds fantastic. B&W is planning a new model with AirPlay 2 for later this year.

D-Link Music Everywhere £48
dlink.com/uk
It's been around a while, and isn't compatible with AirPlay 2, but D-Link's Music Everywhere adaptor is an affordable way to add AirPlay Wi-Fi connectivity to existing wired speakers. Even basic AirPlay works better than Bluetooth.

Libratone Zipp Mini From £169
libratone.com
With prices starting at just £169, the portable Zipp Mini is the most affordable AirPlay speaker currently available, and Libratone has said that it will provide a software update that will enable both the Zipp Mini and the larger Zipp (£249) to work with AirPlay 2.

iOS 11

75 essential tips & tricks for the next iOS

WRITTEN BY ALAN STONEBRIDGE

The next-gen operating system for your iPhone and iPad is here, and it's packed full of features that will transform your devices and your productivity. We show you how to make the most of the changes, both big and small...

I t's that time of year when Apple gives us all a special treat: a major update to the iPhone and iPad's operating system. One of the biggest features is, without a doubt, the revamped Control Centre – as well as an eye-catching fresh look, it has a lot of new controls, and gives you the ability to rearrange many of them to your exact liking.

This update is the biggest one for the iPad in years, where major improvements include the ability to drag and drop things between apps, and a Dock that can hold more icons and be used even while you're in an app. There's even more capable multitasking potential, with up to four apps on screen at once.

There are many more improvements that work on iPhone as well as iPad, of course, including the ability to annotate documents and screenshots, new creative tools for photos and videos, a new file manager that works with iCloud Drive and other storage options, and support for tagging documents so you can find them easily later on. Plus, the App Store has a new design that makes finding apps fresh and exciting again. It's a real game-changer.

You'll find many tips and techniques here that will boost your productivity and make your iPhone and iPad more enjoyable than ever. Not yet upgraded? We think you soon will. Here's 75 reasons why.

Customise
Control Centre

A look at what functions you can add to the redesigned Control Centre – and how you can tweak its appearance

iOS 11 consolidates all of the items in Control Centre into a single page, rather than expecting you to swipe left or right between general, media playback, and HomeKit controls. Because it makes things much faster to access, it's one of our favourite changes in this year's upgrade.

At a glance, you might think some controls have been removed in iOS 11. There's no sign of AirDrop, for example. The key to getting the most from Control Centre is to remember that you can apply a long press (or a firm one on devices with

3D Touch) to many of the individual or groups of controls to reveal additional features, or sometimes contextual settings.

Aside from it being better structured and quicker to navigate, there's a long list of new controls you can add to Control Centre. Plus, while some of the items on the panel can't be rearranged or removed, you're given some choice over the order in which items you add appear. If you add a lot of extras, Control Centre scrolls vertically by a small amount, but it's still quicker to get around than before.

1 BRIGHTNESS AND VOLUME

Slide a finger up or down these controls to adjust their levels. Hold a finger on one to open a larger version and make finer adjustments. For brightness, this reveals Night Shift and True Tone controls, if your device supports them.
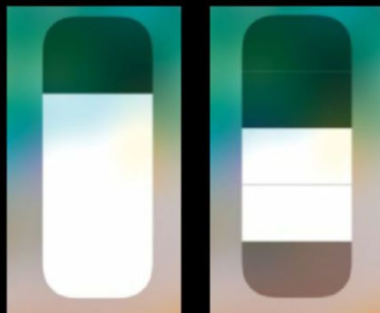
2 SLIDER TYPES

Some controls, such as the flashlight, use a slider with notched levels. On iPhone 7 and 7 Plus, you can feel your way between the discrete levels if you haven't disabled Settings > Sounds & Haptics > System Haptics.

3 AUDIO CONTROLS

This group contains the basic playback controls for music and video. You can press it to reveal a precise playback position slider and an icon to choose which headphones or speaker receives the audio you're playing. If the latter of those is all you want, just tap the pulsing icon at the top right of the audio controls group to skip the intermediate level and go straight to the list of available outputs.

4 CONNECTIVITY

You can press the connectivity group to confirm which Wi-Fi network you're using, to alter AirDrop's setting, and – if your carrier allows tethering – a toggle for Personal Hotspot.

6 AUDIO CONTROLS
You can jump straight to output selection from the top level of Control Centre, but you might press the audio group to skim more precisely, which is great for podcasts.
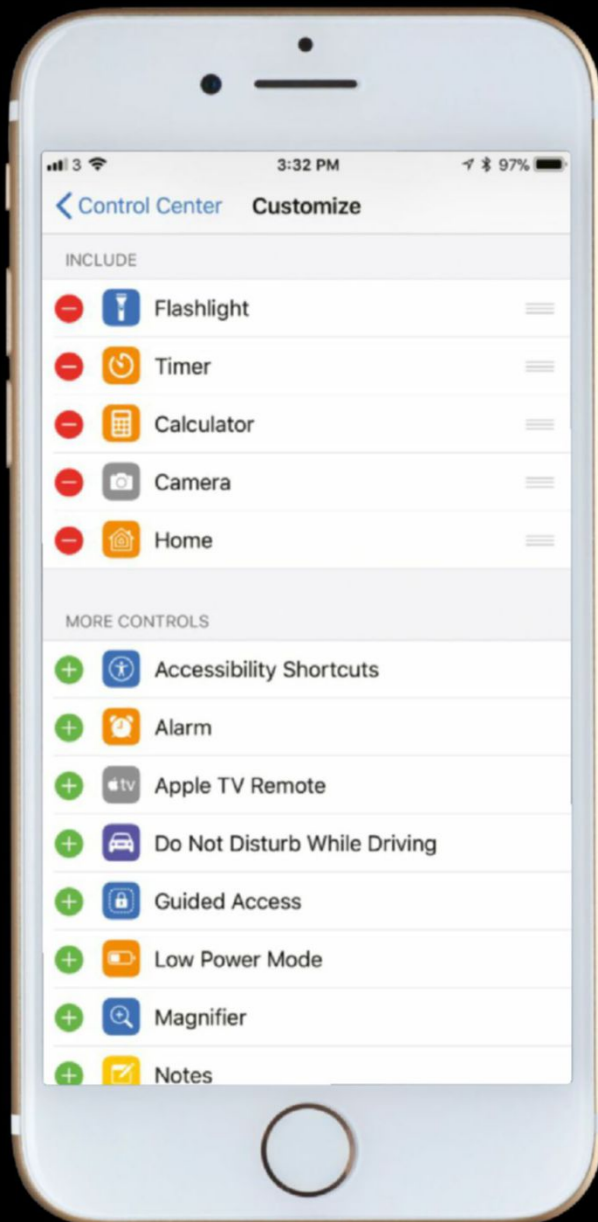
5 CONTROLS
There are more items available for Control Centre than it initially displays. In Settings > Control Centre, under More Controls, tap + next to an item to add it. Under Include at the top of the page, drag the handles on the right to move around the extra items; you can open Control Centre while here to check you're happy with their arrangement in it.

All the new controls...

1 LOW POWER MODE (iPHONE)
Tap to shut down certain functions – see Settings > Battery – and slow the rate of power consumption.

2 DO NOT DISTURB WHILE DRIVING (iPHONE)
This feature for driving more safely normally kicks in automatically, but this starts it manually.

3 VOICE MEMOS (iPHONE)
Tap this to go to the Voice Memos app, or hold it for options to start a recording or play back the last one.

4 WALLET (iPHONE)
Tap to open Wallet to use Apple Pay or another card there. Hold it to check your last transaction.

5 APPLE TV REMOTE
This opens a built-in remote control, with a menu to choose an Apple TV, plus a Siri button for tvOS.

6 ACCESSIBILITY SHORTCUTS
This opens a panel containing shortcuts to various accessibility features that might be useful or necessary.

7 MAGNIFIER
Tap to open the Magnifier mode added in iOS 10, without you having to triple-click the Home button.

8 GUIDED ACCESS
This takes you to Settings > General > Accessibility > Guided Access so you can configure this much-needed parental control and lock your child into one application and restrict capabilities.

9 TEXT SIZE
This opens a slider which adjusts the text size in apps that support iOS's Dynamic Text resizing feature.

10 NOTES
Tap to create or append a note, depending on your settings. Hold to start one of the various kinds of note.

11 SCREEN RECORDING
Tap to record your device's screen output. After a short countdown, the top bar turns red. Tap this control again or the bar to save to the Videos album in Photos.

12 ALARM, STOPWATCH & TIMER
Tapping takes you to the relevant tab in Clock. As in iOS 10, you can hold/press Timer to reveal presets.

Multitask on your iPad

Your iPad is becoming more and more like your Mac – just take a look at these powerful new multitasking tools

The way you work with two apps side-by-side has changed for the better in iOS 11, which means learning some new tricks to get things where you want them. Don't worry though, that's where we come in.

You can stash more apps and folders in the Dock now, in the area left of its dividing line – much like you can on your Mac already. To the right you'll see up to three other app icons: those you've recently used; which Siri thinks you might need; or to which one of your nearby devices can hand off a task. These can be hidden using Settings > General > Multitasking & Dock > Show Suggested and Recent Apps if you prefer.

The Dock can be called up at anytime with a short swipe from the bottom of the screen. A longer swipe opens the app switcher and Control Centre. These are vital to the techniques shown here. Let's get started with improving multitasking.
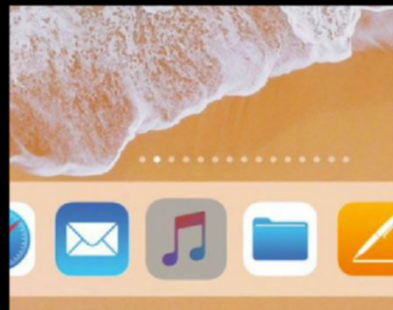
1 DRAG APP ICONS
Dragging app icons is a fundamental part of multitasking on the iPad in iOS 11, which means there are some changes to timings and visual cues. When you hold a finger on an app's icon, the icon soon grows in size; that's your cue to start dragging. On the Home screen, holding an icon for even longer will set them all jiggling so you can delete apps, as before. Thankfully, the delay before this kicks in is long enough to comfortably accommodate the faster drag and drop behaviour.
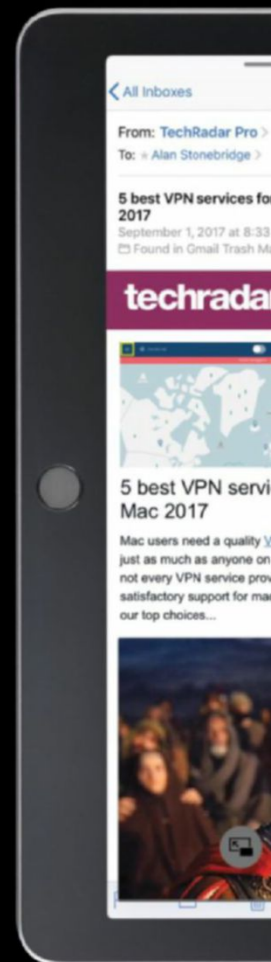
HOW TO Use Slide Over

2 OPEN SLIDE OVER
With one app already open, swipe up from the screen's bottom edge to reveal the Dock, then hold a finger on an icon there. When the icon grows a little, drag it up out of the Dock; a large panel will expand out of the icon. Let go and the app will appear in a floating window over the right side of the screen.

5 TAKE A PEEK BEHIND
To tinker with the controls behind Slide Over's window, drag left on the handle and hold the window just out of the way. While holding it in place, you can interact with things that were just behind it. When you're done, drag a little toward the window's starting point and let go.

3 SLIDE OVER TO THE LEFT
Slide Over is not confined to the right side of the screen. Flick left on the handle (the horizontal bar) at the top of it to push the window over to the left side. This comes in very helpful when you need to work with something that's underneath the window but keep the window around for reference.

6 SLIDE OVER STICKS AROUND
An app that's open in Slide Over will disappear if you switch to another main app. It's just off the screen's right edge; swipe inward to bring it back. To use a Slide Over app's full interface, open it from the Home screen; its window will return when you go to another app.

4 TEMPORARILY HIDE IT
Alternatively, flick the handle toward the right to tuck the window off that side of the screen. This doesn't close the Slide Over window though, it just hides it temporarily off that side. Swipe inward from the right edge to bring it back. Swiping further inward brings the window back and to the left side in one move.

7 EXIT SLIDE OVER
You can leave Slide Over's window hidden off the edge of the screen, but if you then tap its Dock icon while using another app it'll slide back into view. To properly close Slide Over, switch from it to Split View (see tip 12 opposite) and then drag the divider to a screen edge.

## > Other options

14 THE APP SWITCHER
Drag an app icon, double-click the Home button, or swipe four fingers up to open the switcher. Hold the icon over a workspace till it opens, then drop the icon into Slide Over or Split View.

15 SPOTLIGHT ON KEYBOARDS
If your keyboard has a Spotlight key, press it, search for an app's name, drag the app's icon from the results, and then drop it into Slide Over or Split View.

16 TELL SIRI TO OPEN AN APP FOR YOU
While dragging an app icon around, open Siri using the Home button or "Hey Siri" and tell it to open another app by name.
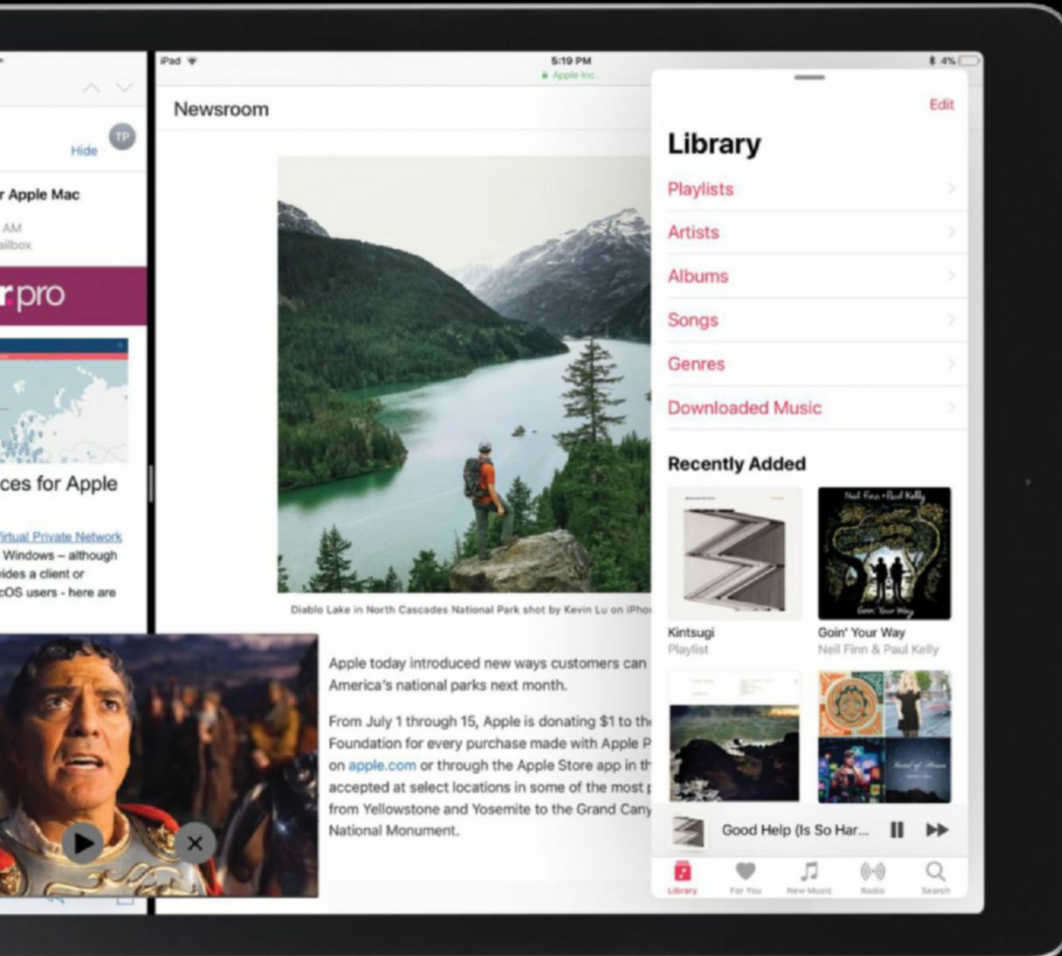
HOW TO Use Split View

8 ENTER SPLIT VIEW
With a Split View-compatible app already open, drag another's icon from the Dock to the left or right edge of the screen. The first app will shrink a little; let go and the second one will snap into position, filling a quarter of the screen's width. As in iOS 10, drag the handle on the divider to adjust the split.

11 SWAP IN A NEW APPLICATION
Pick up an app's icon from the Dock or Home screen, then open the app switcher, tap the preview of the two apps that are already in Split View, drag the icon over the app you want to swap out so its portion of the screen goes dim, then let go of the icon.

9 APPS OUTSIDE THE DOCK
To add an app to Split View (or Slide Over) that's not in the Dock, find it on the Home screen and start to drag it, keeping it held. While doing that, tap the icon of the second app you want to work in, or get to it through the app switcher, and use an earlier method to drop the first app into Slide Over or Split View.

12 TOGGLE BETWEEN MODES
There's a handle above the right app in a 50:50 split, or above whichever app is allocated less space; use this to switch either application's mode. Dragging up or down from the handle toggles the app below between part of the Split View and a movable window on top of another app.

10 SIRI APP SUGGESTIONS
The method from the previous tip also works with app icons in Spotlight's Siri App Suggestions widget – that's the Spotlight entered by swiping downward on the Home screen. You can't do this with the eponymous widget in the Today view, because you can't open the Dock or the app switcher from there.

13 USE THREE/FOUR APPS
With two apps open in Split View, open a third in Slide Over – drop it over the dividing line to avoid replacing one of the others. The fourth can be a video from an app that supports iOS's Picture in Picture mode; like Slide Over, you can tuck it off the screen's edge to gain some extra space.

> Do things faster

Drag and drop, which you've used on the Mac for years, has finally made its way to iOS as a system-wide feature. Apps need to be updated to support it, so your favourites may take a while to catch up. You've already seen how it's used for multitasking on iPad, and there are many other places where it comes in useful. Drag and drop makes a world of difference to how efficiently you can get things done on iPad. You can drag images, files, or selected text, and even reminders (which paste as text), and contacts (which paste in vCard format) between different applications.

Though drag and drop is more limited on iPhone – whatever you drag is abandoned if you try to switch apps – the technique works within individual apps and on the Home screen, making certain tasks faster on your phone, too. Here are some of our favourite ways to use drag and drop in iOS.

1 ONLINE RESEARCH
Say you have Safari and Notes open together in Split View or Slide Over. Hold your finger on a link in Safari and it'll lift 'off' the page. Drag it over to Notes so the insertion point is where you want to add the link, then let go – much faster than the Share sheet you're used to.

2 ADD PHOTOS TO AN ALBUM
In Photos, start dragging a picture, then tap others to pick them up too. They can even be from different albums or Memories. While holding them, use another digit to browse to the album you want to add them to, then let go of them.

3 LOCATIONS IN MAPS
Hold on your location's marker, a dropped pin, a point of interest, or a recent location in the panel and drag and drop it into an email, message, or note. Rich objects such as map locations, which don't paste as text, can be dragged again from where you drop them.

4 HOME SCREEN
Hold on an app icon to make them all jiggle, then drag it a short way. Tap more icons to add to your selection, then drag and drop them in a folder or another Home screen page. They appear in reverse order of pickup, so tap backward from Z to drop in order from A to Z.

Manage your documents in Files

iOS has a new file management system and you're going to love how simple it is to use

Files isn't just the iCloud Drive app renamed, though it is how you access that service in iOS 11. It's also a means to access other storage on your device, such as Dropbox, or storage on a macOS Server, and it works a lot like Finder on the Mac. Storage apps released before iOS 11 work with it, but appear in a small window on iPad rather than using all of the right pane – be sure to check for updates in the App Store!

1 THE BROWSE TAB
Each section of this tab's sidebar can be collapsed by tapping its headline. The right pane browses whatever you tapped last in the sidebar. Swipe beyond the top items in it to: create a folder; sort by name, date modified, size, or tags; or toggle between icon and list views.

2 STORAGE LOCATIONS
Tap Edit at the top of the sidebar to choose which locations are listed. iCloud Drive's probably there already, and you can enable others and rearrange them.

3 RECENTLY DELETED
This is a quick and effortless way to recover items for a short time after you remove them from iCloud Drive. Beware that even if a third-party provider's app is updated to use Files' features, items on its storage may be deleted immediately.
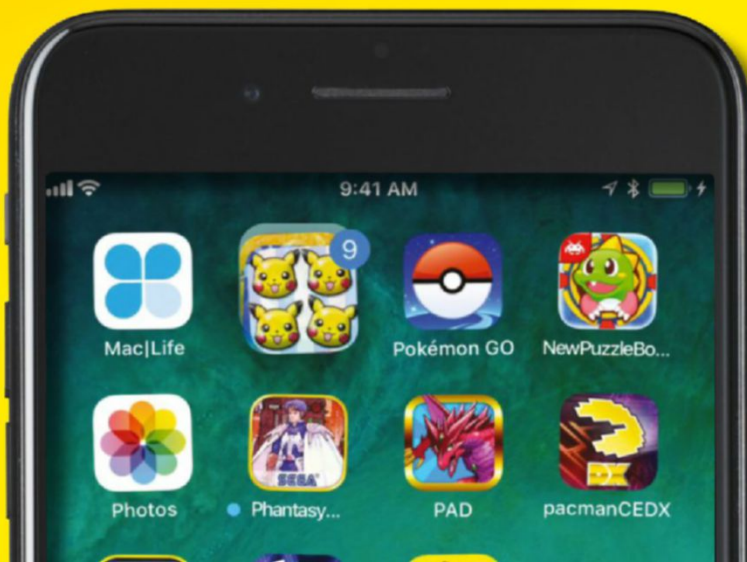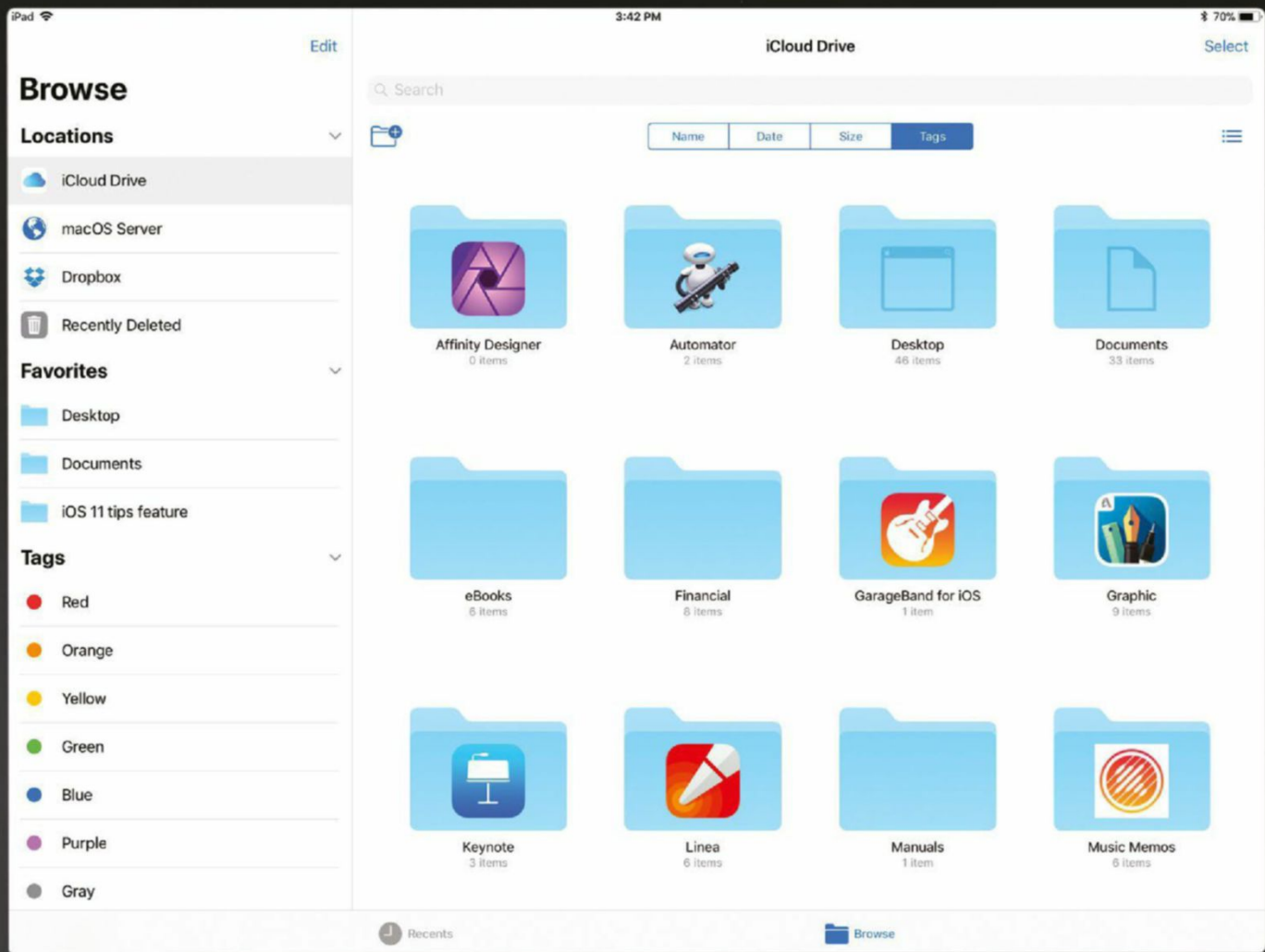
4 RECOVER A FILE
In the Recently Deleted folder, hold a finger on an item – very lightly on an iPhone with 3D Touch compatibility – only till its icon grows. Let go and a bar appears with options to recover the item to its original location or delete it for good. You can also drag and drop items to recover to a different place.

5 PIN FAVOURITE FOLDERS
Momentarily hold your finger on a folder, then tap Favourite in the options bar that appears to create a shortcut to it. Tap Edit to reorder or remove items, or use drag and drop to rearrange on iPad.

6 DO THINGS WITH FILES
To share, duplicate, move, or delete items, tap Select, tap them, and then an option in the bar at the screen's bottom. Moving or deleting files can also be done by starting to drag them, browsing to a folder, and letting go. Or, drop them on a favourite/Recently Deleted in the sidebar.

7 SHARE FILES
Tap Select, on one or more files, then the Share icon (iPhone) or the Share option (in the bottom bar on iPad). Or, hold a finger on a file for a moment, then tap Share.

8 TAG A FILE OR FOLDER
In a file or folder's options bar, tap Tags to reveal existing tags or to make a new one. Assign one or more, then tap outside the panel to close it down. Up to three tag colours are shown next to an item's name; to see all of an item's assigned tags, tap Info in its options bar.

9 QUICKLY SELECT ALL OR MOST
Tap Select, then Select All. Next, tap items you don't want selected to clear each one's check mark, then drag any of the rest to pick up all of them.

10 THE RECENTS TAB
The first group here contains files you've used recently. It's followed by files you're collaborating on with others. Past that are groups for tags you've used.

11 GET FAST ACCESS TO RECENT FILES
Hold your finger on Files' Home screen icon (or press firmly on an iPhone with 3D Touch) for a widget of recently used files. Though widgets like this are normally only available on iPhones with 3D Touch, this one's available on iPad.

12 TODAY VIEW WIDGET
You can also add a recent files widget to the Today view. Swipe left from the first Home screen, scroll to the bottom, tap Edit, then tap the + next to Files under More Widgets.

Get creative with Camera and Photos

iOS 11 comes with new settings to tweak, along with a built-in QR scanner and improved colour filter options

1 CAMERA FILE FORMATS
The iPhone 7 and iPhone 7 Plus take photos and videos in the new and very efficient HEIF and HEVC formats. In Settings > Photos, Transfer to Mac or PC is usually set to Automatic, which tells iOS to work out whether to transfer in these new or older (JPEG and H.264) formats. You might pick Keep Originals if you're transferring media to your computer purely for archival purposes. If an app or part of your workflow doesn't work with the new formats, force iOS to record in JPEG/H.264. In Settings > Camera > Formats, tap Most Compatible.

2 CELLULAR DATA USAGE
In Settings > Photos, you can turn off the Cellular Data option to stop iCloud Photo Library updates using your limited data allowance. If you have a generous quota, you might leave this on, in which case you may also want to enable Unlimited Updates.

3 SCAN QR CODES
There's now a QR code scanner built in to iOS. If Settings > Camera > Scan QR Codes is enabled, and Camera is in its Photo or Square mode, you only have to point the rear camera at a QR code. You'll instantly know when a QR code has been detected, as a banner appears at the top of the screen, describing what the code contains and what'll happen when you tap the banner. Drag down on the banner if you want more info about the code's contents before acting on it.

4 IMPROVED COLOUR FILTERS
Apple has changed the range of colour filters you can apply when taking or editing a photo. In Camera, filters are now shown in a scrolling strip below a persistent preview of whichever filter you tap on the strip. They're organised in three groups of three: Vivid, Vivid Warm, and Vivid Cool; Dramatic, also with vivid and cool types; and Mono, Silvertone, and Noir.
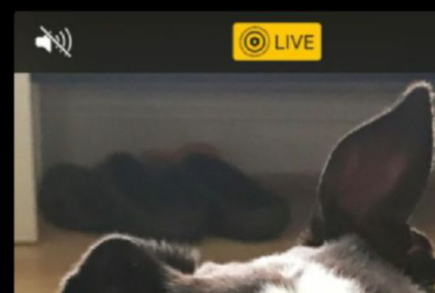
HOW TO Do more with Live Photos
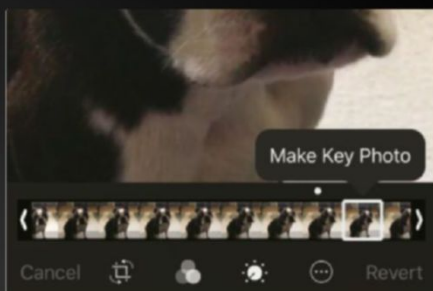
5 CHANGE THE KEY PHOTO
Find a Live Photo in your library and tap Edit. On the strip of frames below, drag the white rectangle, raise your finger, then tap Make Key Photo.
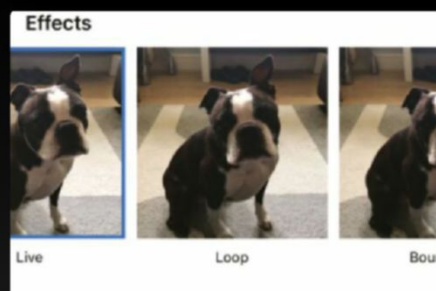
6 LIVE PHOTO EFFECTS
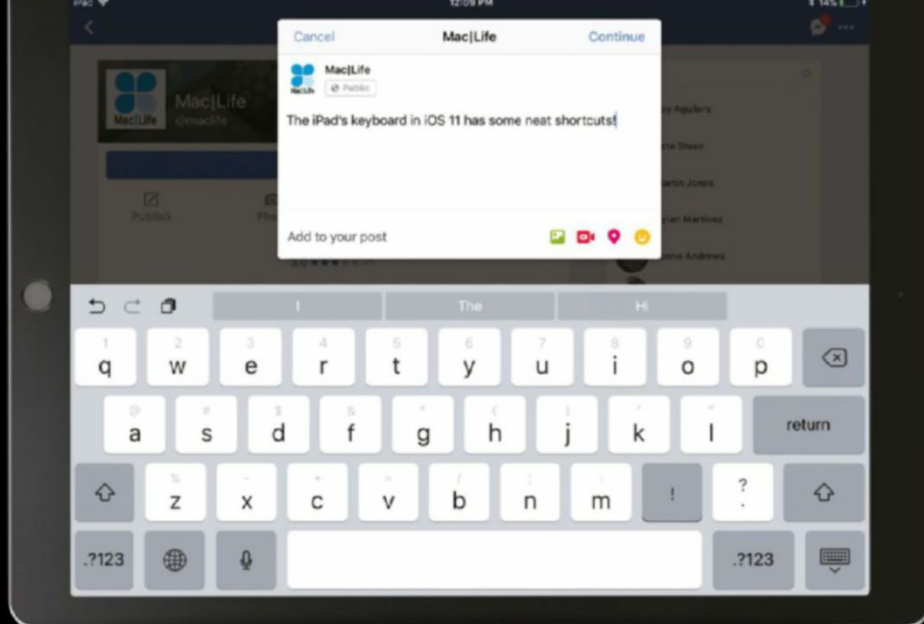Find a Live Photo, but don't tap Edit: swipe up to reveal Loop, Bounce, and Long Exposure effects. Tap one and your device does all the hard work.

7 DISABLE AUDIO OR TRIM
Edit a Live Photo, then tap the speaker (top left) to disable its audio. Drag the arrows at the outer edges of the timeline (bottom) to trim frames.

> Keyboard improvements

1 QUICKTYPE IS EVEN QUICKER

When using the on-screen keyboard on an iPad, you may notice secondary characters in grey on many keys. To type one of those, rather than holding ⇧ and then tapping its key, flick downward on its key.

After you tap .?123 to reveal a secondary layout of many commonly used symbols, you can use the same flick shortcut on the more exotic symbols shown there too, saving even more time compared to iOS 10. If an app uses Apple's older keyboard layout, on which secondary symbols are shown in black (on the number keys and select others around the edges), a flick downward also works on those keys, too. Should you find yourself triggering this feature by accident a little too often for comfort, you can disable it in Settings > General > Keyboards > Enable Key Flicks.
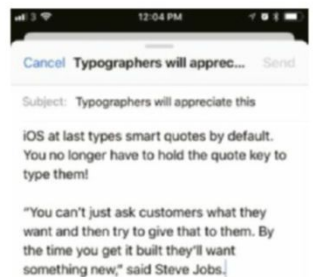
2 GET SMART WITH PUNCTUATION

Previously the quote key produced straight quotes, but iOS 11 includes a setting that tells apps you prefer to use typographer's quotes (the curly kind) by default instead of having to hold the quote key to produce them. If you prefer the old style because you write code, say, go to Settings > General > Keyboards and switch off Smart Punctuation.
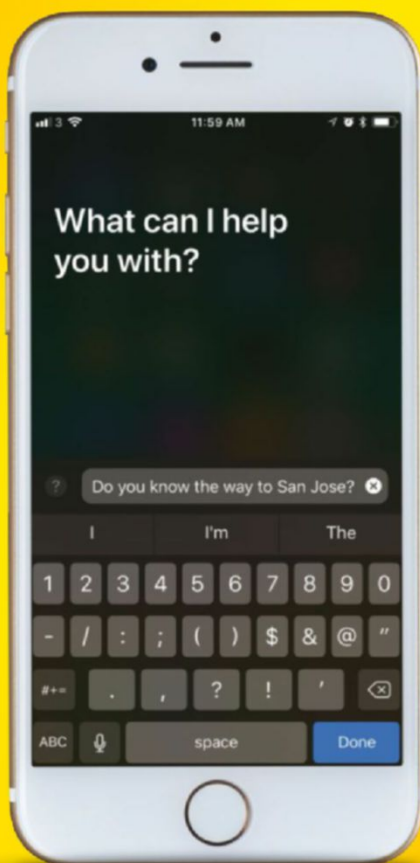
Control Siri another way

1 TYPE TO SIRI

Until now, speaking was your main way to ask something of Siri. Typing on a keyboard only figured if you wanted to correct something Siri misheard. iOS 11 has a new Type to Siri option in Settings > General > Accessibility > Siri. If enabled, typing is used to interact with Siri when you hold the Home button.

2 COMBINE WITH DICTATION

You can still use your voice with Siri if iOS's Dictation feature is enabled in Settings > General > Keyboards. Open Siri, tap the microphone key, speak your request, then tap the keyboard icon followed by Done.

3 HEY SIRI

Even with Type to Siri enabled, Apple's personal digital assistant will switch to voice control if you call for its help by saying "Hey Siri." On devices that respond to that phrase while running on battery power, this gives you the best of both worlds: voice control initiated with your voice, and a press of the Home button followed by typing when speaking isn't a good option. Devices that respond to 'Hey Siri' while running on battery power are the iPhone 6s, iPhone 6s Plus, iPhone 7, iPhone 7 Plus, 12.9-inch and 10.5-inch second-generation models of iPad Pro, and the 9.7-inch first-generation iPad Pro.

Work faster with iMessage apps

Few would argue with the notion that Apple made a bit of a pig's ear of integrating third-party apps with Messages when it introduced the capability in iOS 10. Now it has untangled the spaghetti mess of navigation it created, by putting access to the iMessage App Store, Digital Touch, and your installed iMessage apps behind one icon that looks like the regular App Store's. Tap it to reveal the new, easier to navigate app drawer and explore a whole world of messaging plug-ins.
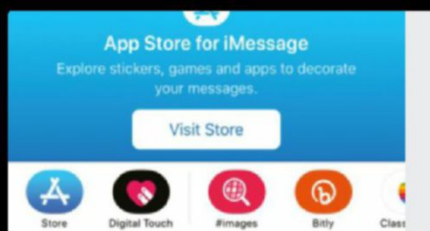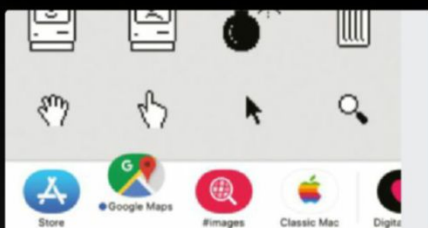

1 THE APP DRAWER
In an iMessage conversation, tap the App Store icon to open the app drawer. Swipe on the drawer and its row grows larger to help you find what you want.

2 FAVOURITE APPS
The iMessage App Store is the leftmost item, then Digital Touch. Left of the divider are your favourites. Right of it are other installed apps; you may have to tap More to access all of them.

3 DESIGNATE A FAVOURITE
Hold a finger on an app's icon in the right part of the drawer and drag it left past the dividing line. Or, tap More (always in the rightmost position in the drawer), then Edit, and then the + next to each app that's a favourite.
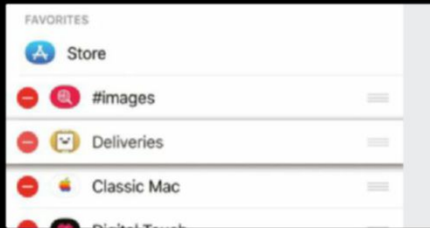
4 ORGANISE FAVOURITES
There's a faster way to get your favourite apps into your preferred order, should you want to rearrange several. Tap More, then Edit, and then hold on the handles at the right end of an app's row and drag it up or down.


5 ENABLE/DISABLE APPS
You may not care for iMessage apps cluttering the drawer just because they came as part of bigger apps, in which case you can hide them to tidy up that row a little. Tap More, Edit, then turn off the switches of those apps.

> Emergency SOS

Emergency SOS is a method of calling for help when you can't interact with your iPhone as normal – using its touchscreen or by talking to Siri. It debuted in iOS 10.2, but hasn't been available until now. It's triggered by pressing the Sleep/Wake button five times in quick succession. That reveals a special form of the 'slide to power off' screen with two additional sliders: one that displays your Medical ID (conditions you have and treatments you take, configured in the Health app), and another that calls emergency services. To use Emergency SOS without touching the screen, tap Auto Call in Settings > Emergency SOS. This reveals the Countdown Sound option, which plays a clearly audible sound and gives you the chance to cancel. After the call, the feature can message your chosen contacts to inform them of your location, even if the Location Services feature is off.
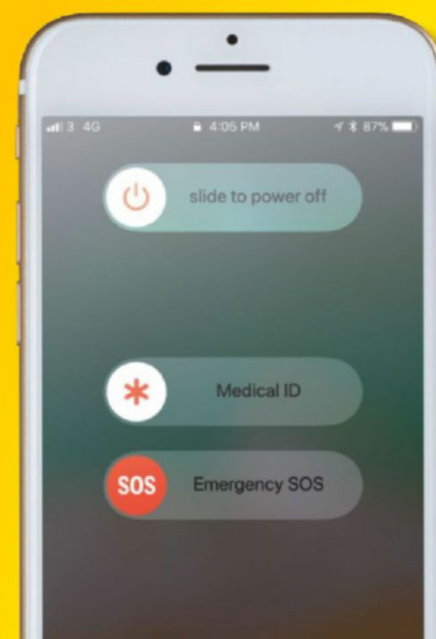
# Mark up Documents and screenshots

Instant Markup is a set of tools for annotating documents in any app, whether for your own use or to collaborate with other people. In most apps you only have to tap the Share icon, then Create PDF in the bottom row of the sheet. Some add extra steps, for example, at the documents list in Pages, tap the Share icon, Send a Copy, PDF, then Create PDF. If an app has no sharing feature, you can take a screenshot and annotate that! Here's how to get started.
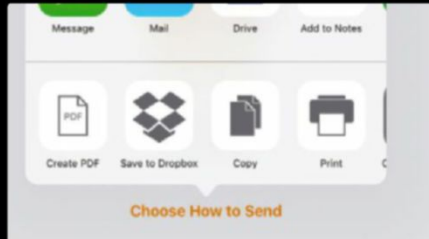
1 START MARKING UP
While viewing a document, use its app's means of opening the Share sheet. In the sheet's bottom row, tap Create PDF. When the PDF opens, tap the pen icon on the toolbar.
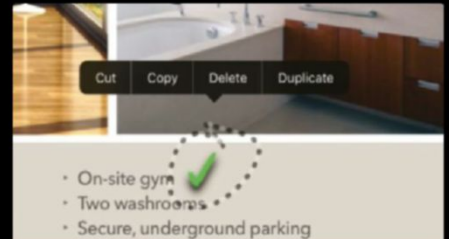
2 THE LASSO TOOL
Tap this, mark a selection that intersects at least one annotation, then drag from within that boundary to move the annotation, or tap within it for Duplicate and Delete options.
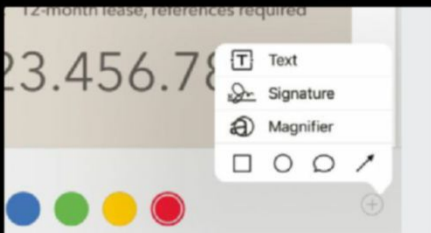
3 ADVANCED TOOLS
Tap the + on the toolbar to add text, rectangles, circles, speech balloons and arrows. With one of those selected, drag to move, recolour using the swatches, or drag its blue control points to resize it.

4 CUSTOMISABLE TOOLS
Lines, speech balloons, and the magnifier, when selected on your PDF, also have green points, which enable you to turn a straight line into a curve, adjust magnification, or alter the size and position of a speech balloon's tail.
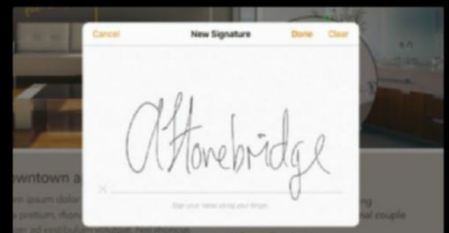
5 ADD YOUR SIGNATURE
Use the Signature tool to sign docs. You only have to sign once; it's saved to iCloud and goes to your other devices. If you've done this in Preview on your Mac, it'll already show up in the Signature tool on iOS 11 devices.
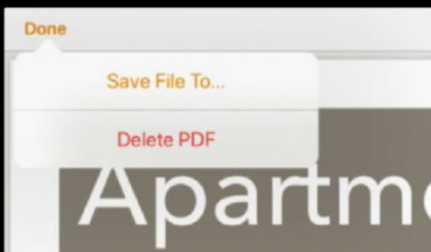
6 SHARE AND SAVE
After you've annotated your PDF, tap the Share icon to send the doc to someone or an app. Once that's done, tap Done and you'll be given options to save the PDF somewhere or discard it.
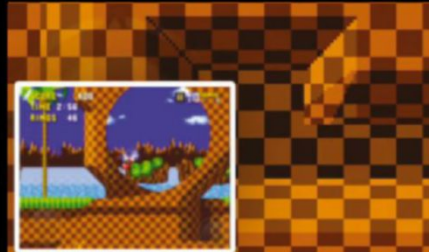
7 ANNOTATE SCREENSHOTS
Press the Home and Sleep/Wake buttons to take a screenshot; a small preview appears (bottom left). Ignore it or swipe it left to save it to Photos, or tap it to annotate, crop, or share it.
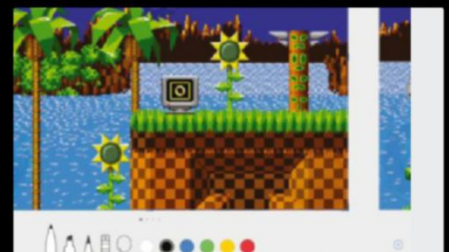
8 WORK ON MULTIPLE SHOTS
Take several screenshots quickly and you can annotate them in a batch; swipe horizontally to move between them. As with PDFs, tap Done and pick whether to save or discard the images.

GET TO GRIPS WITH NETWORKING WITH THE HELP OF OUR ULTIMATE HANDBOOK

Discover everything that you need to know about all of your devices and create the best home set-up!

NEW

THE ULTIMATE

Networking
HANDBOOK

BOOKAZINE

Connect all your devices and enjoy the perfect home network

ON SALE NOW

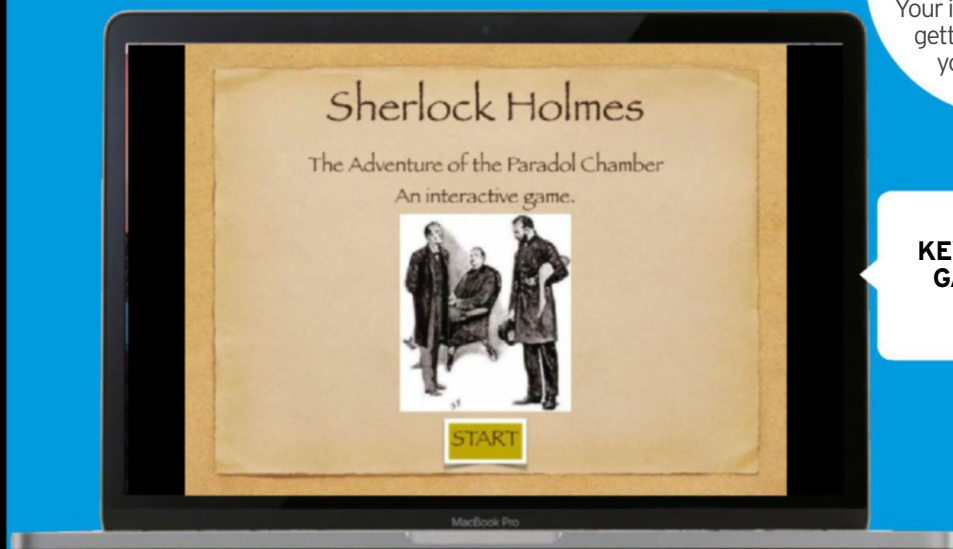Your Wi-Fi problems solved

The best advice for Windows, Mac and Linux

APPLE SKILLS

EDITED BY **JO MEMBERY** >

NEW IDEAS

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

KEYNOTE GAMES p50

Sherlock Holmes
The Adventure of the Paradol Chamber
An interactive game.

START

MacBook Pro

>Understand iOS gestures

> 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.

>Master Mac keyboard shortcuts

> When you see a shortcut like ⌘+⌥+C, hold all but the last key, then press that one.

> ⌘ 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, which is typically just labelled *shift*.

> ⌫ means the Delete key, which deletes to the left of the insertion point. Press fn+⌫ to delete to the right.

> ⇥ is the Tab key, which shifts the focus between *some* controls in windows and web forms. Turn on Full Keyboard Access in System Preferences to jump between *all* controls.

Cut your first film with iMovie

Give your iMovie knowledge a boost with our quick-start guide

IT WILL TAKE
> 60 minutes

YOU WILL LEARN
> How to cut together different pieces of footage, add transitions and a backing track

YOU'LL NEED
> A Mac running iMovie, some footage

If you thought iMovie was for turning your amateur footage into equally amateur faux movie-trailers, think again.
Stick to iMovie's templates and filters and you'll achieve rather hackneyed results. But aim a little higher and you'll find a competent video editor that makes cutting together clips a doddle. That's not all it does, either – adding picture overlays, new audio and transitions are all simply done. Even tasks that normally take more advanced – and expensive, and harder to use – editors, such as stabilising a shaky clip, are often little more than a click away.

For this tutorial, we're going to cut together a movie from a selection of clips. So shoot a variety of clips of about five seconds each, then import them into Photos – iMovie links up seamlessly with Apple's photo app, allowing you to import directly. From there, follow our quick-start guide. **Dave Stevenson**

1 View clips
> This is where the clips for this project live. Double-click any of them to see them in the preview space.

5 Browse clips
> Here you can browse the clips you want to include. Choose from titles, or add transitions or audio tracks.

HOW TO Cut a movie together from scratch in iMove ›
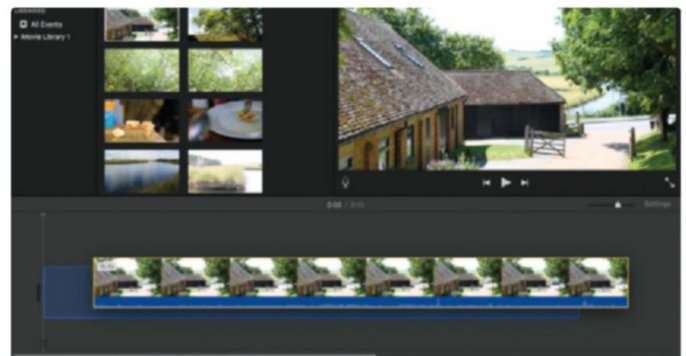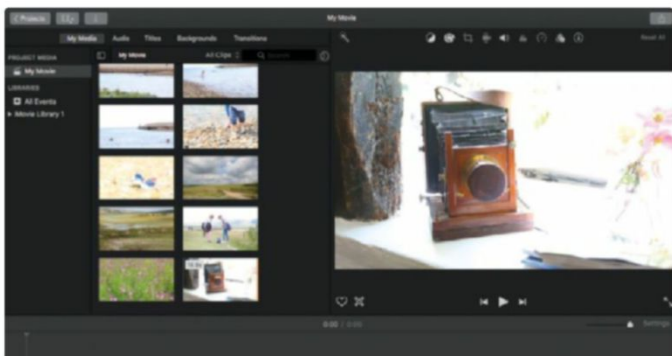
1 Create a project
Once you've hit Create Project from iMovie's home screen, you'll be able to see your Photos library, from which you can drag video clips and images to the working area below. If the clips you want aren't in Photos, press ⌘+I to import them.

2 Adding clips
Click a clip in the My Media pane and drag it down to the main timeline of your movie. If you know the order you want clips to run in you can ⌘-click clips to select a group at once and add them to the timeline at the same time.
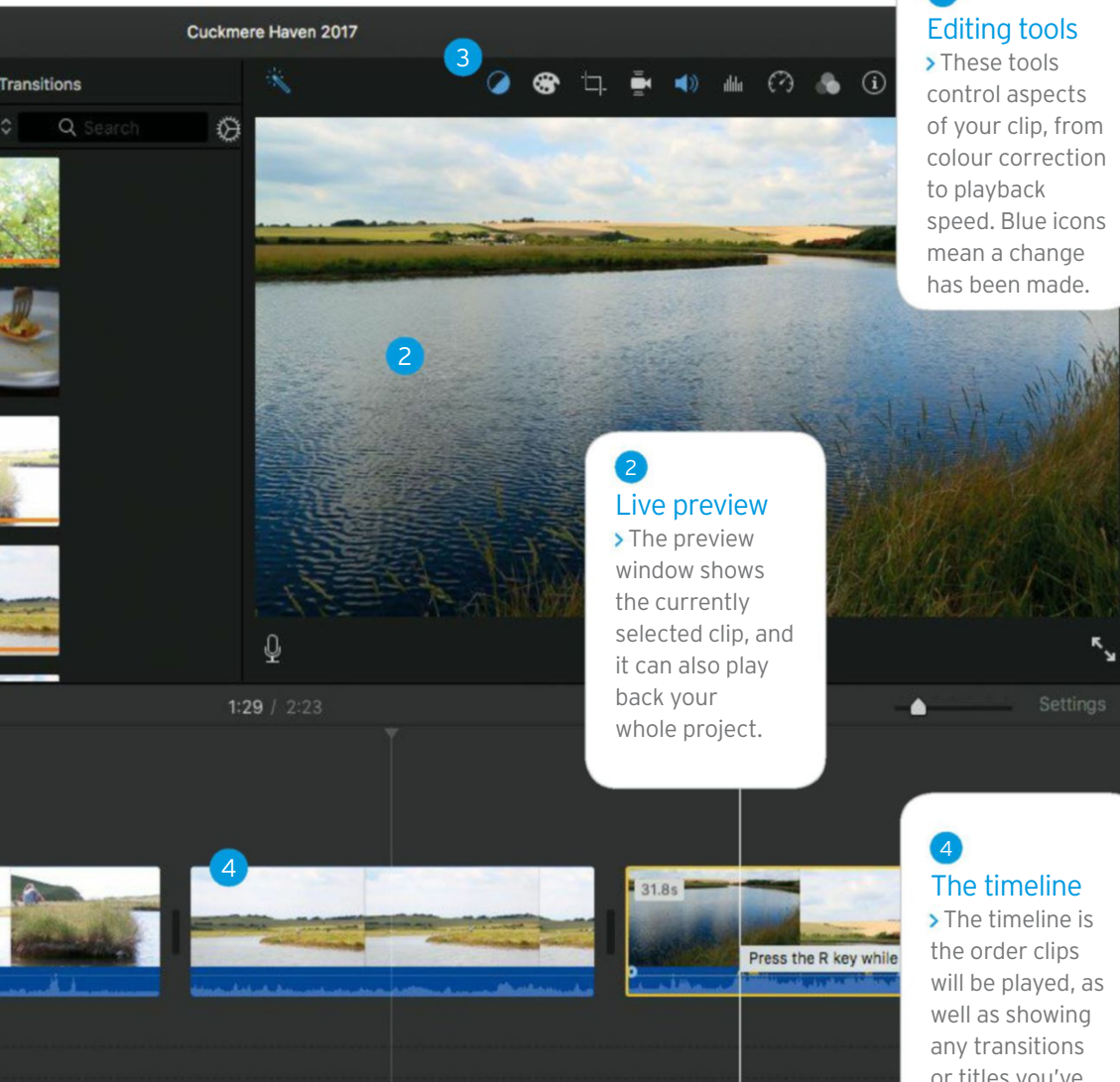
3

Editing tools
> These tools control aspects of your clip, from colour correction to playback speed. Blue icons mean a change has been made.

2

Live preview
> The preview window shows the currently selected clip, and it can also play back your whole project.

4

The timeline
> The timeline is the order clips will be played, as well as showing any transitions or titles you've added in.

Jargon buster
> Modern iPhones can shoot at up to **4K resolution**. If you're shooting a lot of footage, though, or are limited on space, you can shoot 1080p instead. On most TVs you're unlikely to spot a difference.

Genius tip!
> To quickly trim your movie to the playhead, press ⌥+⁄. If the playhead is in the first half, the beginning will be cut, and vice-versa.
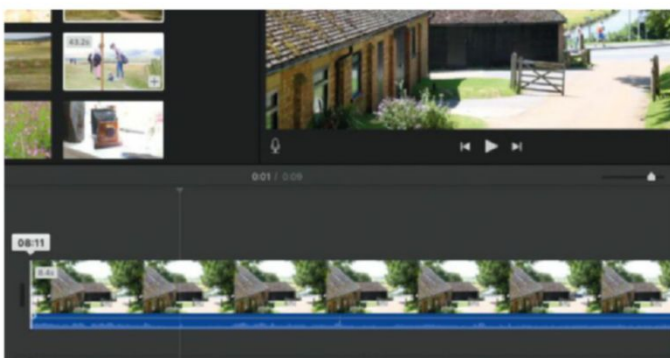
3 Trimming clips
Skim the mouse along the clip you've just placed until you find where you want to begin. Click to place a marker, then click the left-hand edge of the clip and drag right. The edge will snap to the playhead you placed when you reach it.
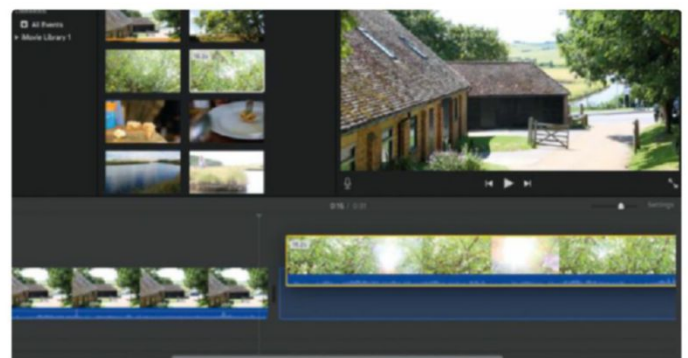
4 Add another clip
Drag another clip to the working area and place it after your first snippet. Press \ and your movie will play in full from the beginning – note how your second clip plays immediately after the first.

HOW TO Cut a movie together from scratch in iMove ›
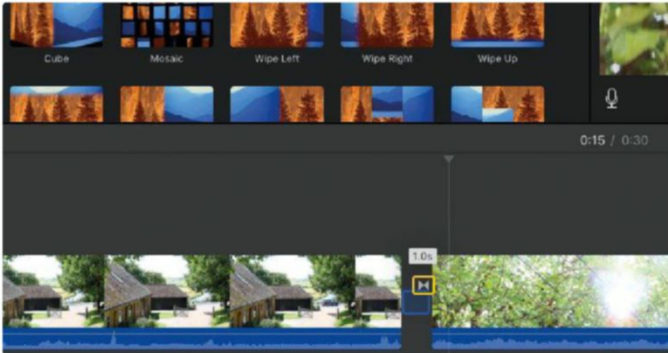
5 Add a transition
That lack of transition can be jarring, so add a subtle cross-fade between the two. Above the media library, click Transitions and drag Cross Dissolve to where your two clips meet. Click to place the playhead just before your transition and hit Space.

6 Adjust the transition
Sometimes you'll want transitions to take longer, or be snappier. To do this, double-click the sideways triangles representing your transition and enter a new duration in seconds. Here, we've sped things up a bit.
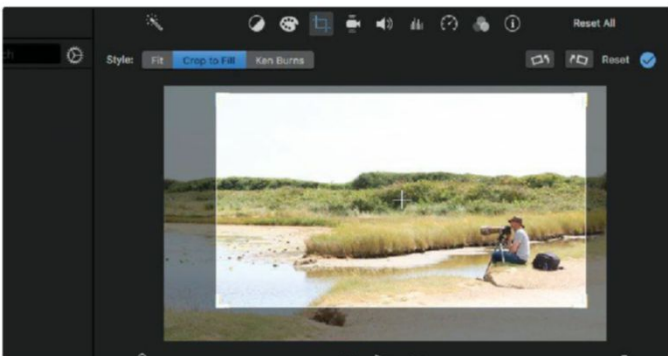
7 Top of the crops
If you find a clip that's not perfectly framed, you can adjust it. Click the crop icon above the right-hand preview window, then choose Crop to Fill. Click the corners of your frame and drag inwards to zoom in and recompose.
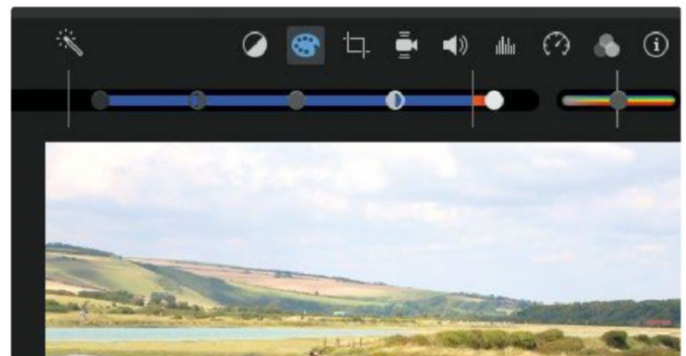
8 Exposure correction
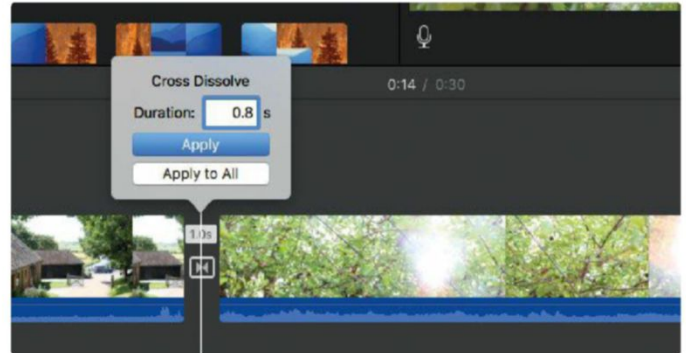This clip is a little under-exposed. To fix it, click the Color Correction tool above the preview window, and drag the highlight handle – the last blob on the left-hand slider – rightwards to brighten the highlights of your image.
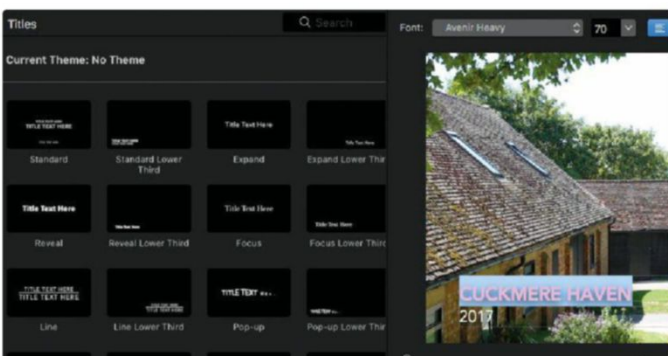
9 Add a title
Click Titles at the top and choose a text layout you like. Drag it to the beginning of your movie and call your film something clever. You can adjust how long the title appears by clicking the right-hand edge and dragging either direction.
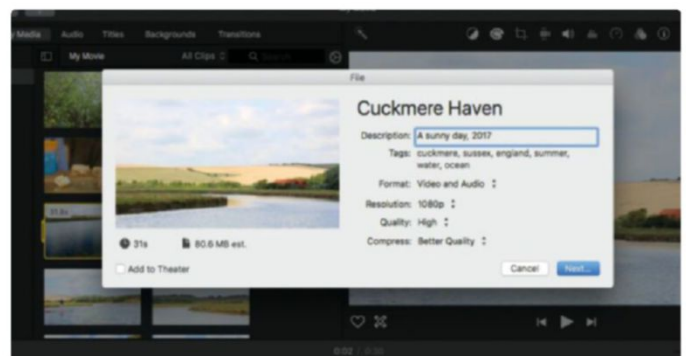
10 Showtime
Click File, then Share. From here, you can upload your film to all the usual suspects. If you want to upload it elsewhere, click File and choose a destination on your Mac. Export your film in the resolution it was shot in so it looks its best.
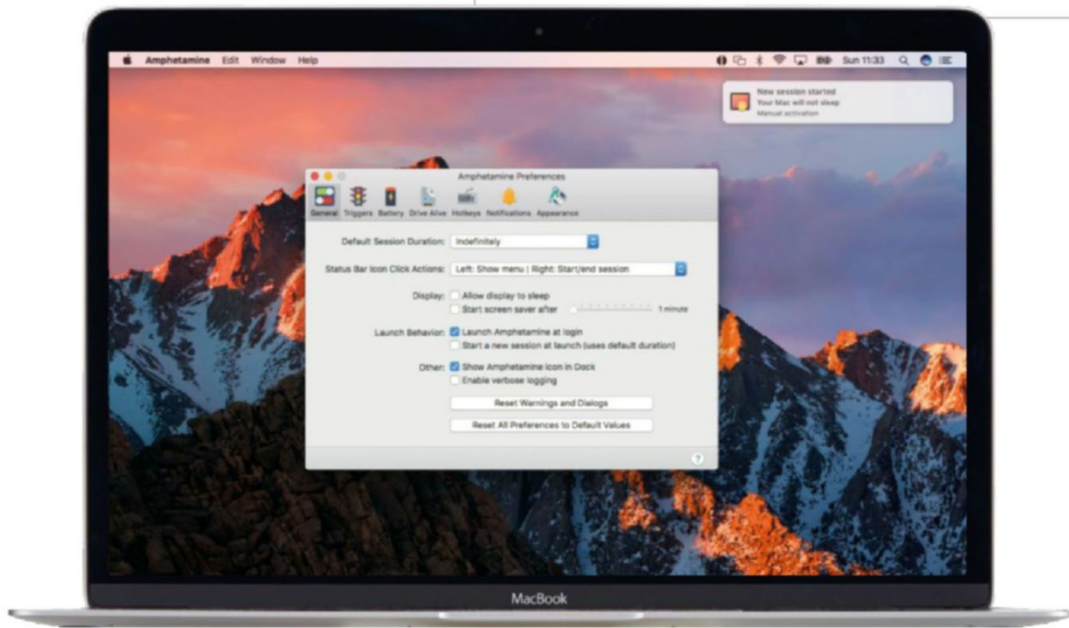
Make your Mac stay awake

How to install and use Amphetamine to override Energy Saver settings

IT WILL TAKE
> 10 minutes

YOU WILL LEARN
> How to override your Mac's sleep settings

YOU'LL NEED
> OS X 10.8 or later, 4MB of free space, a valid Apple ID

Your Mac is designed to be ultra energy efficient. For macOS Sierra users, by default the display and hard drive will enter a special sleep mode after 10 minutes. There are times, however, when you may want an app to keep running in the background.

The utility Amphetamine, true to its name, will force your Mac to stay awake indefinitely once installed. Follow the steps in the guide below to make sure your apps will never be interrupted by Energy Saver settings.

If you feel that this is too broad an approach, after installation click the Amphetamine icon and choose Preferences. From here you can choose to launch the utility on login. Use the Trigger tab to activate an Amphetamine session only under certain conditions – such as when a certain app is running – or deactivate any Amphetamine sessions if your Mac's battery is too low.

Head over to Amphetamine's Drive Alive tab to activate your hard drive indefinitely or only at certain times. **Nate Drake**

HOW TO Get started with Amphetamine ›

1 Introduction
Once you've downloaded the app, click Continue on the launch screen then Next on the following screens to learn more about each of Amphetamine's features. Then click Finish. The app icon will appear at the top of the screen.
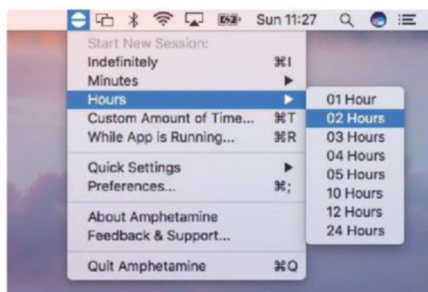
2 Launch
ctrl-click on the app icon in the top menu bar to launch Amphetamine. By default, this will keep the screen alive indefinitely. ⌥-click to see more options, which include the ability to change the number of hours your Mac is awake for.
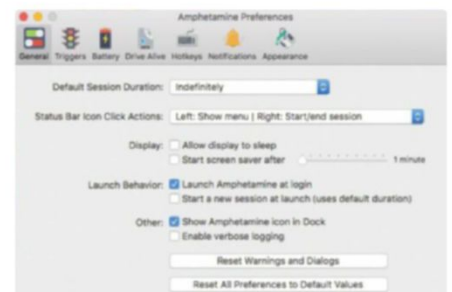
3 Preferences
Click Amphetamine > Preferences. Tick 'Launch Amphetamine at login' to have the app fire up every time you boot your Mac. Then tick 'Start a new session at launch'. Use the Default Session Duration drop-down to set session length.
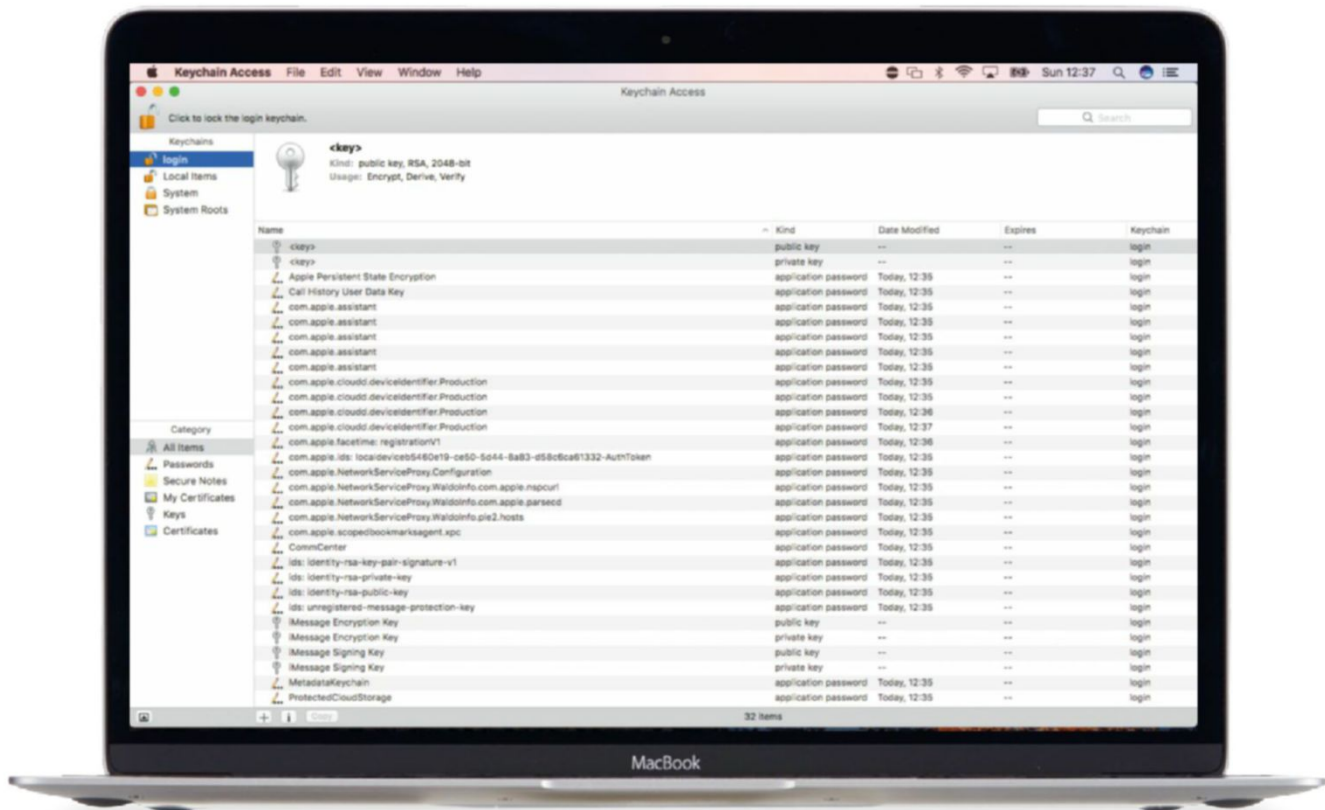
Keychain conundrums

Learn how to master and fix Keychain errors in macOS

IT WILL TAKE
> 15 minutes

YOU WILL LEARN
> How to create new keychain data and fix common errors

YOU'LL NEED
> OS X 10.9 or later

When you first set up your Mac, macOS creates a login keychain to store all your passwords

Keychain Access is a handy utility for macOS that manages your passwords and account information. Launch the Utility by entering 'Keychain' in Spotlight and hitting ↵.

When you first set up your Mac and choose a login password, macOS creates a login keychain to store all your other passwords. These entries are encrypted with the password

You'll find the Keychain Access app in the Utilities folder inside the Applications folder. You'll need this app to sort out any issues you have with your login keychain.

for your user account, so no one else can access them.

This usually runs perfectly on your Mac but occasionally the keychain can throw up issues – for instance, if you're forced to reset your login password as you've forgotten it.

If this happens, the data in your login keychain, which is encrypted with the original password, won't be accessible. Follow the steps in the tutorial opposite to create a new login keychain. You will then be able to log in to your apps again. These passwords will be stored in the new keychain.

Certain applications on your Mac such as Mail use a separate Local Items Keychain, which is also encrypted with your login password. If you see errors related to the Local Items Keychain, the entries for individual applications may have become corrupted. Use the tutorial to remove these entries and try to save the password again in your Local Items Keychain. Make sure to do a full Time Machine back-up before making any changes.
Nate Drake

HOW TO Fix Keychain errors >

1 macOS wants to...

If you see 'macOS wants to use the login keychain' when logging in to your account and you haven't tried to change your password, try clicking on Update Keychain Password, then entering your login password.
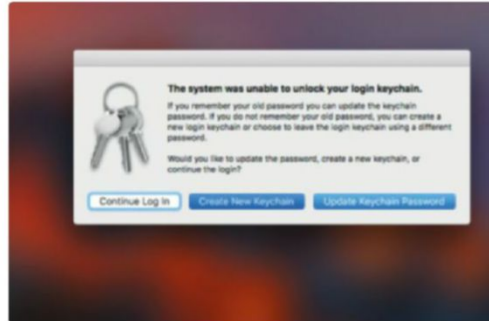
2 Create New keychain

If updating your keychain password doesn't have any effect or you've reset your login password, click Create New Keychain. This will create an empty keychain with none of your old passwords.
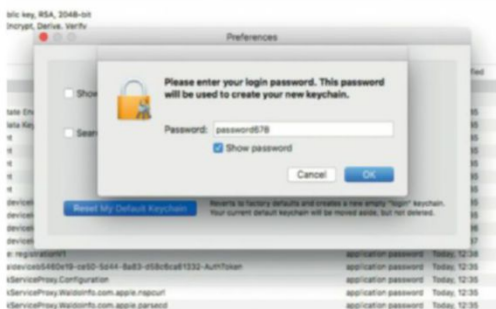
3 Reset default Keychain

If you're still seeing login keychain errors, open the Keychain Access app then click on Preferences > Reset my Default Keychain. This will allow you to create a new login keychain with a new password.

4 Retrieve old passwords

Your Local Items Keychain is used to store security information for apps. Click on an entry, then click on the tick box marked 'Show password'. Enter your login password and the password will appear.
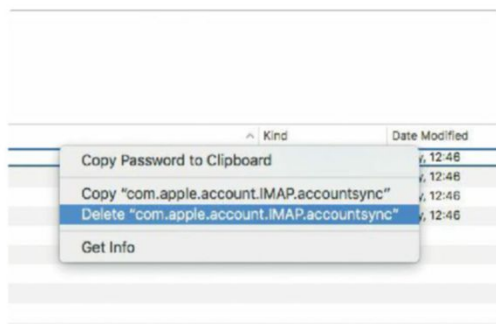
5 Fix broken entries

If macOS tells you an app needs to access the Local Items Keychain, close the app in question and then open Keychain Access. `ctrl`-click any Local Items entries and select the option to delete.
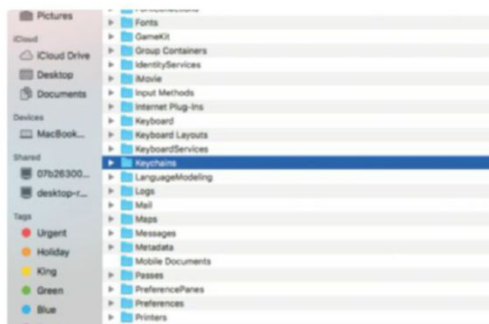
6 Reset Local Items Keychain

If you're still seeing keychain errors, open Finder and click the Go menu (or use the shortcut `⌘`+`⇧`+`G`). Hold down `⌥` and click on Library. Find and delete the Keychains folder, then restart your Mac.
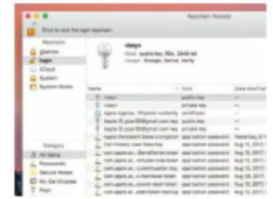
Jargon buster

> Keychain is **encrypted data** containing secret information such as passwords. Keychain Access is the Mac utility for managing your keychains.

Genius tip!

> You can store other data besides passwords in your keychain, such as bank account numbers. Click File > New Secure Note Item.
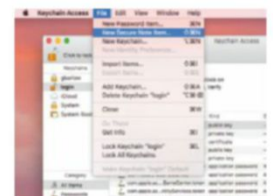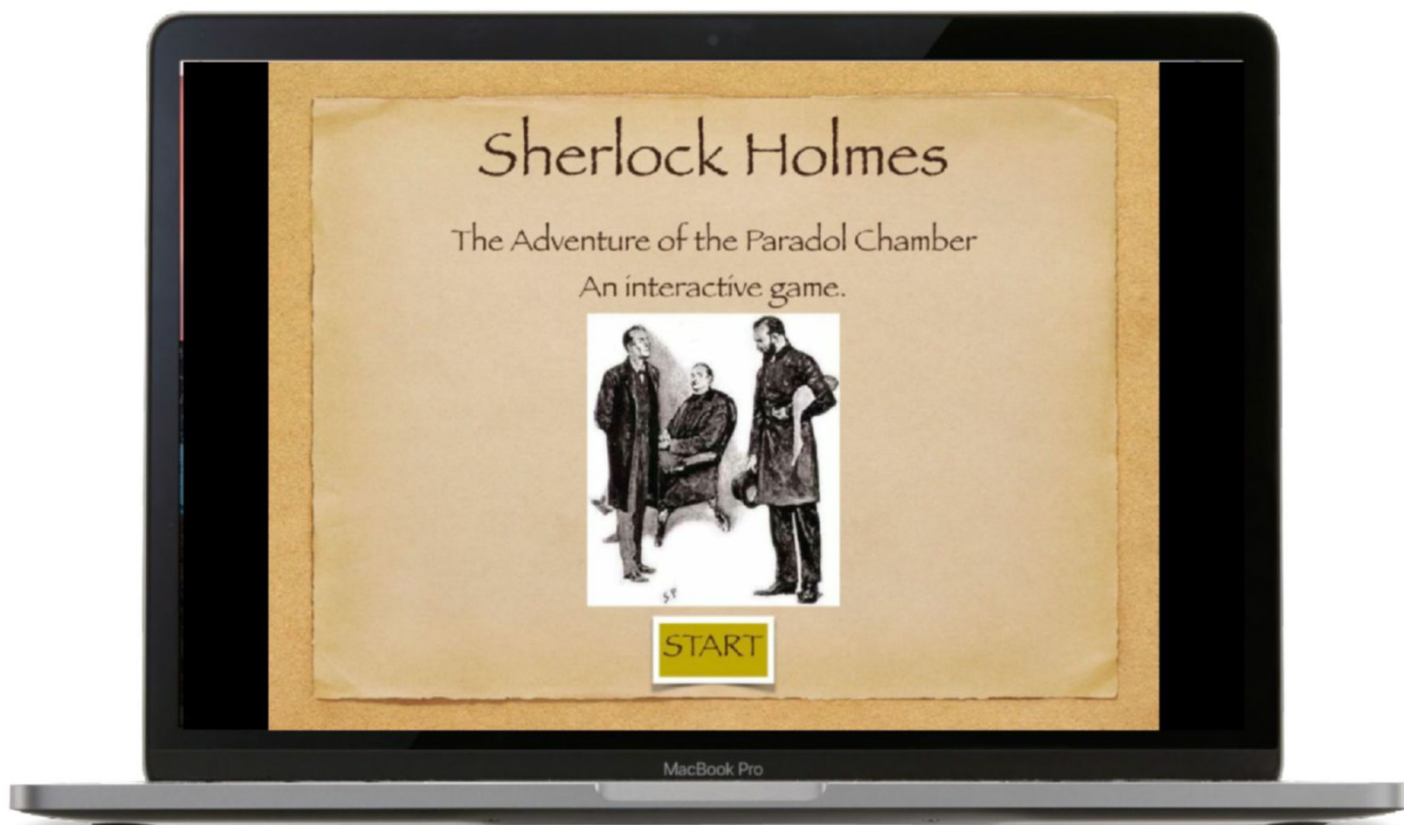
Create a game in Keynote

Discover an easy way to have fun with Apple's presentation app

IT WILL TAKE
> 20 minutes

YOU WILL LEARN
> How to use Keynote to create your own interactive game

YOU'LL NEED
> macOS 10.12 or later, Keynote 7.x, 475MB free space

Genius tip!
> You can group multiple items such as a text box and image by first holding ⇧ to select them, then right-clicking and selecting Group.

Most Mac users consider Keynote to be a program only for creating beautiful presentations. While you can use Keynote in this way, it has many more features beyond displaying a few slides sequentially.

Keynote allows you to turn text boxes and images into special links, which when clicked will take you to a different slide. You can make use of this feature to create an interactive game or quiz, allowing the player to make

Use Keynote to create an interactive adventure game, either for fun or as an educational tool. Be as creative as you like – we based ours on a Sherlock Holmes mystery.

choices to progress. This is a really useful learning tool for school children, as well as for adults who may remember the old fashioned 'Choose your own adventure' books they played when they were younger!

Get creative
Before you go to your Mac, take some time to think about the kind of interactive quiz or game that you want to build, as well as what choices you want to offer to players. By way of example, the illustrations in this guide are for a Sherlock Holmes-themed adventure, where the player guides his trusty companion Doctor Watson around London to solve the mystery of the Paradol Chamber.

Make a rough sketch of your title page, the choices the person playing the game will face in each section, as well as a Game Over slide for those who make the wrong choices and a Congratulations slide for when players manage to complete the game.

If you've never used Keynote, then check out Apple's Keynote tutorial at support.apple.com/keynote to find out how easy-to-use and powerful this presentation app is. **Nate Drake**

HOW TO Produce your first game >
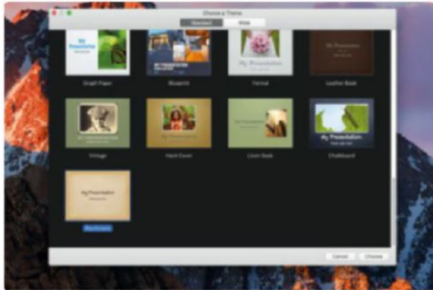
1 Choose a template
If this is your first time using Keynote click Create A Presentation, otherwise click New Document. In the Choose a Theme window select a suitable template for your game from the huge selection available and then click Choose.
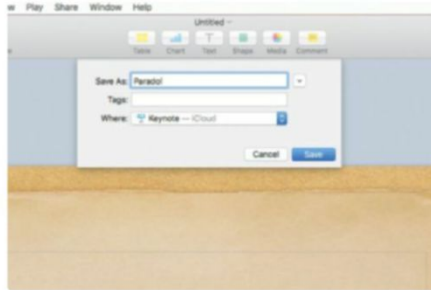
2 Save your game
When the presentation template opens, immediately click File > Save then enter a filename for your game in the pop-up menu that appears. Then choose a location either on your Mac or in iCloud to save your game to.
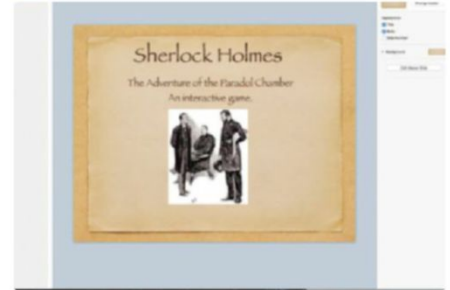
3 Your first page
Click on the fields marked 'Double Click to Edit' to enter the title of your game. Use the Media button at the top right to insert other content – images, for example. Use drag-and-drop to move text and image boxes around and place them.

4 Make a Start
ctrl-click on Slide 1 in the left-hand pane and then choose New Slide from the contextual menu that appears. Return to Slide 1 and then click on the Text button at the top to create a text box. Now enter the word 'START'.

5 Insert a link
ctrl-click on the 'START' text box and then choose Add Link > Slide. A pop-up window will appear. Choose Slide from the list of options, then use the drop-down menu to select the slide to link to, which in this case is Slide 2.
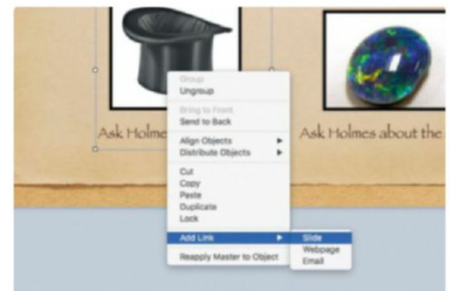
6 Choose a slide
Click on Slide 2 and add text for the first section of your game or quiz. Use a text box or image to represent each choice you want the player to make, then add a link to another slide in the same way that you did in the previous step.
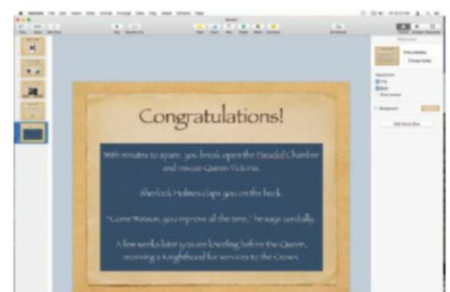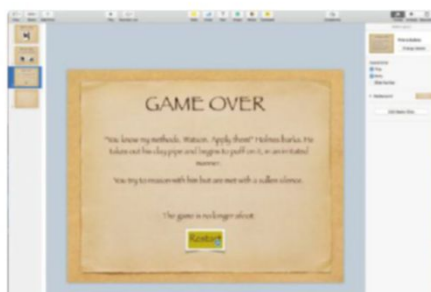
7 More slide choices
Click the Add Slide button from the toolbar to add further slides. If you want to duplicate an existing slide, be sure to ctrl-click any text boxes or images on the duplicate and choose Edit Link to make sure they point to a new slide location.

8 Game Over slide
Click the Add Slide button and choose from one of the available slide options. Then edit the text box in this slide to say that the player has not completed the game. Add a Restart button to take them back to Slide 1.

9 Congratulations slide
Click the Add Slide button to choose another slide template. This time, edit the text box in this slide and write a message of congratulations for when someone wins the game. Now return to the first slide and click Play to start the game.

Get cooking with Paprika

Get organised in the kitchen, and the supermarket, with this recipe app

IT WILL TAKE
> 15 minutes

YOU WILL LEARN
> How Paprika can help you cook, shop and plan your meals

YOU'LL NEED
> Paprika Recipe Manager (£4.99), iOS 8 or later

It's one of those apps you'll wonder how you ever managed without

If you cook, you'll love the Paprika Recipe Manager: it's so good that if it were a food, it'd be bacon. As the name suggests it's a way to manage your recipes, but it's more than just Notes with a list of ingredients. It can automatically scale recipes for more or fewer guests, you can use it to set timers, you can use it as a meal planner to cut out waste and it can even create your shopping lists.

The shopping list is smart too, so it organises ingredients by category (dairy, meat, tins, frozen items, etc) and combines ingredients from multiple recipes – so if you're shopping for three meals that use eggs, it'll calculate the total number of eggs rather than list each recipe's requirements separately. If you've ever ended up with multiple jars of the same spices, insufficient eggs or far too many tomatoes then you'll know how useful that is.

Easy as pie

Where Paprika really excels is in its integration with Safari. As we'll see in our tutorial it's incredibly easy to grab recipes from your favourite sites, and there are good importing options too. There's something incredibly satisfying about lounging around on the couch browsing foodie sites and sending the good stuff straight to Paprika. On the very rare occasions that Paprika can't import the recipe directly it has a built-in web browser that you can use to highlight and grab the relevant bits of information. Very handy indeed.

The other great thing about Paprika is its cloud sync facility. It's a cross-platform app, so in addition to iOS it's available for Mac, Android, Kindle Fire and Windows. That means Paprika can be a cookbook in the kitchen, a shopping list in the supermarket and a source of inspiration wherever you are.

Being able to search recipes by ingredient is particularly handy, both in terms of reducing waste by using what you've already got and in terms of inspiring you when you've no idea what you're going to do for dinner.

Paprika isn't a freebie – it's £4.99 on iOS (iPhone/iPad/iPod touch) and a further £19.99 if you want it on your Mac too – but it's cheaper than buying a new collection of cookbooks and you'll turn to it much more often. It's one of those apps you'll wonder how you ever managed without. Here's a guide to making the most of out of it. **Gary Marshall**

HOW TO Spice up the contents of your kitchen >

1 Find your happy place
Paprika can get recipes from pretty much any food and drink website out there; just visit the site you want in Safari, find a recipe you fancy making and tap the share icon. Swipe left to see the Paprika icon and tap it.
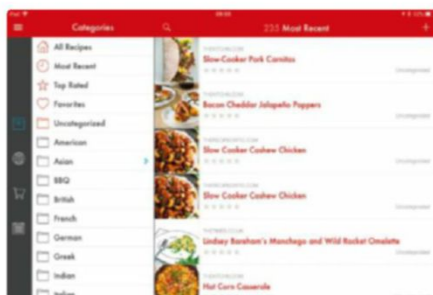
2 See it in Paprika
After a few seconds you'll see a 'Recipe Added' pop-up message. If you go into Paprika and tap Categories > Most Recent, you will see the recipe you just added at the top of the list. Paprika even grabs the photo.
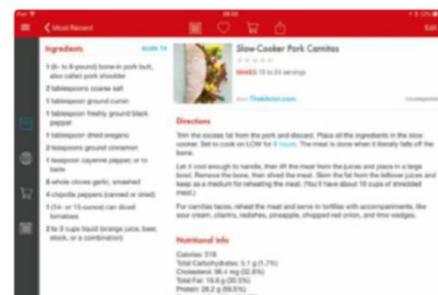
3 Get the goods
How clever is this? Paprika automatically sorts the recipe into ingredients, directions, nutritional information where available and serving sizes. You can assign a category by tapping Uncategorized.

CONTINUED... Spice up the contents of your kitchen >
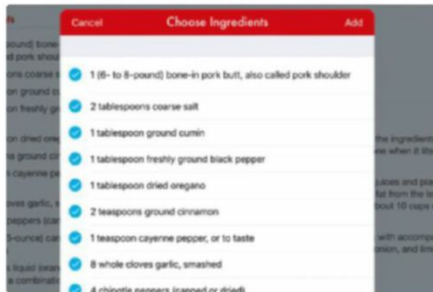
4 Add to your list
Tap the shopping basket icon at the top of the interface and you can now add the ingredients to your shopping list. Untick ingredients you already have and then tap on Add to put the remaining items in your list.

5 Pick a day
Tapping the calendar icon uncovers another cool feature: meal planning. You can assign a recipe to a specific date, and specify whether it's for breakfast, lunch or dinner. It's great for cutting waste and getting super organised!
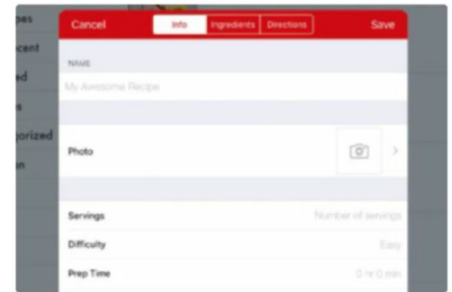
6 Add your own
As we've said, Paprika can automatically grab recipes from almost any food site, but it doesn't know about Grandma's legendary sausage casserole. No problem: tap the + icon at the top right to create a new recipe.

7 Embrace autocorrect
As you type, Paprika offers relevant suggestions, so for example, as we type pepper we get options for pepper flakes, ground pepper, peppercorns and so on. It takes the hassle out of it and makes adding recipes much faster.
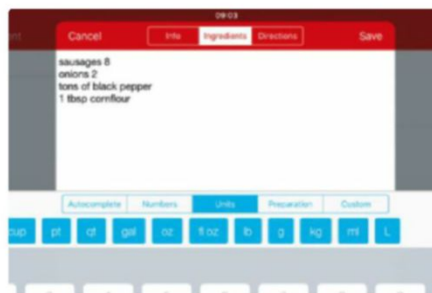
8 Use units
Entering precise quantities? Tap on Units and the suggestions become measuring units such as kilogram, tablespoon, fluid ounces and so on. It's worth using these as Paprika relies on them for scaling up recipes.
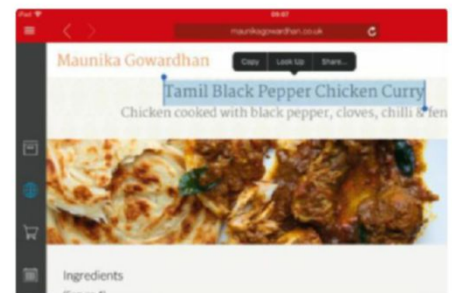
9 Browse in the app
Paprika has its own browser, which is tailored for grabbing third-party recipes: if you can't get it automatically, highlight the bit you want and tap where it should go – here we're capturing the title ready to be copied.

10 Say what's what
Highlight the bit of text you want to grab and tap on where it should go – here we've highlighted the ingredients and tapped Ingredients. Do the same for directions and for any other information you wish to add in.
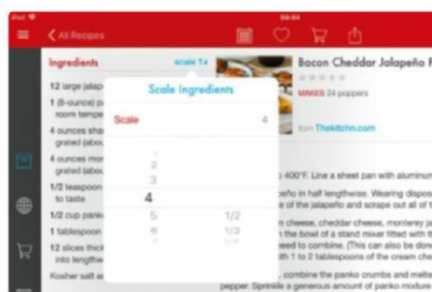
11 Scale up or down
In a recipe, tap on Scale 1x and you can adjust the number of servings, with Paprika recalculating quantities accordingly for you. If you need to, it makes sense to do this before adding ingredients to your shopping list.
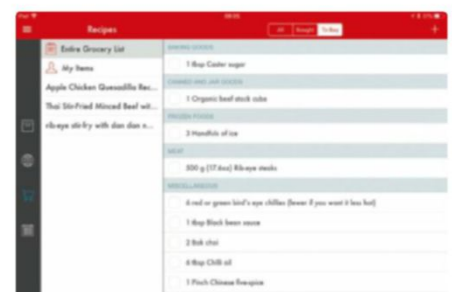
12 Go shopping
Paprika doesn't just create a list for a single recipe; you can add multiple recipes and it'll combine ingredients so you don't buy too much or too little. The tick boxes are also great when you're out and about shopping.

Genius tip!

> **Universal clipboard**
Universal Clipboard enables you to copy and paste content between your Mac and your iOS device. You need to be signed into the same iCloud account on the Mac and the iOS device, and have Bluetooth, Wi-Fi and Handoff enabled. Now you can simply copy and paste ($\mathcal{H}$+C, $\mathcal{H}$+V) content between the two. You can pick up, say, a recipe from the internet or a photo, then just position the pointer where you want the content to go.

macOS SKILLS

EDITED BY **GRAHAM BARLOW** >

HIGH SIERRA

This issue we focus on getting more from macOS High Sierra

PERSONALISE SAFARI p58
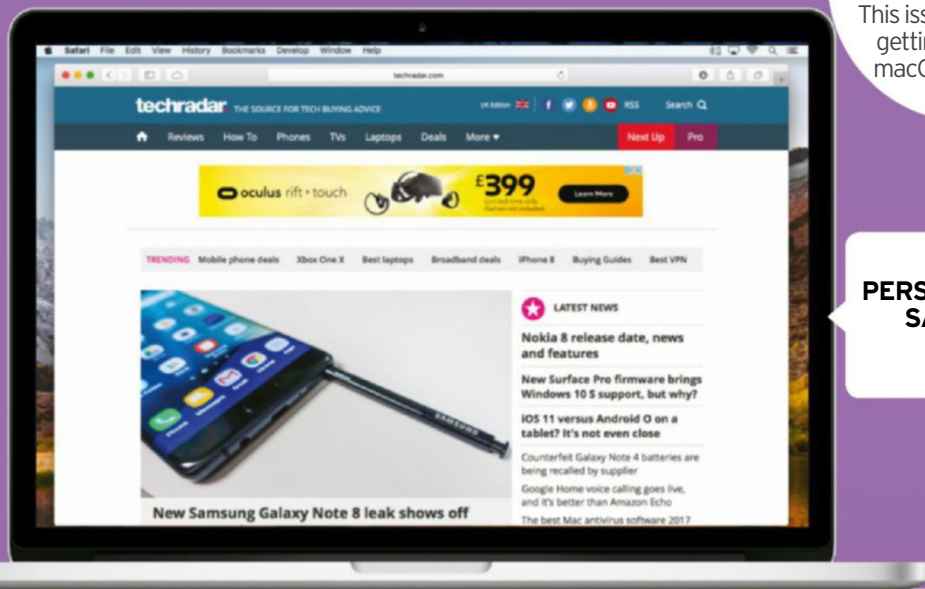
> macOS High Sierra requirements

> You need MacBook or iMac going back to 2009, MacBook Pro and Mac Mini's from 2010.

> You need to be running Mac OS X 10.8 or later.

> You need 5GB of available storage.

> Back up your Mac before upgrading; go to support.apple.com/en-gb/HT201250

for advice on using Time Machine.

> Go to the Mac App Store and download the free macOS High Sierra upgrade.

> The benefits of running macOS High Sierra

> macOS High Sierra is the most up to date version of the Mac's operating system.

> You can install macOS High Sierra through the App Store on your Mac. See our feature on page 60 for more details.

> macOS High Sierra uses a new file system that makes a flash-based Mac even faster.

> HEVC (High Efficiency Video Coding), also known as H.265 is supported by macOS High Sierra.

> Metal 2 is a technology built into High Sierra that adds capabilities like virtual reality and external GPU support.

> Safari and Photos get new features in High Sierra, along with Siri and Mail.

For a full list of features, go to apple.com/macos/high-sierra-preview/

Go further with Photos

Enjoy smarter Live Photos and advanced colour adjustments in High Sierra

IT WILL TAKE
> 30 minutes

YOU WILL LEARN
> How to make use of some great new Photos features in High Sierra

YOU'LL NEED
> macOS High Sierra, Photos and images (including Live Photos)

Photos – and iPhoto before it – has never been a mere tool for organising pictures and videos; it's also packed with useful editing features.

In macOS High Sierra, Apple has made big changes to this aspect of the app. It's now easier to manage imports and filter albums – and you can do far more with Live Photos. The app feels more considered for fine-tuning your photographs, too. Its new Curves and Selective Color tools add a professional sheen, and the revamped interface is more usable, making a bigger range of adjustment tools immediately accessible by housing them within a scrolling pane.

Here, we'll take a look at the organisation capabilities and more advanced editing tools you may have missed. As ever, Photos remains a non-destructive editor. This means you can experiment with various adjustments and toggle them using the blue check mark buttons, but can reset them if you don't like the changes you've made. **Craig Grannell**

HOW TO Manage your photos >
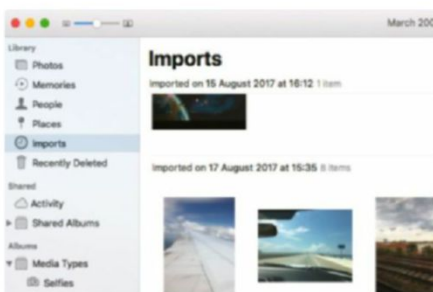
1 See import history
In the revamped Photos sidebar, you'll find an Imports album, which you can also jump to using the shortcut ⌃+5. It provides ongoing tracking of recent imports, so you can see which photos you added when.
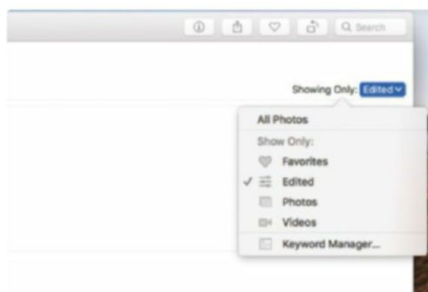
2 Filter your photos
You can still search your photos, but each album now has a Showing menu too. This defaults to All Photos. Click it to filter the album by one or more criteria displayed in the pop-up, which includes keywords and edited images.
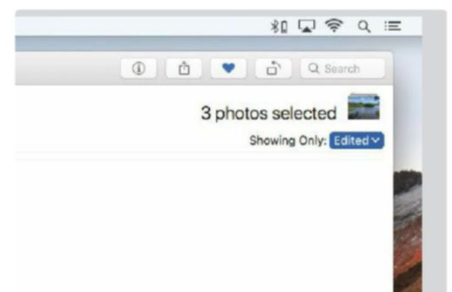
3 Quick changes
If a number of images in an album are incorrectly oriented, you can select them all and click the Rotate icon on Photos' toolbar to fix that. To its left is a new button for marking the selected photos as favourites.

HOW TO Edit Live Photos >

1 Trim and tweak
Select a Live Photo and click Edit. Under the picture, drag the yellow handles to change the start and end points of the video component. To change the key photo, drag the white square, then click Make Key Photo.
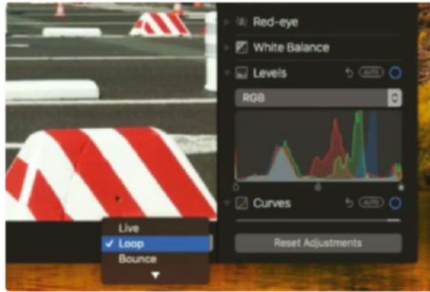
2 Create loops
Got a photo that would make a great endless loop? Let Photos do all the work: switch the pop-up menu's value from Live to Loop. Photos will stabilise and crop your Live Photo, to make it work as well as possible.

3 Long exposures
From the same menu, select Long Exposure to turn a Live Photo into a still in which moving water is smoothed or lights become trails. This works best if you use a tripod, as moving scenes will just blur otherwise.

HOW TO Perform advanced edits >
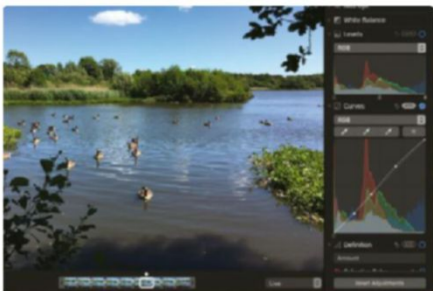
1 Check out the tools
When editing a photo, click the Adjust tab. Previously, you had to manually add most adjustment tools, but now they're all ready and awaiting input. Scroll down to new tool Curves and click Auto to enhance your photo.
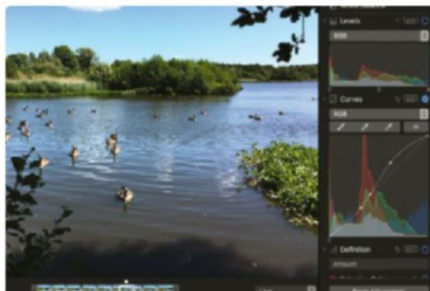
2 Adjust curves
If you're not keen on what Photos does, drag existing points on the curve, or click and drag to create new ones. Click a point and press ⬅ to remove it. A classic 'S' curve can be used to boost contrast and saturation.

3 Selective Color
Use Selective Color to select hues and boost/desaturate them. This can be used to correct tinted images, add effects (such as reddening greenery in a landscape), or isolate a hue by desaturating everything else.

Further refine Live Photos
More handy tools for your moving pics >

We've already talked about some of the new features for editing Live Photos, and there are more! When editing a photo, you can click the speaker button to silence your photo, if you don't happen to like its audio track. Plus, as an alternative to the Loop animation, you can choose Bounce, which plays the video back and forth (this is seemingly a legal requirement for any Live Photos of people jumping into swimming pools). Helpfully, the Live label seen when you double-click an image updates to reflect the kind of animation you've chosen.
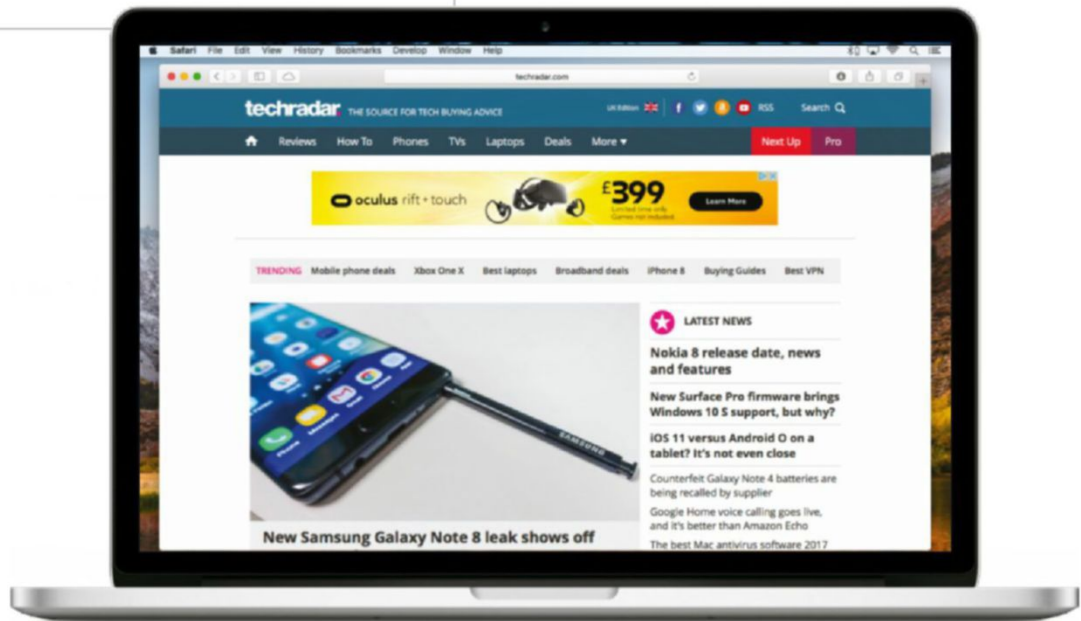
Personalise Safari

Use Safari's new features in High Sierra to bend the web to your liking

IT WILL TAKE
> 10 minutes

YOU WILL LEARN
> How to use Safari's new features to get the best reading experience on your favourite sites

YOU'LL NEED
> A Mac running macOS High Sierra, and an internet connection

Genius Tip!
> If you set Reader to be on at all times, you can override it on a per-page/per-visit basis by clicking the Reader icon at the left of the search field.

Of all of the built-in apps we're happy to see get some love in a macOS update, Safari is at the top of the list. After all, a web browser is something we use very frequently – and we want Apple's to be safer, smarter, and faster than the competition.

In macOS High Sierra, the big changes centre on performance, privacy, and customisation. The revamped version of Safari is reportedly significantly faster than the competition, making it feel snappier in use – but also ensuring it doesn't drain your Mac's battery, if you're sporting a notebook. From a privacy standpoint, by default Safari now blocks tracking scripts that follow you around the web – which is great.

But our favourite new features – which are explored in the walkthrough – are those that allow you to define settings for specific websites. These include whether Reader is automatically triggered when you visit a site, and if videos should play or keep quiet – and stay static. **Craig Grannell**

HOW TO Use site-specific settings >

1 View site settings
To view settings assigned to the site you're reading, go to Safari › Settings for This Website. A panel opens under the site address. By default, Safari enables content blockers, and stops media with sound from playing.

2 Use Reader
If you put a check mark next to 'Use Reader when available', Safari's Reader view will always load when it can. Not all sites are compatible, but when one is, you'll see only an article's headline, byline, imagery, and text.

CONTINUED... Use site-specific settings 〉
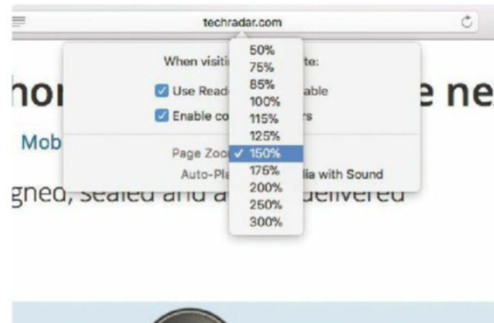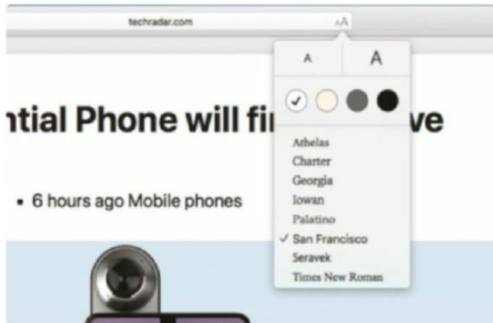
3 Configure Reader

Although mostly used to immediately delve into web page content, Reader can also be an accessibility aid. Click the AA in the search field, and then adjust the view's font style/size, and the background colour.
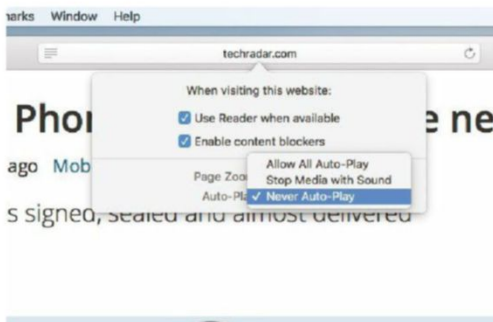
4 Adjust zoom settings

If you don't use Reader, you can adjust a site's text size using Page Zoom in the site's settings – just click and choose a new value. Unlike in older versions of Safari, your choice is assigned only to the current site.

5 Halt distracting videos

Under Auto-Play, Safari should by default stop media with sound, ensuring videos don't play over other audio you're listening to. If that doesn't work on a site – or silent videos distract – set Auto-Play to Never Auto-Play.

6 View all your settings

For an overview of all your settings, click the Websites tab in Safari's preferences, and then choose a sidebar item. For each of them, you'll see settings split into configured websites and currently open websites.

7 Change your settings

To update a configuration setting, click a pop-up menu and choose a different option. To delete a configuration entirely and revert to its default state, click the item and then the Remove button (or press ⌫).
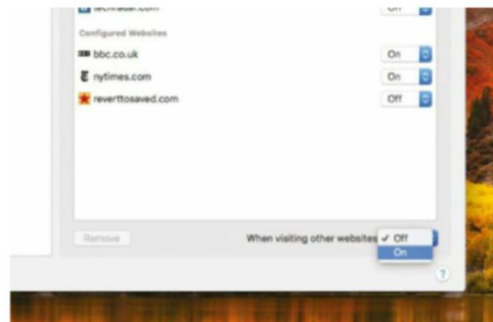
8 Define Safari defaults

When in the Websites tab, the pop-up menu at the bottom-right of the window sets Safari's default value for the current category/feature. The choice you make here defines Safari's default behaviour for all other sites.

Jargon Buster

〉In web parlance, **tracking** refers to website scripts that know where you've been, usually to advertise things you've looked at.

Genius Tip!

〉To send a page to Chrome (if it's installed) – for example, to run a Flash game – turn on the Develop menu in Advanced preferences, then choose Develop 〉 Open Page With.

10

things to do before you install High Sierra

Written by Nate Drake

Get your machine High Sierra ready before upgrading

Fans of the *Terminator* franchise may remember the cybernetic killing machine played by Arnold Schwarzenegger being singularly outclassed by the superior and ruthlessly efficient T-1000. At *MacFormat* we have been experimenting with the special preview of the latest version of macOS, High Sierra, and can safely say that there is no better analogy when comparing Apple's latest offering to its predecessor.

The fluid machine that is High Sierra is exemplified by the use of HEVC (High Efficiency Video Coding). The upgraded Metal 2 will also turbo charge your Mac's GPU (Graphics Processing Unit) like never before by supporting features such as virtual reality.

Under the hood, the OS introduces the new Apple File System, specifically designed to process your data more efficiently on modern flash drives, specifically when cloning data. High Sierra also incorporates changes and improvements to existing apps like Photos. As important as it is to keep your machine up to date and enjoy new features, if your Mac isn't prepared, you may run into some issues during installation.

In this guide, we'll explore how to check your Mac is compatible with High Sierra as well as detailing methods to upgrade. We'll also examine ways to make sure your favourite applications are compatible with High Sierra and discuss how to back up macOS, should the worst happen.
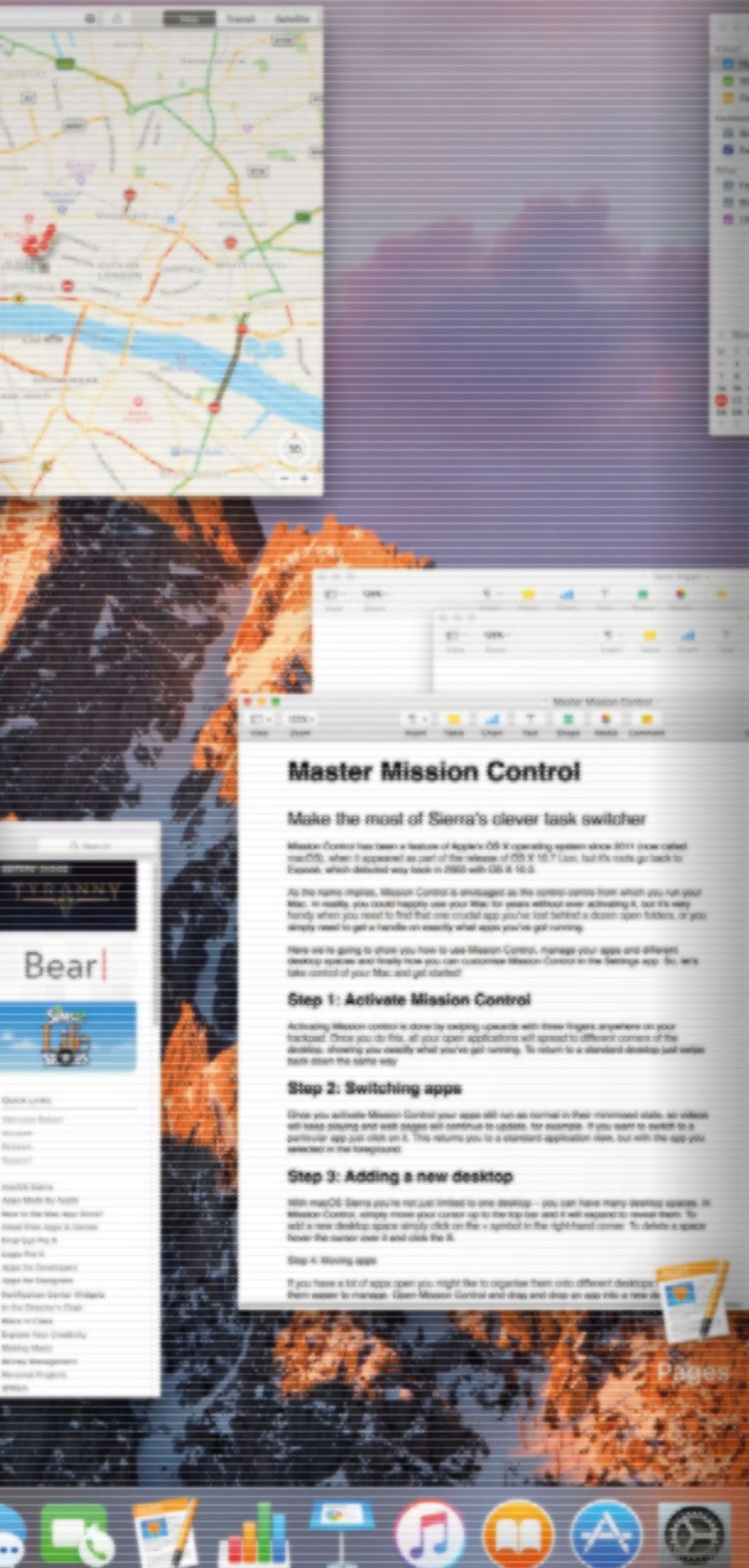
1. Check your Mac compatibility

If your Mac is already running macOS Sierra then it should be able to run High Sierra. If you're not certain which OS you're using, click on the Apple at the top left of your screen, then About This Mac. Click the Overview tab to check you're running macOS 10.12. If you're using a different OS, you may still be able to upgrade. Check your Mac model in the Overview tab – for example, Mac Mini Late 2012. Once you know the exact model of Mac you have, check the Apple Support website (bit.ly/model_compatibility). If it's listed as compatible with macOS Sierra, you can install High Sierra.

2. Decide how to upgrade

You can upgrade to your new operating system by clicking Apple > Mac App Store and typing 'High Sierra' into the search bar. Click Get below the High Sierra icon. You'll need around 5GB on your hard drive (see step 6 for tips on freeing up space). Follow the steps in the installation wizard to perform your upgrade.

If you have already installed the experimental public Beta version of High Sierra, you'll need to prepare a bootable USB version of the operating system and perform a fresh install (see the next step). You can also do this at a later stage if you have already installed High Sierra but the system is performing poorly.

3. Clean install of High Sierra

Some users prefer to do a 'clean' installation of a new OS by copying the necessary files to a USB stick, booting from it, then overwriting the existing OS. To do this you must have access to a Mac running at least OS X 10.8 and be signed in to the App Store with your own Apple ID. Make sure to back up your current data before proceeding (see 'Back up your files' below).

Once you have prepared the installation USB you can perform the clean install at any time. After booting the disk visit bit.ly/setup_assistant for help with Setup Assistant. Here are three tips to follow…

4. Charge your device

If your device experiences a power failure during installation, you most likely won't be able to boot macOS. If you're using a laptop, make sure it's plugged in and charging from the time that you begin downloading the High Sierra installer. Give your device time to charge the battery fully. If your device does power off for any reason once installation has begun, try to restart the process via the Mac App Store. Failing this, use macOS Recovery to reinstall Sierra (see bit.ly/macos_recovery).

Clean install macOS High Sierra


```
sudo /Applications/Install\ macOS\
High\ Sierra.app/Contents/
Resources/createinstallmedia
--volume /Volumes/name_of_your_
USB_device --applicationpath /
Applications/Install\ macOS\ High\
Sierra.app –nointeraction
```
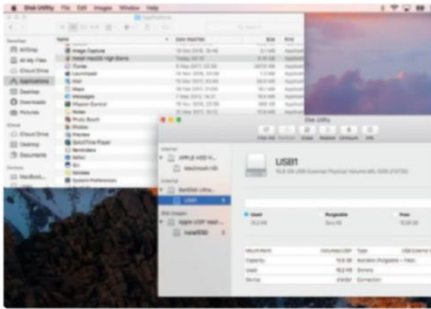

1 Prepare your files
Open the App Store on your Mac and search for 'High Sierra'. Choose Get and then the Download option. Insert a USB drive of at least 8GB. Use Disk Utility to check the drive name.

2 Copy files to USB
Click on Spotlight and type 'Terminal'. Press ⏎. When Terminal opens, type the text shown above, then press ⏎. Terminal will ask for your user password for your Mac.
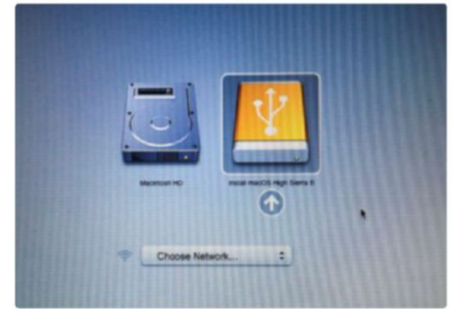
3 Install Sierra
Press ⏎ to copy the installation files to the USB drive. Once Terminal says Copy Complete, restart your Mac holding the ⌥ key. Double click on Install macOS High Sierra.

5 Check app compatibility

Application developers are ultimately responsible for making sure that their applications and programs, such as Microsoft Office 2016, are compatible with new versions of macOS. This means that before upgrading to High Sierra, you should carefully check the developer's website to ensure which features are still supported.

The developers will have had access to the preview version of High Sierra, so it's likely they will have been able to come up with a viable update but applications may not be 100% compatible immediately after High Sierra is released.

Microsoft, for instance, has advised that version 15.35 of Office 2016 will install and run in High Sierra perfectly fine but not every function works. Apple have released specific guidance about their own 'pro' apps (for more information head to bit.ly/pro_app_compatibility). In brief, the following Apple pro-level apps are compatible with High Sierra:

Final Cut Pro X 10.3.4 or later
Motion 5.3.2 or later
Compressor 4.3.2 or later
Logic Pro X 10.3.1 or later
MainStage 3.3 or later

If you require these apps and haven't yet bought them, the most recent versions are available for purchase from the Mac App Store. If you already use any of these, make sure to update your system prior to upgrading to High Sierra (See 'Update, update, update').

If you need to check which version of an app you have on your machine, open Finder and click Go > Applications. ctrl-click on the application in question and select Get Info. You'll see the version number of the application in the General section. If you do discover any issues with Apple applications, visit bugreport.apple.com to share your feedback.

6. Make time and space

The installation files for High Sierra take up around 5GB of space. The time it takes to download will vary depending on your connection speed. See our guide below for tips on how to check your available storage space and free up some clutter. Once you've begun downloading the installer via the Mac App Store, you can keep on using your Mac as normal. Once the download is complete, the installer will open. You can choose to start the process at any time but remember you won't be able to use your Mac during installation.

Manage your Mac's storage

1 Check available storage
Click on Apple > About This Mac. Next, click on Storage. Your machine may need a few moments to calculate the amount of available space. The result is displayed in a colourful panel.
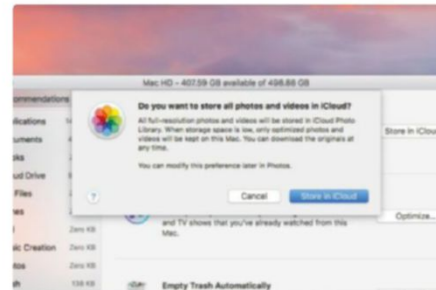
2 Manage storage
If you don't have at least 5GB available, click the Manage button. Click Store in iCloud to upload videos and photos. Click Optimise to remove watched iTunes content too.

7. Back up your files

There are no backups except those which we make for ourselves. Backing up is generally a very good idea before making any major change to your operating system but particularly important if you want to roll back to the previous version of macOS.

If you use an external drive for Time Machine, make sure it's connected to your Mac and then click on Apple > System Preferences > Time Machine. Check the date of the latest backup to be sure your file system is current and make a careful note of the date and

time. This is important if you want to restore your system later.

If you prefer to start a back-up manually ensure that the option marked 'Show Time Machine in menu bar' is ticked. Click the icon at the top right and select Back Up Now. Remember that if you choose to restore your system from this point after upgrading to High Sierra, any changes you've made will be lost.

If you use another backup method such as syncing files in your Desktop and Documents folder to iCloud, make sure that any important data is moved there.

Remember that if you don't use Time Machine, you won't be able to restore applications and saved data purchased outside the Mac App Store. Either run a Time Machine backup now or make sure you have the necessary serial numbers/login information for apps so you can reinstall if necessary.

And don't forget that other users on your Mac may have installed applications using their own Apple ID. Check to make sure they know their Apple ID password before upgrading. You can never be too safe when it comes to backing up!
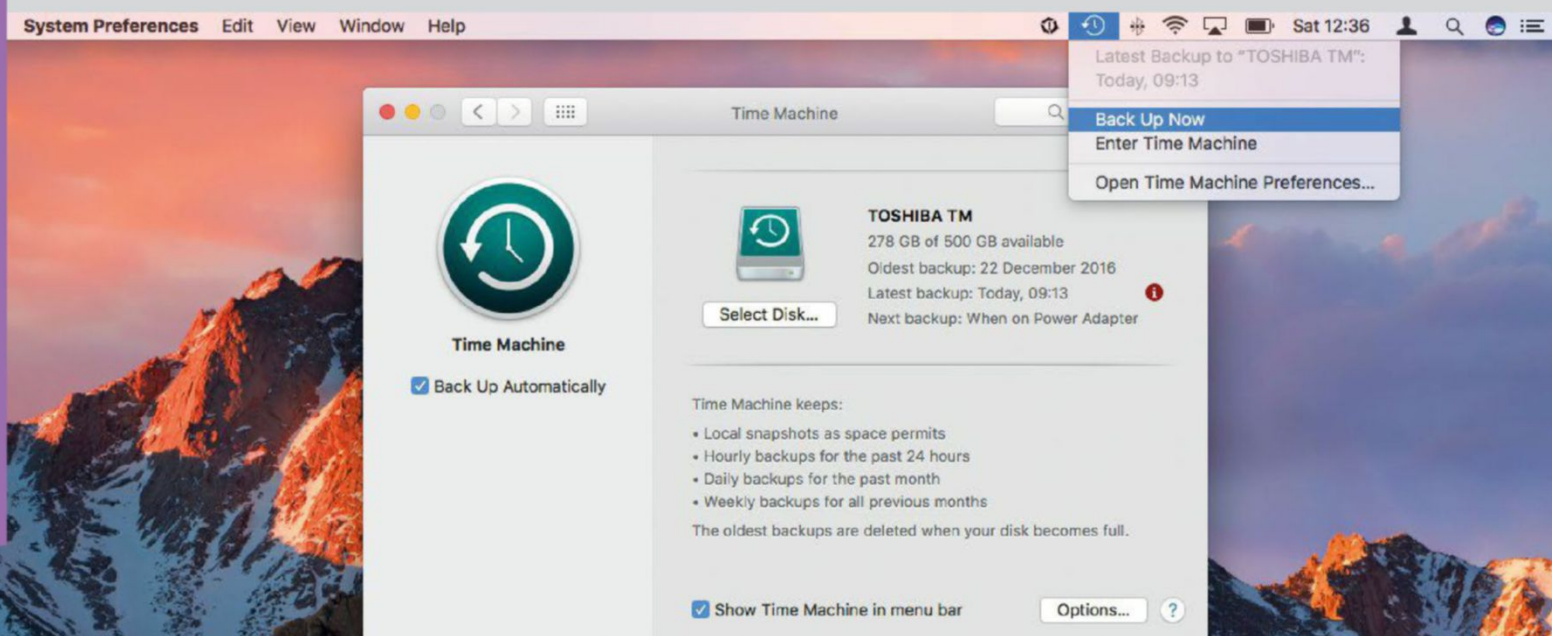
Q: macOS 10.13 High Sierra - Compatibility

Hi there folks,

I was just wondering is my Mac Pro will be compatible with macOS 10.13 High Sierra once it comes o

I've attached a picture of my specs.

Sincerely,

Model Name: Mac Pro
Model Identifier: MacPro5,1
Processor Name: 6-Core Intel Xeon
Processor Speed: 3,46 GHz
Number of Processors: 2
Total Number of Cores: 12
L2 Cache (per Core):   256 KB
L3 Cache (per Processor): 12 MB
Memory: 64 GB
Processor Interconnect Speed: 6,4 GT/s
Boot ROM Version: MP51.007F.B03
SMC Version (system): 1.39f5
SMC Version (processor tray): 1.39f5
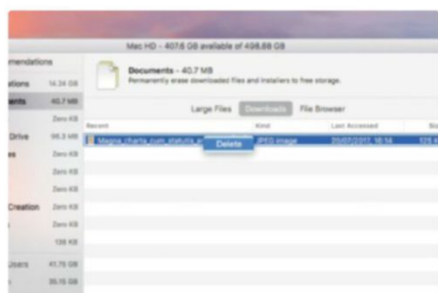
3 Reduce clutter

If you need to free up more space, click Review Files in the Reduce Clutter section. Click on Downloads then go through and ⌃-click to delete any files you don't need.

8. Run First Aid on your disk

If any system files on your Macintosh HD are corrupted, the upgrade process may fail. You can dramatically reduce the chance of this happening by checking for and repairing damaged files.

Close any applications that are currently open and then click on Spotlight at the top right of the screen. Type Disk Utility into Spotlight and press Enter. Click Macintosh HD on the left-hand side and then on the First Aid button at the top, then Run. Disk Utility will inform you if the repair has been successful.

9 Anticipate issues

As with any major upgrade, you may encounter some issues using High Sierra. The new OS automatically replaces the former HFS+ file system with APFS (Apple File System) if you have a flash drive that can support it. While this is super efficient for things like encryption and taking snapshots of your machine, it could cause a few headaches with plugging external drives into your machine then using them on older systems, or with any Time Capsule devices you have.

Your first port of call for any issues should be AppleCare. Visit getsupport.apple.com in your browser to arrange a live chat or callback if you have any questions prior to upgrading, but we'll cover these problems in future issues.
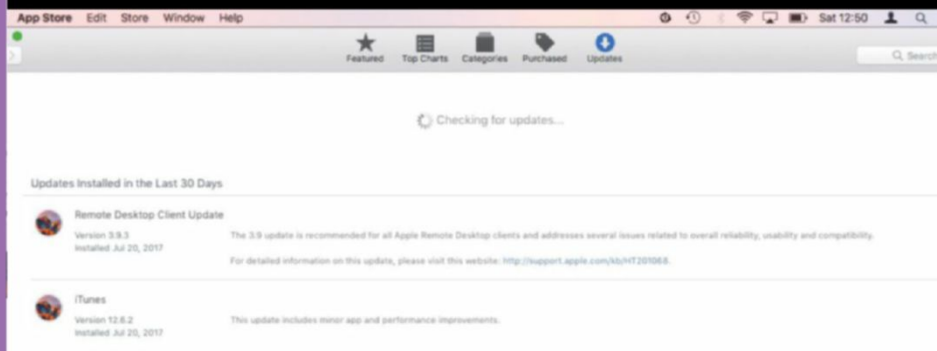
10. Update , update, update

Click on the Updates button in the App Store window to check if you have the most recent version of both macOS Sierra and any apps. If any updates are available choose Update All. This ensures a much smoother upgrade. If you're not currently running macOS Sierra on your machine, you must make sure you have at least OS X 10.8 Mountain Lion before upgrading. Click Apple > About This Mac if you want to check your OS version. If you're running OX 10.7 Lion, follow the steps at bit.ly/lion_to_high_sierra to install macOS Sierra on your machine before upgrading to High Sierra.

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GENIUS TIPS

EDITED BY **HOWARD OAKLEY** ›

EXPERT ADVICE

Our resident genius solves your Mac and iOS problems

Transfer and edit PDFs

Q I need to edit some old documents created using Serif's PagePlus X9 program for Windows. Are there Mac apps, which will allow me to edit them as PDF files while preserving their fonts?
by B R I A N C A V E

A There are several excellent Mac apps which will edit PDF documents, ranging from PDFPen Pro to the full version of Adobe's Acrobat CC. However, PDF isn't a format which is intended to support much in the way of editing, and you may be better off saving your documents in another format such as EPS, if you can.

Acrobat CC and others allow you to make adjustments to pages in a PDF document, corrections, and to export the elements of each page. You could, for example, copy or save the text and graphics and then assemble them in another page layout app, such as Pages. However, Acrobat CC and the like don't give the same control over the layout and content in the way that PagePlus or Pages do.

If you wanted to work on fully editable documents from PDF files, at present your best option would be to use QuarkXPress; QuarkXPress can analyse the contents of the PDF and convert it into text and other objects within a proper editable page layout.

You'll also need the same or compatible fonts installed on your Mac, or all the text on every page will have to be reflowed to accommodate the change to a different font.
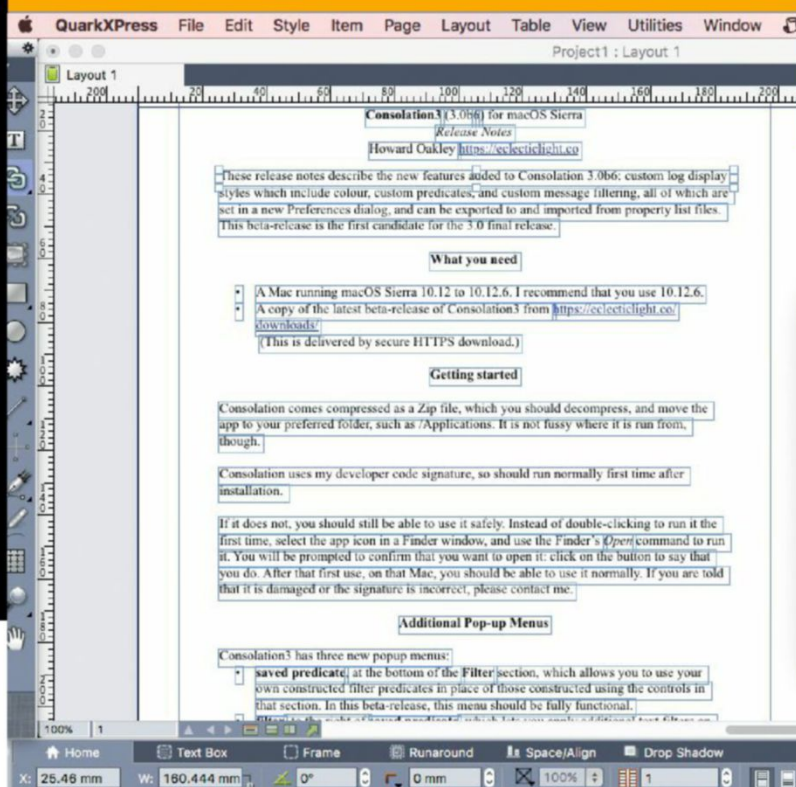
PDF chops text up into short sections. One of the tedious tasks after conversion is to join the bits up again.

iOS software ❯

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

iMessage issues

Q When I try to send someone a message or text using my iPhone, it offers to add handwritten content. Is this just the way that I'm holding it, or is this an unwanted feature?
by ANDREW PRITCHARD

A When you're composing and sending messages on your iPhone, be careful how you hold it and what you tap; its controls are fairly tightly spaced together and it's easy to tap the wrong one.

To start writing your message, hold your iPhone in portrait mode. When some iPhones running some versions of iOS are held in landscape mode, they may assume you're that you're going to compose an animated handwritten message. iPads can be used in either orientation: you have to tap the

To the right of your text is a microphone icon, which you can use for sending audio messages

handwriting sign on the keyboard to start a handwritten message.

The left-most of the controls – a camera – enables you to add photos and video to your message. The heart icon with two fingers on it is Digital Touch, which enables you send a freehand sketch and various animated images including taps and heartbeats.

The icon bearing the letter 'A' shows a drawer of different apps which you can use with messages, including stickers and animated GIFs. To the right of your text is a microphone icon, which you can use for sending audio messages.
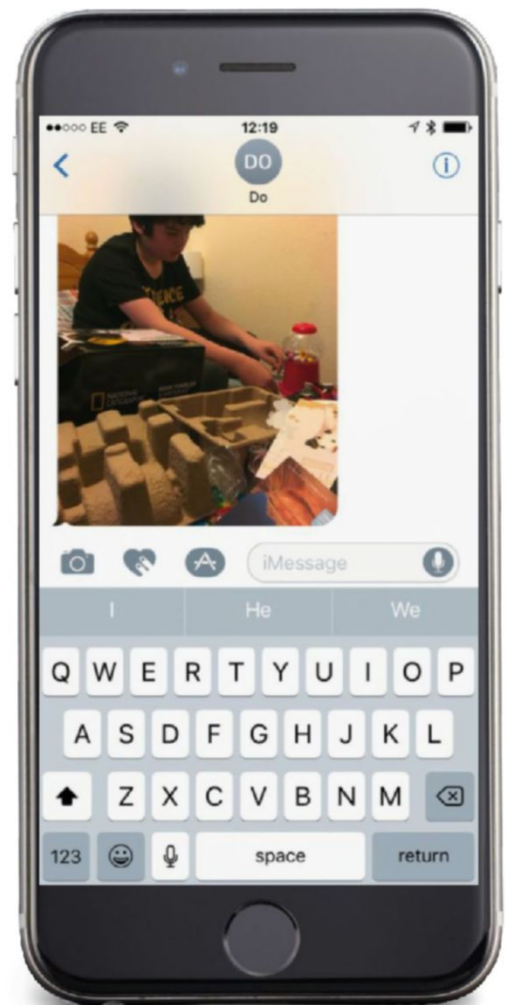
There's little space to start typing a message on most iPhones, and nearby controls are easily tapped by mistake.

If you inadvertently tap any of these icons, swipe their editor sheet down, tap the insertion point back into the text box, or tap Cancel to get rid of it. Finally, when you tap the Send tool to despatch your message, don't touch and hold it, since this may bring up the iMessages' bubble effects pane.

This may seem a minefield, but once your fingers get used to it, errors are normally few and far between.

Peripherals ›

We help to solve your hardware hassles, from problematic printers to misbehaving mice

Peripherals quick-fire questions ›

How to get rid of unwanted HP printer Utilities?

› If you replace an old HP printer with a different brand that may leave tools for the previous model hanging around and cluttering up Launchpad. Trash any alias to them from Applications/Utilities, before removing the folder named 'hp' in Library/Printers.

Why won't my Wi-Fi printer use 5GHz?

› Some older printers don't support the 5GHz Wi-Fi standard, or may be incompatible with new devices operating at that frequency. If they have problems, they should automatically switch to 2.4GHz, but you may need to give them a hand by ensuring your Wi-Fi base station supports both 2.4GHz and 5GHz bands.

Hard drives for a Mac Pro

Q Which 1TB to 2TB external hard drives – portable and desktop – should I get for my Mac Pro?

by TONY MANNING

A There's a huge choice of branded and self-assemble units, but your solution hinges on whether you have a current (Late 2013) Mac Pro, or an older tower model.

The current model works best with Thunderbolt devices, which greatly limits your choices, and makes it hard and costly to buy a case and fit your own choice of storage drive. If that's the case then you'd be better off with a Transcend StoreJet 300 for Mac or an equivalent portable model from LaCie, G-Technology, or a similar brand. You have to accept the make of the included drive, unfortunately. The same manufacturers also offer desktop models.

There's an overlap in performance with the better USB 3.0 drives, depending on the chipset used to drive the interface. If you can, select models with both Thunderbolt and USB 3.0 ports for future compatibility.

Older Mac Pros can be connected by FireWire 800, which has dwindling support, or, if you install an external drive interface card, eSATA. You could then buy separate cases and storage drives, which would then enable you to select your favourite make, such as HGST (formerly Hitachi), in a more durable enterprise specification.

One final point to bear in mind is whether you intend to upgrade to macOS High Sierra, which uses Apple's new APFS file system. This has been optimised for use with SSDs, although it should still operate perfectly well on hard drives too, there's just no advantage to using it on these models. If you're likely to move to APFS, then look seriously at buying SSDs instead so you'll see the benefit.

Shift key goes solo

Q Since updating to Sierra 10.12.6, the ⇧ key on my Apple wireless keyboard misbehaves with other modifier keys in Adobe apps. For example, holding ⌥ and ⇧ while trying to draw a square from the centre out in Photoshop, behaves as if only one key is being held, not both. This applies to both my keyboards, wireless or cabled. What's wrong?
by SEAN CROZIER

A If the rest of the update went fine, and you have no other glitches, this probably results from a driver or other extension, and has been reported with Wacom graphics tablets.

A good test would be to disable third-party extensions by booting your Mac using Safe Mode (press the Power button then hold ⇧ until the Apple logo appears), but that may make it impossible to use those apps too. If you can use them in Safe mode, test to see if this still occurs. If the bug disappears, look at recently-installed drivers, such as Wacom's.

If necessary, download earlier and later versions of the driver, and see whether either makes any difference. You may find that the previous version does the trick.

To review third-party extensions, look in the Extensions section of System Information. Order them by the 'Obtained from' column.
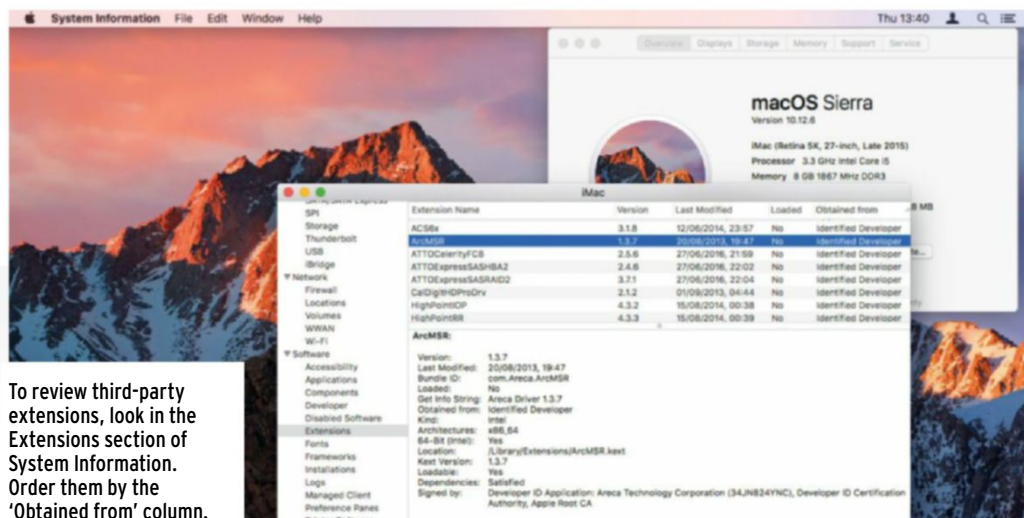
Peripherals quick-fire questions ›

How many Bluetooth devices can I use?
› Classic Bluetooth supports up to seven 'slaves' in its Scatternet, but Smart LE technology is more flexible. Much also depends on the use: although your Mac should pair with up to seven devices, if you use one for audio streaming that will limit others.

Which mouse is best for arthritis?
› If you struggle to cope with a regular mouse or trackpad, look at a trackball substitute. Apple sells the AbleNet BIGtrack for £80, which you should be able to try at your local store. Logitech also has wireless models.

Self-disconnecting printer

Q Printing to my Epson DX7400 printer works normally, but its Dock icon and pop-up windows warn that it isn't connected. This started after updating to 10.12.5, with the printer connected to my Mac mini and shared from there. Is this a network problem?
by DAVID WARD

A Before worrying about whether there is a network problem, first check the version of the printer driver you're using. If you have Epson's own software, note that it hasn't been updated since November 2016, and will probably be version 2.22. If you have the driver provided by macOS Sierra, it should be version 9.0, and updated via the App Store.

Uninstall any older driver and other Epson software first. Next, in the Sharing pane on your Mac mini, turn Printer Sharing off. Then in the Printers & Scanners pane on both Macs, select the Epson in the left side and click on the '–' tool below to remove the printer. Close that pane and open it again, and add the printer back using the '+' button. That may trigger a software update in the App Store app, to fetch and install its current driver.

Once you've turned Printer Sharing back on, install the printer again on your other Mac, and you should find it remains properly connected. If not, check that your network is all in good order, with all network cables securely inserted and safely routed.

Printer problems? Make sure you have the latest drivers from the App Store.
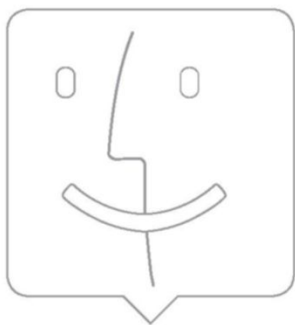
Mac software ›

Shine a spotlight on sagacious solutions to your most maddening Mac maladies

macOS quick-fire questions ›

How do I transfer Photoshop CC to a brand new Mac?

› What you need to do is deactivate it on your old Mac, then you should be able to activate it and install it fully on the new one. Adobe provides a complete guide at bit.ly/ newmac_activate.

How can I open old Word docs when new Word won't?

› Microsoft Word more recent than Word 2011 refuses to open many old Word documents. You can recover their text contents as an option when opening them, but the best solution is to find a Mac or PC with Word 2011 or earlier and convert them all. Word 2011 runs in Sierra, but most users find that they can't install a new copy.

Mail merge made easy

Q **Can I do a mail merge using Apple's Pages, or is there a better way?**
by DON WILSON

A You used to be able to mail merge to print from Pages, but in recent years this has become increasingly difficult and you probably won't get it to work now.

Major office suites normally still feature mail merge to print. It has always been an important benefit of Microsoft Office, and Microsoft has a series of excellent tutorials at https://support.office.com/en-gb/article/Mail-merge-507b5468-f771-485d-9ef0-27857168a266, which shows this being performed in Word 2013. The current Word version 15 for macOS can be used similarly. OpenOffice.org, which is free for macOS, supports this, with a complete tutorial at bit.ly/office_mail_merge. That suite includes a wizard which steps you through the process, and provides previews. Essentially, you store details of the addressees in a spreadsheet or database, using standardised field names. Those match marked up insertion points in your word processor document: for example, the field 'title' might be marked up as ‹title›. When you perform the merge, copies of the document are generated which substitute personalised information for the mark-up, in the required number of pages. Address labels should also be produced ready for printing.

If you want to send merged email messages rather than printed letters, two apps from the App Store which you should consider are Mail Merge and SerialMailer. There's a demo version of Mail Merge available from its support site, while a Lite version of SerialMailer from the App Store should give you a good idea of how that works.
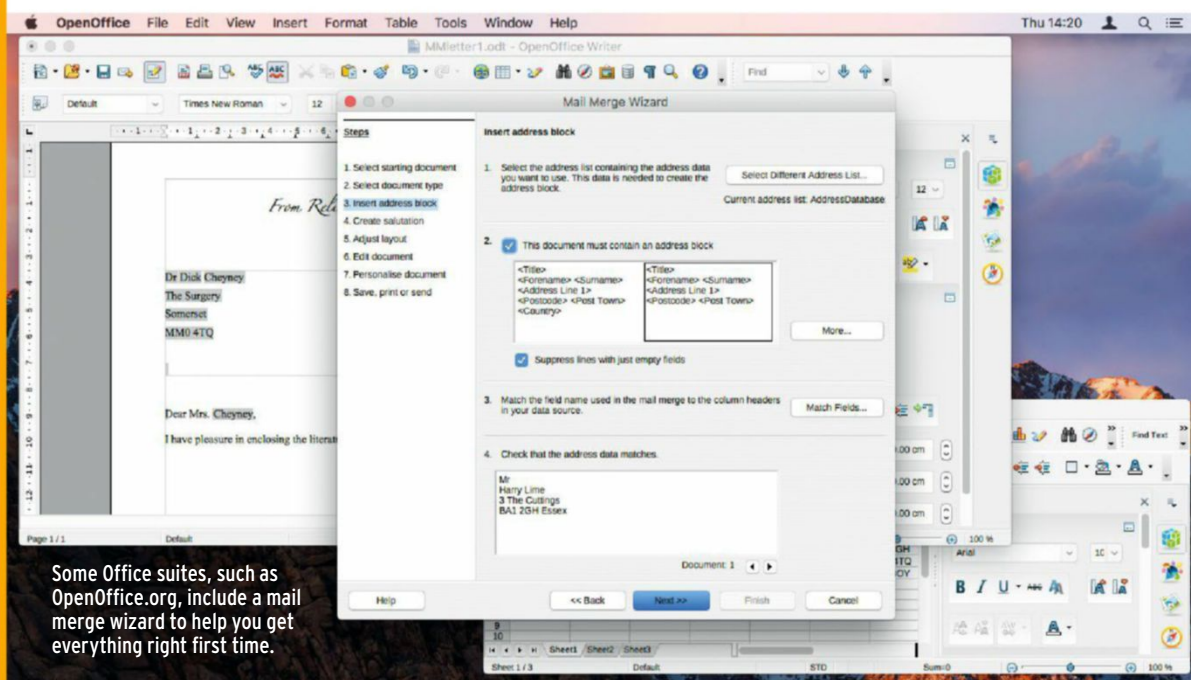
Some Office suites, such as OpenOffice.org, include a mail merge wizard to help you get everything right first time.
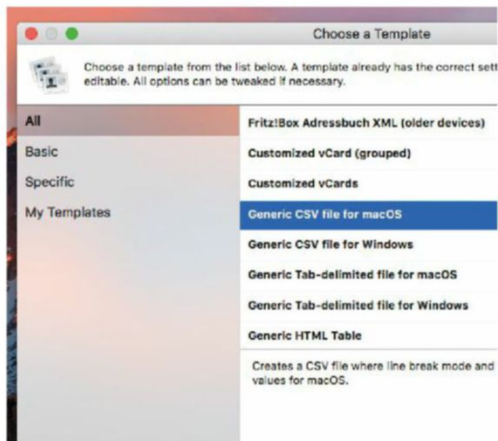
Exporter for Contacts offers a good choice of different export formats. For spreadsheets, CSV is a good bet.
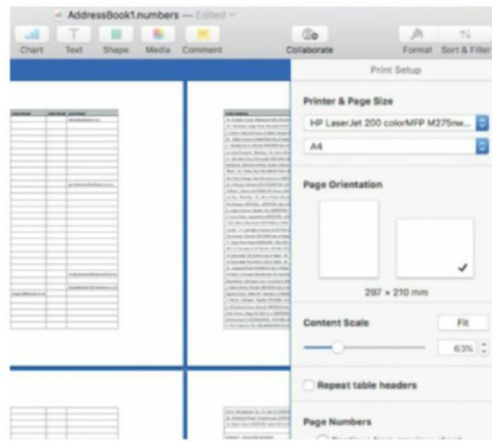
Printing from Numbers or Excel provides a wide range of options and scaling to fit your address book information.

Printed address book

Q How can I print my address book from Contacts, with at least six entries on each page?

by **LUCY CLARKE**

A Unfortunately, Apple's Contacts lacks the flexibility for that, and in Sierra can crash when setting its print format up. FileMaker used to offer Bento, which was ideal, but its only solution now is to import your address book into FileMaker, a full-scale database and expensive overkill.

Most third-party address book apps offer limited support for printing, other than address labels and envelopes, and so don't really offer the flexibility you need.

If you want full control, one good solution is to export your whole address book using Exporter for Contacts (available from the App Store), then import it into a spreadsheet of your choice. Although this may seem laborious, when you've been through it once and set the workflow up, you'll find it much easier to use in the future.

Mac software quick-fire questions >

Are there any Mac housekeeping tools that I can use?

> Few users should need such tools, and even they should only do so if they're confident that they understand exactly what they do. Manual housekeeping may seem a pain, but it's less likely to trash important documents or make your system unstable.

How can I view and print a DVI file?

> DVI is a device-independent file format created for the TeX typesetting system. The free TeXShop app from bit.ly/tex_dvi can open DVI files and convert them to PDF.

Sierra and Adobe CS5

Q I haven't yet upgraded to macOS Sierra, as I remain concerned that my key apps in Adobe CS5 will no longer work properly, and I don't want to subscribe to an Adobe CC plan. Would I regret upgrading now?

by **GLEN MILLER**

A Experience with Adobe CS5 and CS6 is that they are largely compatible with Sierra, and you are very unlikely to experience significant problems with them. Previous versions of Creative Stuite are increasingly likely to suffer

more serious issues, however, and the oldest would prove unusable.

Once you have upgraded, but before you try running any of the CS5 apps, you'll need to download and install Apple's ancient legacy version of Java from bit.ly/legacy_java. Without that, Adobe's CS5 apps won't run. That old Java will peacefully co-exist with more recent releases of Java supplied separately by Oracle; unfortunately

if you want Java for other purposes, you will need to need to install both Apple and Oracle versions of Java.

Once that's installed, CS5 apps should work normally. Some users report that Dreamweaver, InDesign, and Illustrator sometimes generate crash reports when you quit them, but they otherwise appear fully functional. Photoshop CS5 and CS6, in particular, seem stable and happy in Sierra.

Adobe Photoshop CS5 and CS6 still work well in macOS Sierra 10.12.6, provided that you install Apple's legacy Java first.
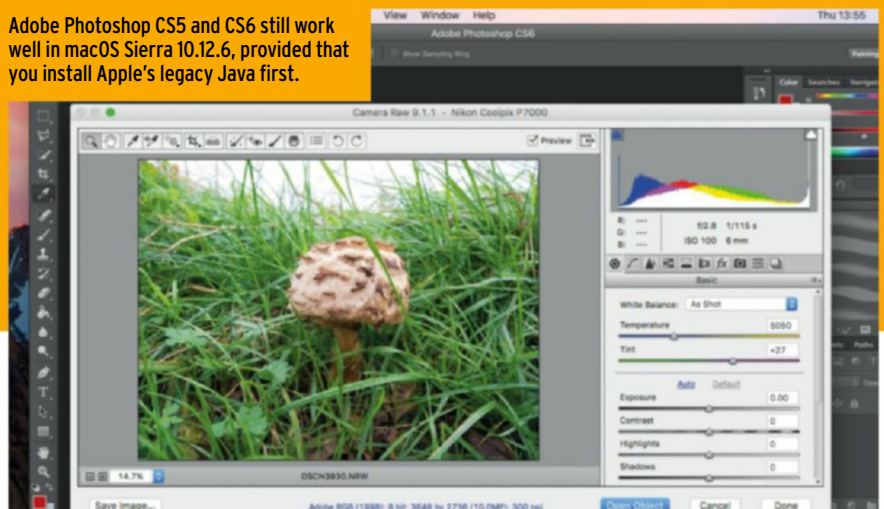
R.I.P

Gone but not forgotten…

Apple has shelved a huge number of products over the years. **Alex Blake** remembers the most notable, and why they got canned

These days, Apple is known as a perennial winner, the company with the golden touch, but it wasn't always so. The firm that made the iPhone and the iMac also made iTunes Ping and the infamous 'hockey puck' mouse.

Yes, Apple has made its fair share of stinkers down the years, products that no one wanted or simply didn't work. From the Newton to the Pippin, Apple doesn't always get it spot on, and it certainly isn't shy about giving something the boot if it's not meeting its lofty expectations.

Of course, there are also many highly popular Apple products that are no longer with us today – even being a successful product loved by many may not be enough to save you from being phased out at Apple. From the iBook to iWeb and the iPod to the eMac, good sales figures and loyal fan bases couldn't keep these products on the Apple Store shelves indefinitely.

Despite its successes, even Apple isn't immune to market pressures, failed launches and low demand. If a product's time has come and gone, it's inevitably taken out to pasture by the bigwigs at the top.

So let us take you on a trip down memory lane to revisit some of the more interesting Apple products, launches and ideas that have been shown the door over the course of the company's storied history.

1 The iPod range

Given the recent demise of the iPod shuffle and nano, it only seems right to kick off this nostalgia trip with the iPod family.

The product that redefined the mobile music market, the iPod helped kill off portable CD players and costly, ugly flash players. It was Apple's first big hit outside of its desktop division, and paved the way for the iPhone.

Later additions like the iPod nano and shuffle built on that success, and were cheaper options that solidified Apple's portable music dominance.

So what happened? Simply put, the iPhone happened. The iPod was ultimately cannibalised by another Cupertino hit. The iPhone blended the functions of a phone and a music player (plus much more) – why carry an iPod and a phone with you when you can have one device that replaces both?

It revolutionised digital music, but couldn't hold on to the crown. We still miss its clever scroll wheel.
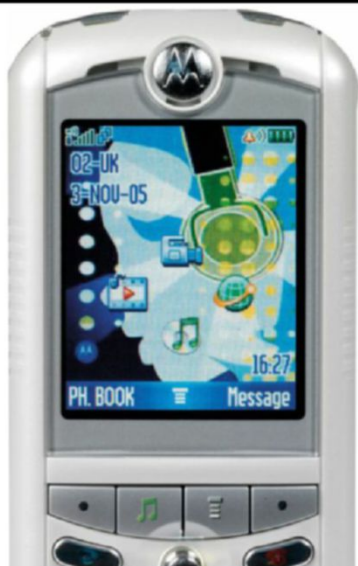
2 ROKR phone

Before the iPhone, there was the ROKR phone. An ill-fated collaboration between Apple and Motorola, the ROKR was intended to showcase the power of iTunes on a mobile phone back in 2005.

Sadly, it was a disaster. You'd think any phone that's the first to support iTunes would have a strong musical offering, but not the ROKR. Despite accommodating MicroSD cards up to 1GB in size, the firmware only allowed it to hold a maximum of 100 songs, which undermined its position as a music-oriented phone. This was compounded by slow transfer speeds (it didn't support USB 2.0) and a total lack of wireless transfer capability.

The nail in the coffin was Apple's simultaneous announcement of the iPod nano, which Motorola CEO Ed Zander claimed undercut the ROKR. Apple learned its lessons, launching the iPhone two years later.

3 iTunes Ping

Seeing the success of Facebook and Twitter, Apple tried to get in on the social network game with iTunes Ping in 2010. It let you follow musicians and connect with your friends, all within iTunes.

But the problems began almost from the word go. During the Ping unveiling, Steve Jobs touted its Facebook integration. However, due to a payment dispute between Facebook and Apple, Facebook blocked Ping integration almost immediately.

There was another big problem: spam. In a bizarre oversight, Apple neglected to put any spam filtering system in place, allowing accounts to flood Ping's comment areas with suspicious links. Some artists even reported that fake accounts had been set up in their names.

While Ping was closed down in 2012, Apple hasn't given up on the idea. Apple Music's Connect feature is a spiritual successor to Ping, but also seems to be struggling to find its feet.

4 Power Mac G4 Cube

Rarely has Apple built a prettier Mac than the Power Mac G4 Cube. A sleek metal box that seemed to float inside a clear plastic casing, the Cube was a slice of pure Jony Ive aesthetics. It was somewhat reminiscent of the NeXTcube that Steve Jobs' NeXT manufactured before being bought by Apple, only in a lighter, clearer form.

The only problem was that no one really wanted one. At $1,799 it wasn't outrageously expensive, but it was perceived as being poor value for money, starting at £200 more than the similarly equipped Power Mac G4.

Early models also had a tendency to exhibit small cracks in the case – hardly desirable in a Mac that's meant to encapsulate design perfection.

Price drops, upgraded graphics cards and extra bundled software couldn't resurrect sales, and the Cube was discontinued in 2001. These days it lives on as an exhibit in the New York Museum of Modern Art.

5 eMac

Apple cut its teeth in the education market, so it was a no-brainer to launch a Mac aimed solely at schools back in 2002.

Released as a cheaper alternative to the Anglepoise-style iMac G4, the eMac – short for education Mac – actually stood up well to its more expensive cousin. The main difference was the CRT display housed in the eMac, which made its entry-level model considerably more affordable than the LCD-equipped iMac G4. That made it popular, and it was opened up for sale to retail customers just one month after launching.

However, Apple decided to restrict it to schools again in October 2005, without giving an explanation. The move may have been motivated by a desire to shift customers onto the recently launched Mac mini, while falling LCD display prices probably also played a role. Whatever the cause, the eMac was dropped just nine months later and replaced by an 'education' version of the iMac Core Duo.

6 Apple USB Mouse

Every veteran Mac user's least favourite input device, the Apple USB Mouse takes pride of place in the pantheon of Apple mistakes and missteps.

Launched alongside the Bondi Blue iMac in 1998, the 'hockey puck' mouse was a nightmare to use. Its small size and round shape made it hard to orient, and the sole button was difficult to find without stopping your work and looking down at the device. Its short cable was the icing on the cake.

So great was the user irritation with the USB Mouse that it spawned a third-party market for adaptors, cables and even shells to change its shape to make it easier to use.

It was Apple's first USB mouse, meant to take people into the future of input devices, but instead drove many back to their old Apple Desktop Bus mice instead. Oops.

We have a blue Apple USB Mouse at MacFormat Towers. But it's only for posterity – we don't dare use it.

7 Macintosh Portable

Launched in 1989, the Macintosh Portable was Apple's first stab at the nascent laptop market, and it showed.

It had some pretty nifty features. With an impressive active matrix LCD display that was crisp and quick, and a clever trackball input device that could be switched to either side of the keyboard, it showed some touches of classic Apple flair.

Still, at 7.2kg it rather strained the definition of 'portable'. There was also the issue of cost. At $7,300 for a model equipped with a hard drive (about £11,350 today), its princely price tag meant it wasn't an option for those with faint hearts or light wallets.

There was another serious issue, though. It could only run on mains power if a battery was installed; if the battery could no longer hold a charge, you couldn't run it on mains power at all. Consequently, it's nearly impossible to find a working, usable Macintosh Portable in the wild today.

8 Titanium PowerBook

The titanium version of the PowerBook G4 was a special design moment for Apple for a number of reasons.

It was Apple's first attempt at a titanium laptop. At the launch event in 2001, Steve Jobs was almost child-like in his excitement: it was made from titanium, like the spy planes, he enthused. It was only an inch thick (0.7 inches less than the PowerBook G3). Oh, and the Apple logo on the lid was flipped so that it was the 'correct' way up when in use. This minimalist, metal-led design was the precursor to a number of other notable products from Apple, including the Power Mac G5, MacBook Pro and later models of the iMac.

Apple's fling with titanium was short-lived, however, and it introduced an aluminium PowerBook G4 in February 2003 – nine months after which the titanium model was phased out. But its radical reinterpretation of laptop design aesthetic had a lasting influence that's still evident today.

9 Clamshell iBook G3

While the titanium PowerBook G4 was all sleek, shiny, high-grade professionalism, the Clamshell iBook G3 was fun, light and unpretentious – it was the iPhone 5c to the PowerBook's iPhone 5s.

It was launched in 1999, shortly after the striking iMac, and its design inspiration is clear. Complete with bright colours and an eye-catching clamshell design, the iBook was aimed squarely at entry-level and education customers. It was lower-specced than the PowerBook, but was the first mass market laptop to come complete with built-in Wi-Fi.

The design rammed home the idea that having a computer could be cool and fun, and needn't be restricted to the jet-set business class or high-tech nerds. It was something to be seen with, to be proud of.

Still, that didn't stop Apple from radically changing the design again in 2001, a move that began its focus on translucent white plastics.

10 iWeb

For a whole host of Mac users, the iWeb app was their first introduction to web design. In typical Apple fashion, it made easy something that people saw as alien and confusing. It let you set up a ready-made template and simply replace the placeholder text with your own. Adding images and videos was as straightforward as dragging and dropping them into place, and when you were ready for the world to see your design, all you had to do was hit 'Publish' and your website would go live on Apple's MobileMe platform.

It wasn't all smooth sailing for Apple, though. Making iWeb websites compatible across a number of web browsers proved to be a headache. Meanwhile, Apple began focusing on uniting many of its software offerings into iCloud, and its rivals overtook iWeb. The app died when Apple closed MobileMe in 2012, but it lives on in the hearts of the many web designers who got their first taste with iWeb.

11 MobileMe

After talking about iWeb, we feel MobileMe deserves a mention here too. It was the service that morphed into iCloud, but its launch in 2008 was a disaster.

Apple released a suite of internet services called iTools in 2000, later updating it to .Mac in 2002. It was renamed MobileMe in 2008, but the switch was plagued with issues. Users couldn't log in to the new system, and some inadvertently got charged the subscription fees during their free trial.

And although users could originally sync their Microsoft Outlook accounts with MobileMe, this was then removed only a short while after launch, leaving many people in the lurch.

Even Steve Jobs admitted, albeit in an internal company email, that launching MobileMe at the same time as the iPhone 3G and the App Store was a mistake, saying it was done too hurriedly and was "not up to Apple's standards". Its time was up – MobileMe lasted just three years, being replaced by iCloud in 2011.
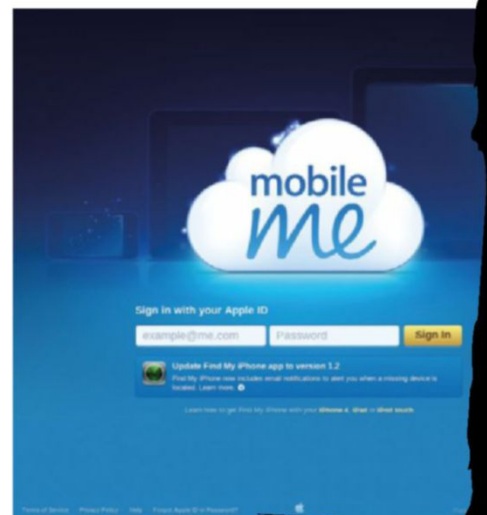
12 eWorld

During the nascent era of the world wide web, eWorld was a study in what could have been. Released in 1994, it was a suite of web services such as email, forums and a web browser, and its playful interface was designed to resemble a small city, with services housed in buildings. It was innovative, but never received the support it needed.

Priced at $8.95 a month, plus $7.95 an hour from 6am to 6pm and $4.95 an hour at other times, it was pretty expensive, and Apple never lowered the price to stoke up demand.

It was also launched at a bad time for Apple. The company was in dire financial straits, posting a $68 million dollar loss in a single quarter in 1995. CEO Michael Spindler decided there wasn't enough cash to market eWorld, so it shipped with new Macs, with just a pamphlet in the box and an icon on the desktop. With very little backing from Apple, it couldn't compete with the behemoth that was AOL and was shut down in March 1996.

13 Newton MessagePad

The Newton MessagePad, Apple's first experiment in tablet computing, is always high up on the list of Apple failures. While it's hated by many, it's still mourned by a few.

Its hottest feature at its 1993 launch was handwriting recognition. This could recognise cursive, printed and mixed handwriting anywhere on the screen, which was much better than its rivals. It also turned out to be its worst feature. It simply didn't work very well, leading to it

being skewered in reviews. It could take months to learn your handwriting, and its AAA batteries drained in record time.

The software was vastly improved in the next model, and the Newton started to become the device it was always meant to be. Then, in 1997, Steve Jobs returned to Apple – and killed the Newton.

It was only just starting to gain traction and sales, and Apple needed money yesterday; the Newton had to be jettisoned. Nevertheless, it still has something of a cult following today.

14 Pippin

Another widely panned Apple product, the Pippin was only on sale for about a year. Apple never intended it to be a standalone product – rather, it was meant to be an open platform that other companies could license, use and alter, much like VHS.

However, only two companies – Bandai and Katz Media – took Apple up on the offer. Coupled with a lack of developers for the platform, it was an unattractive prospect for consumers.

There were many other problems. Bandai attempted to market their version of the Pippin as a computer, not a games console, which confused consumers. The Pippin struggled to compete with the Sega Saturn, the Nintendo 64 and the Sony PlayStation, which were already established in the games console space, and the Pippin's $599 price – three times higher than the Nintendo 64's and double the PlayStation's – was way too high.

Like the Newton, the Pippin was axed in 1997 when Jobs returned to Apple.

15 QuickTake

Apple isn't always early to market, but it was with the QuickTake, one of the first consumer digital cameras, which was launched in 1994. With $12 billion spent annually on photography in the US at the time, it's easy to see why Apple ventured into the market.

The QuickTake let you take eight photos at a resolution of 640x480 (0.3 megapixels), 32 at 320x240, or a mix of both. It had a built-in flash function, but no way to zoom in or change the focus.

You also couldn't preview or delete individual photos on the camera, only on your Mac.

Though an innovative device, the QuickTake was stymied by the Apple brand – consumers didn't associate it with photography, and similar cameras from the likes of Kodak, Fujifilm and Nikon all sold better.

Yet another Apple product to fall victim to Steve Jobs' blade on his Apple return in 1997, the QuickTake was on sale for a mere three years.

Are you still using any of these devices? Let us know! editor@macformat.com

LOVE YOUR MAC

EDITED BY LUIS VILLAZON >

REUSE OLD KIT
Inspiring ideas for revamping old Apple kit

Restoring classic Macs

Not to brag, but I have a wall of classic Macs in my sitting room. They are stacked in a grid four across and three high, and they neatly fill the alcove next to the TV. At the moment, they are just sculpture.

The 12 Macs in the Haq Collection (see issue 315 for the history) include six Mac SE/30s and one Mac SE, and this month I'm tackling those. It is years since any of them were last booted up, and a lot of that time was spent in a damp caravan. Most have some rust on the external ports, and it's likely that some of the electrolytic capacitors on their motherboards have leaked, adding more corrosion there. I don't expect any of them to still boot, but hopefully they will all be faulty in different ways. With enough working parts, I may be able to combine them into at least one working Mac. >

The Mac SE was made between 1987 and 1990.

CLASSIC APPLE KIT: INTEL iMAC

> It seems strange to call an Intel iMac 'classic', but the Early 2006 model predates the first-generation iPhone, and it's even stranger to imagine a world before that. The Early 2006 iMac was the first to switch from G5 processors to Intel chips. It used the Core Duo CPU, which boosted performance almost threefold, and shipped with 10.4.4 Tiger, which was the first Intel version of OS X. Alas, the Core Duo is a 32-bit processor, so this iMac can't run the 64-bit only Lion.
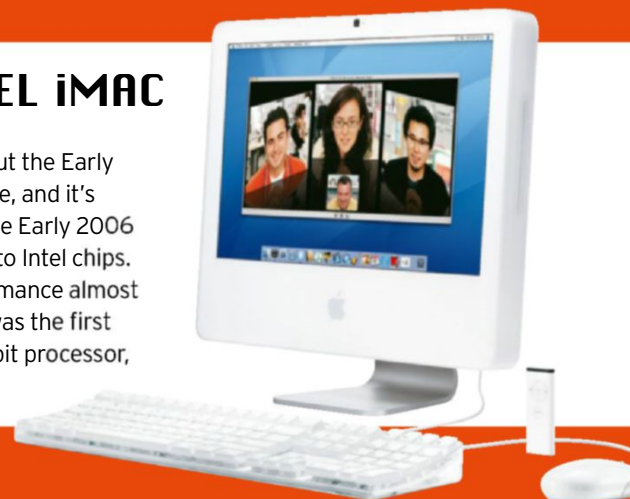
Inside a Classic ›

The Mac Classic is an amazing piece of
Apple engineering. Here's what's inside

The Mac Classic's
integrated handle
makes it easy to
carry around.

1

Cathode ray tube
› A 9-inch 512x342 black
and white screen. Many
PCs still had green and
black displays back then.

2

Expansion slot
› The SE was the first
Mac to use the Processor
Direct Slot (PDS). This one
contains a DaynaPORT
network card.

3

Drive caddy
› 1.4MB floppy disk drive,
plus an optional 20MB or
40MB SCSI hard disk.

4

Motherboard
› Hidden underneath
everything else is the
motherboard, with a
16MHz 68030 Motorola
CPU and 1MB of RAM
(expandable to 128MB).

5

Ports
› Two ADB ports for
keyboard and mouse, Two
DIN-8 serial ports, plus
ports for external floppy
and SCSI drives.

6

Power supply
› The dangerous high-
voltage capacitors for
the screen are exposed.
Leave the Mac switched
off overnight before
removing the case.
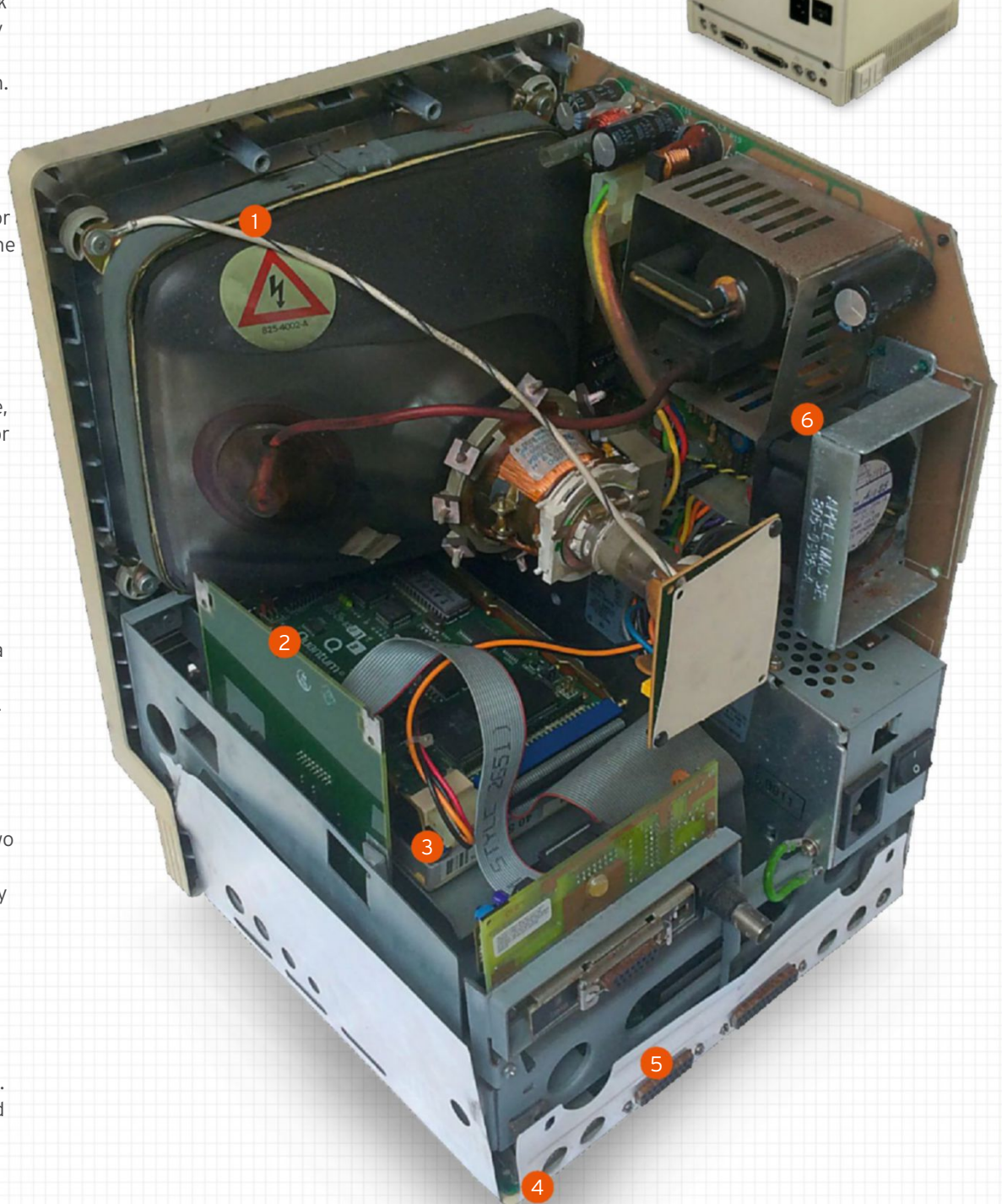
Classic combination ❯

Can we take seven slightly dysfunctional Macs and turn them into one working one? You bet!

Hardware quick-fire questions ❯

Why do some old Macs use 800Kb floppy disks?

❯ On the early classic Macs, Apple used a custom drive controller that varied the voltage to the drive motor. This made it spin slower when the drive head was near the outer edge of the disk than when it was near the middle. Because the circumference increases as you move outwards, there is more room for data and varying the speed means that none of the available space is wasted. Apple was able to squeeze 800Kb on a floppy, instead of 720Kb for a standard single-sided floppy. Unfortunately, they were incompatible with any other system and Apple abandoned the technology soon after.

Which classic Macs can use 1.44Mb floppy disks?

❯ The SE FDHD, the SE/30, the Macintosh Classic, the Classic II and the Color Classic.

For my initial triage, I set all seven Mac SEs on the kitchen table, plugged them into a couple of four-way power strips and turned them all on. Sorting the results in order from most working to least, I had two that got as far as the grey bootloader screen, before blinking the question-mark-floppy-disk icon at me. Let's call them Alice and Bob. Then two that chimed and made whirring noises, but displayed a garbled image on the screen. We'll refer to them as Cassie and Dan. Then two that made fan noises but otherwise showed no signs of life (Emma and Frank). And finally one that did nothing at all (Gary). That was actually more promising than I had expected.

Alice and Bob probably had fully working hardware and just needed an OS to boot from, and of the two with the garbled screens, Dan showed a pattern that blinked at the right speed for me to think it might also be trying to show me a question mark icon. If I could get the screen working, I might be able to add it to the other two that just needed an OS floppy disk.

The collective noun for Mac SEs is a 'car boot sale'.

Transplant surgery

I have a set of floppies with hand-written labels that claim to be the disks for System 6, but they didn't seem to read on any of the SE drives. That's not too surprising – they are probably at least 20 years old and floppy disks aren't a very durable medium. There is a guy in Arizona called Kevin Rye who will send you a boot floppy for about £12 (rescuemyclassicmac.com), but while I waited for this to arrive, I decided to try something else. All these Macs are the SE/30 model, except for Gary who is a plain SE.

The SE/30 was sold either as a floppy disk-only model, or with an optional hard disk. Now both Alice and Bob seem to have hard drives installed, alhough since they weren't booting they must be faulty. Rather than waste time trying to repair these drives, why not try a transplant from one of the other machines? If the blinking pattern on Dan's screen really is the question mark

HOW TO Remove the hard disk ›

1 Expansion card
The SE/30 has a Processor Direct Slot (PDS) for expansion cards. If there is anything installed here, it is easier to remove the card chassis completely, rather than trying to work around it. This network card has a board controlling the SE/30's ports, as well as the PDS board.

2 Drive caddy
The hard disk sits above the floppy drive. Remove the power and data cables from the drive's rear and undo the drive caddy. It's held in place by two screws underneath the caddy but they are set quite far back. Use a long screwdriver, or tape a screwdriver bit to a stick.
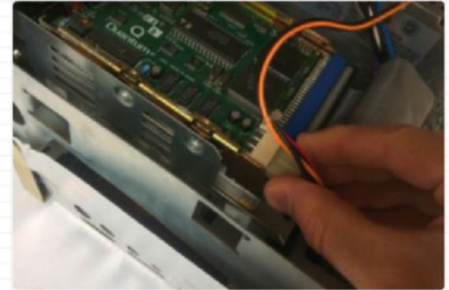
3 Maximum capacity
The SE/30 shipped with a 40 or 80MB hard disk, but you could replace it with any 3.5-inch, half-height SCSI drive. Mac OS, up to version 7.5, supports volumes as large as 2GB and if you install 7.5.2, you could use a 2TB drive. The SE/30 was often used as a server.

---

icon, then his hard disk must be faulty too, but Cassie's drive might still be good.

Breaking and entering
Prepping the Mac SE for surgery is no easy task however. The case is held on by four screws. The bottom two torx-15 screws are easy enough, but the top two are hex screws that are recessed all the way at the back of the carrying handle. This is far too deep and narrow for any of my screwdrivers to reach. In the nineties, when the Mac SE was fairly current, there were various companies selling 'Mac Cracker' kits to let you reach these screws, and you can still find them if you look around (although don't be fooled by crack-a-mac.com, which is an Australian site selling macadamia nut crackers). But my toolbox already has way too many one-use

screwdrivers for getting into games consoles and old computers. So I performed what might just be the dirtiest hack of my life. I found an old length of thin brass tube and just Sellotaped the screwdriver bit to the end of it. I felt a great disturbance in the Force, as if millions of engineers suddenly cried out in terror, but the amazing thing is it worked really well. I don't know why I have been wasting money on nice tools all these years.

So I performed what might be just the dirtiest hack of my life

Once the two cases were open, it was fairly simple to pull the drive from Cassie and install it in Alice (see the How To guide above). When the patient was stitched up and brought round from the anaesthetic, she booted straight into System 6 without a hitch. A similar transplant might also be possible for Bob, assuming one of the remaining non-booting Macs has a working hard disk. That's two out of seven saved, which isn't too bad and the remaining non-booting machines will go on eBay so that other enthusiasts can cannibalise them for parts. Except for Gary. He is a junker and will end up as an aquarium or a flower pot.

You'll need a System 6 or System 7 boot disk for your classic Mac to work.
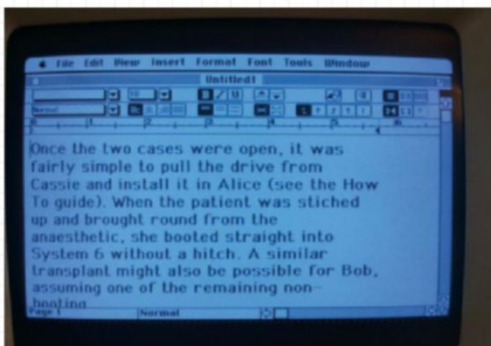
From the ashes of the fallen, a new Mac rises.

Next Issue!
› Luis makes another (almost certainly futile) attempt to get his ancient Apple LISA to wake up. Blink once for yes, twice for no!

APPLE CHOICE

EDITED BY **ALEX BLAKE** >

> HOME SECURITY CAMERAS **p90**

BUYING ADVICE
Our authoritative reviews help you make more informed choices

> Manifesto – our ratings explained

> Our reviews are totally independent; we're not affiliated with Apple or anyone else, nor are we influenced by advertisers. You can trust us to give an honest assessment of a product's worth.

The prices quoted for products are correct at the time of writing and are the best we can find from a reputable online dealer, excluding delivery.

★★★★★
> A brilliant thing in all regards, and worth every penny

★★★★☆
> Strongly recommended; any flaws are only minor concerns

★★★☆☆
> Worth considering, though there may be better options

★★☆☆☆
> Fundamentally flawed; look at alternatives as a priority

★☆☆☆☆
> A waste of your money and everyone's time; do not buy!

> The **MACFORMAT** Awards

> Awarded to a five-star product we believe is truly exceptional in its category. Given solely at the discretion of the Editor.

> Given to a hardware or software product that might not be the very best in its category, but is noted for affordability.

> Our group test winner gets this award for being the best of its kind when pitted against other comparable products.

Fujifilm X-T20

This camera packs a punch

Reviewed by **PHIL HALL**

> £799 (body only) > **FROM** Fujifilm, fujifilm.co.uk > **FEATURES** 24.3MP, X-Trans CMOS III sensor, ISO100 to ISO51200, 4K video at 30fps, 11.8x8.3x4.1cm, 383g weight (body only, including battery and memory card)

The Q button opens the Quick Menu system, giving speedy access to 16 key settings.

Jo says…

> The improvements in this model make it an impressive piece of kit – greater sensitivity range, better focus tracking, and easy-to-use controls. OK, so battery life doesn't compare well to some, and weather sealing would be preferable, but I think the ease of use and great results make it an attractive option.

Fujifilm has taken a lot of the good stuff from the X-T2 and packaged it in a lighter, more affordable body to give us the X-T20. The X-T20 incorporates Fujifilm's latest 24.3MP X-Trans CMOS III APS-C sensor. The ISO range gets a boost as well, with a native sensitivity range of ISO200-12,800, which stretches to ISO100-51,200.

The camera's three-inch touchscreen doesn't offer the same breadth of control as, say, the one on the Canon EOS M5, limiting you as it does to tapping the display to acquire focus and trigger the shutter. You can also pinch to zoom when reviewing images. If you're hoping to be able to toggle and adjust controls on the rear display, we're afraid that you'll be left disappointed.

There's a single SD card slot on the X-T20, compared to the X-T2's two, and it doesn't support UHS-II cards. But it does offer 4K video capture (3840 x 2160) at 30fps, as well as Full HD (1920 x 1080) at 60p, both of which support film simulations. There's an input for a microphone, but not for audio monitoring.

While there's no weather sealing present, as on the X-T2, the X-T20 sports magnesium top and bottom plates which, along with a comfy (if modest) grip and the tactile covering used, make the X-T20 feel like a very solid and quality piece of kit.

Along the top plate and to the right of the viewfinder is the large shutter speed dial, with settings running from 1 to 1/4000 sec plus Bulb, Time and Automatic. To the right of that is an exposure compensation dial – but whereas the settings on the Fujifilm X-T10 run from -2 to +2EV, the X-T20's range has been extended to +/-3EV.

As we saw on the X-T2, there's also now a 'C' setting on the dial, which lets you set compensation up to +/-5EV using the camera's front command dial, and as on the X-T2 this works very well.

There's also Fujifilm's Quick Menu system, accessed via the Q button. As the name suggests, this gives you quick access to 16 key settings, and it's possible to customise these should you so desire, with a choice of 28 different options. This works well, and it's handy to be able exclude features that you don't use in favour of those you do.

Performance

You could be forgiven for thinking that Fujifilm would give the X-T20 a stripped-down autofocus (AF) system compared to its flagship siblings, but that's not the case. The X-T20 features the same system as the X-T2. Whether you're shooting static or fast-moving subjects, the AF is nice and quick. While continuous focusing with the X-T10 could at times be an optimistic affair with plenty of 'slightly out' shots, focusing tracking with X-T20 is much improved.

The X-T20 uses Fujifilm's proven TTL 256-zone metering system, which performs admirably, even when directed at high-contrast scenes. At times, it can tend to

ALTERNATIVE CHOICES

Panasonic Lumix G80
£629 (body only)

—

> **FROM** panasonic.co.uk
> 16 megapixels
> Live MOS sensor
> ISO100 to ISO25600
> 4K video at 30fps
> 12.8x8.9x7.4cm

Nikon D7200
£846 (body only)

FROM nikon.co.uk
> 24.2 megapixels
> DX CMOS sensor
> ISO100 to ISO25600
> 1080p video at 60fps
> 13.6x10.7x7.6cm

The X-T20's 256-zone metering system handles scenes very well.

underexpose the shot, but we'd happily take this to avoid blown highlights, and recover detail in the shadows later.

If you're going to use the X-T20 to shoot a lot of portraits, the metering is geared to provide a bias towards overexposing the shot for a more flattering high-key result. It's easy to fine-tune the exposure, though – as we've mentioned, set the exposure compensation to 'C' and it's quick to adjust. And the joy of mirrorless is that the viewfinder will display the exposure in real time, so you won't get any nasty surprises when reviewing your images.

Battery life is 350 shots on a single charge, a slight improvement over the X-T10. But when compared to the Nikon D5600, which

has an impressive 820-shot battery life, it's found a little wanting.

There's no support for UHS-II cards, but despite this the X-T20 can still rattle off eight frames in a second, with the buffer good for 23 uncompressed raw files or 62 JPEGs.

A sensitive subject

The X-T20's sensitivity range compares quite favourably to rivals; the limit of ISO51,200 is a stop better than the Canon EOS M5, while the ability to record raw files at this sensitivity is better than the X-T10's JPEG-only option.

Files at the lower end of the sensitivity range deliver really clean results – you'll be hard-pushed to find any signs of luminance noise (grain-like in appearance) in flat-colour areas, such as blue skies. It's only at ISO3200 that luminance noise starts to become an issue. That said, at this sensitivity results are more than acceptable; the noise has a natural look to it, while even up to ISO12,800, results won't be unusable, provided you apply a bit of noise reduction in post-processing.

Pick up and start shooting with the X-T20 and it certainly doesn't feel like the X-T2's poor relation. With its tactile controls and polished handling, it's a very satisfying camera to shoot with.

Mac FORMAT
VERDICT

> Plenty of features in a compact and affordable body. It'll hit the sweet spot for many photographers.

★★★★☆

- ⊕ Rich, detailed images
- ⊕ Excellent handling
- ⊕ Advanced AF system
- ⊖ Sub-par battery life

Kodak Photo Printer Dock PD450W

A new way to print your images

> £129.99 > **FROM** Kodak, kodak.co.uk > **FEATURES**
Wi-Fi connectivity, maximum paper size A6, 20x12x15cm

With the Kodak PD450W, a 4x6-inch colour photo print is just one touch away.

Mac FORMAT
VERDICT

> Kodak gives you easy one-touch printing, but the photo print quality is merely so-so.

★★★☆☆

⊕ Built-in phone dock
⊖ Print quality is basic

Portable photo printers are great in theory, but frequently marred by disappointing image quality. Kodak's PD450W does well to solve the issue, although dye sublimation printing still isn't a match for inkjet models.

What makes this printer unique is the top docking station, which eliminates the need for a Wi-Fi connection while simultaneously charging your iPhone. The built-in micro-USB port is designed for Android smartphones, but includes a Lightning adapter for iOS use; the dock is wide enough for big screen smartphones, including larger iPhones.

A free companion app is required for printing, but the software is slow at displaying thumbnails, and doesn't support iCloud Photo Library folders like Favourites or Selfies. The unit prints 40 4x6-inch photos from a single ink cartridge and paper refill pack. Prints are decent and only take a minute and a half each in four passes – yellow, magenta, cyan, protective coating – but colours are somewhat muted and there's less detail than photos you can get from budget inkjet printers. **JR BOOKWALTER**

Wacom Bamboo Sketch

A stylus for iPads – and iPhones

> £74.99 > **FROM** Wacom, wacom.co.uk
> **FEATURES** Bluetooth, two customisable buttons, two pen nibs

Bamboo Sketch includes a stylish carry case with a pair of extra tips.
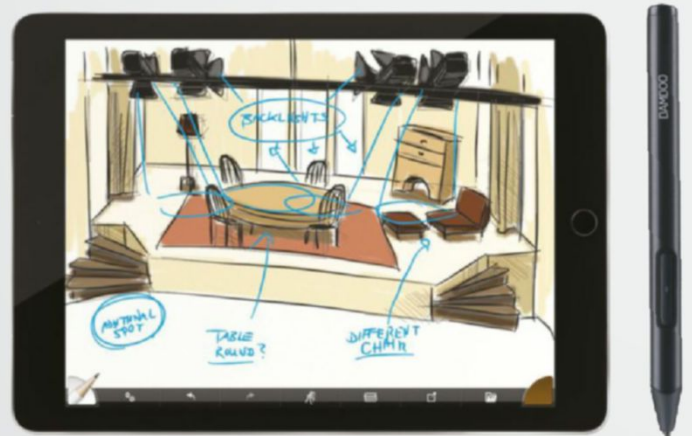
Mac FORMAT
VERDICT

> Wacom's Bamboo Sketch is the best stylus around, assuming you don't own an iPad Pro.

★★★★☆

⊕ Great for non-Pro iPad
⊖ Limited app support

Owners of the iPad Pro are fortunate to have the best stylus around with Apple Pencil. Still, if you have a regular iPad, there's no longer any need to gawk in envy. Wacom's latest stylus does a few things Cupertino's accessory doesn't, like work on the iPhone.

Roughly the length of a ballpoint pen, Bamboo Sketch weighs less than Apple Pencil, and the all-black textured casing provides a better grip. A pair of configurable shortcut buttons are just a push away on the barrel, with a small connector that magnetically attaches to the Sketch's bundled charger.

Also included is a carrying case that holds the charging dongle, as well as two extra nib tips; one firm, one soft. We preferred the former, but the difference is negligible. Sketch pairs automatically via Bluetooth with 13 compatible apps, including the free Bamboo Paper. For slower, more exacting strokes, Sketch largely matches the precision of Apple Pencil. Wacom's stylus doesn't keep up as well with faster handwriting or sketching, though; palm rejection is also a mixed bag. **JR BOOKWALTER**

Philips EverPlay BT7900

A big bassy sound makes for a meaty mobile speaker

Reviewed by **JAMIE CARTER**

> £84 > **FROM** Philips, philips.co.uk > **FEATURES** Bluetooth, 10-hour battery life, IP57 and IPX7 ratings, Micro-USB slot, 3.5mm audio jack, 21x7.2x7.1cm, 520g

> The BT7900 can reach incredibly high volumes without any distortion

The EverPlay BT7900 does bass – very well, in fact. But there's a lot more to like about it than its low frequency finesse. It works very well away from your phone. While most Bluetooth speakers offer 10m of range, you can walk 30m away from the BT7900 before the music cuts out. That's handy, as is its waterproof, shockproof and drop-proof design.

The speaker is covered in a mesh-like DuraFit jacket, which gives it a tactile, anti-slip coating. It's waterproof (dunk-able for 30 minutes in a metre of water), dust-proof and shockproof. While it can cope with water, it does seem likely to get stained by sand or dirt. If you're sat on a beach listening to your tunes, you may find that the sand spoils the speaker's good looks.

The BT7900 has a soft, round shape that hides twin front-firing 1.5-inch neodymium speakers that each reach 7W. Each end of the sausage-like design is sliced to make it easy to position upright. That just about works, but leaving it horizontal, where two silicone runners give a soft grip on surfaces, is more stable. A hidden clip lets you to fasten a handle to the speaker, and there's also a microphone for hands-free calls.

On one end you'll find a standby button surrounded by controls for Bluetooth pairing, play/pause and volume; on the opposite end is a small hatch that covers a Micro-USB slot for recharging it, alongside a 3.5mm audio jack for wiring it up to a non-Bluetooth device.

Bass and detail

The EverPlay BT7900 can reach incredibly high volumes without any distortion. It's more than just loud, however, with good mid-range and treble detail too. We found that the impressive bass levels do dissipate slightly when you put the EverPlay BT7900 on a surface – it actually performs slightly better when you use the grab handle to hang it somewhere, or hold it in your hand.

In our tests the battery lasted for just shy of 10 hours. At this price, it would have been nice if it also acted as an emergency portable battery for a smartphone.

The BT7900 is adept with bass amid a tremendously loud yet balanced soundstage, and it's a great option for your garden or house if you're hosting a barbecue or party. We're just not sure whether it's designed particularly for the indoors or the outdoors... but then perhaps that's the point.

The EverPlay BT7900 is a powerful speaker, but still very portable.

Mac FORMAT VERDICT

> It's loud, bassy and waterproof, with a 30m range and 10-hour battery life.

★★★★☆

✛ Loud yet balanced
✛ Excellent bass
⊖ Mesh wrap may stain
⊖ Sounds better when not placed on a surface

Logitech Pop Smart Button

An ordinary button on steroids

> £119.99 > **FROM** Logitech, logitech.com > **FEATURES** 2x Pop buttons, 1x wireless bridge with HomeKit support

Mac FORMAT
VERDICT

> It's a luxury, but the Pop provides a quick and easy way to control smart devices.

★★★★☆

➕ Supports HomeKit
➖ The app can be fiddly

Logitech's Pop was first launched about a year ago, but we decided to take a closer look following a recent update that added support for Apple's HomeKit software. The Pop is a little tricky to describe. Logitech calls it a 'smart button' that you can use to control a variety of devices around your home.

As well as supporting HomeKit, the Logitech Pop is compatible with many other devices too, such as Sonos speakers and Samsung's SmartThings security sensors.

The Pop starter kit includes two Pop buttons and a wireless bridge, which plugs into a power socket and connects the buttons to your Wi-Fi network. Each button can be programmed to perform three actions, using a single tap, double-tap, or tap-and-hold. Of

The Pop buttons can control multiple devices with a single tap.

course, this is already possible using the iOS apps that come with these devices, but simply tapping the Pop is a lot quicker than unlocking your iPhone and switching between multiple apps. The £120 price tag might seem a bit steep, but if you're a gadget fan then the Pop will make a terrific little present. **CLIFF JOSEPH**

Pioneer Rayz Rally

On-the-go conference speaker

> £99.95 > **FROM** Pioneer, pioneerrayz.com > **FEATURES** Smart button, Lightning port, pass through charging, carry case

Mac FORMAT
VERDICT

> At just under £100, the Rayz Rally is a good option for regular VC callers.

★★★★☆

➕ Good call quality
➖ Not essential

Available in onyx or space grey, this diminutive speaker could become an indispensable accessory for a very specific group of people.

If you often find yourself on a call with your co-workers (or family), then it will be a £100 well spent. Conference call quality is exceptional and a marked improvement on the iPhone's built-in speaker (unsurprisingly). The single button can be used to mute or end calls. If you don't need it for conference calls,

the Rayz Rally could be useful, but you've probably got something already that can do its job, like a Bluetooth speaker. Pioneer says it can be used as a personal music speaker – it's fine up to two-thirds volume – but who regularly needs a speaker that only you can hear? If you're at home, in the car or in the office, you'll have something else you can use for audio.

It's Lightning powered, though you can connect a Lightning cable to the bottom as well to charge it and your iPhone or iPad.

The single button can be used to mute and unmute calls, as well as end them with a long press.

The corresponding app updates the firmware and guides you through a basic tutorial to get you started. **DAN GRABHAM**

Professional video-editing apps

Reviewed by GEORGE CAIRNS
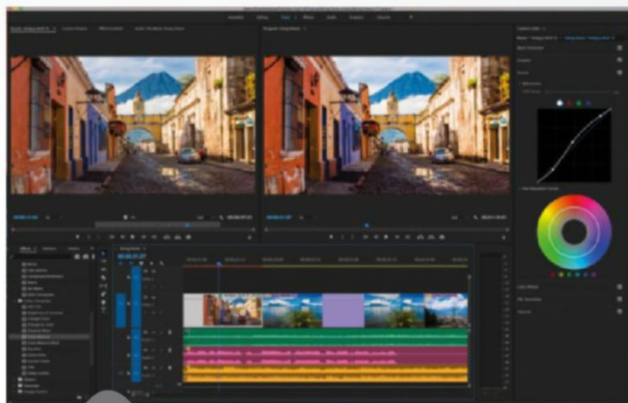
Adobe Premiere Pro CC

Mac FORMAT BEST ON TEST

> £19.97 monthly subscription > **FROM** Adobe, adobe.com
> **NEEDS** OS X 10.10 or later

Workspace ★★★☆☆ <

Both apps have a classic non-linear editor layout with a bin for raw footage and a timeline for assembly. As with Final Cut Pro, assets are colour coded to help you manage graphics, footage and audio clips.

Editing tools ★★★★☆ <

When it comes to colour correction, tools such as the white balance eyedropper and Curves control points help you target and tweak specific colours. The Ripple and Slip Edit tools make it easier to fine-tune an edit point.

Advanced features ★★★★★ <

By connecting to the Creative Cloud you can access assets in your shared Libraries. It's also easier to round trip between Adobe After Effects to add more sophisticated motion graphic effects. Motion tracking is a useful feature.

Value ★★★☆☆ <

For £49.94 per month you can access Premiere Pro CC alongside the entire suite of Adobe apps, which is useful if you need Photoshop and After Effects. Alternatively, you can subscribe to Premiere Pro CC for £19.97 per month and access new features as they are released.

Final Cut Pro X

> £299.99 > **FROM** Apple, apple.com/uk
> **NEEDS** OS X 10.11.4 or later

> Workspace ★★★★☆

By automatically assigning colour-coded roles you can easily find particular assets. You can also save a collection of custom workspaces so that appropriate panels are instantly available for tasks such as grading.

> Editing tools ★★★☆☆

You can easily swap the order of clips, trim their duration and add text and transitions in the timeline. However, for a professional package Final Cut Pro's colour grading and tone tweaking tools are relatively basic.

> Advanced features ★★★★☆

Final Cut automatically combines footage from multiple cameras into a single clip. You can then tap the keyboard to cut from one angle to another. The Flow transition morphs between clips to create a seamless sequence.

> Value ★★★★☆

At first glance, £300 sounds steep, but unlike Premiere Pro you own the app outright and can still enjoy upgrading it for free when new features are released. As a professional, you can rely on Final Cut Pro to help you create slick and complex video projects.

> This non-linear editor might take longer to master but it has the edge when it comes to colour grading and tone adjustment.

★★★★☆

Mac FORMAT VERDICT

> If you're confident with iMovie, you'll take to Final Cut Pro easily, where you can add advanced post-production skills to your repertoire.

★★★★☆

IP CAMERAS
ON TEST...
> D-Link Omna 180 Cam HD **£199.95**
> Logitech Circle 2 (Wired) **£169.99**
> Nest Cam IQ **£299**
> Netatmo Welcome **£199**
> Netgear Arlo Pro **£299.99**
> Nokia Home **£169.95**

HOME SECURITY CAMERAS

A smart security camera provides affordable peace of mind when you're away from home

Reviewed by **CLIFF JOSEPH**

There's been plenty of publicity for smart speakers in recent months, especially with Apple's HomePod about to go head to head with the Amazon Echo this Christmas. But the real driving force in the smart home market is a lot more straightforward – it's security. That's hardly surprising, as we all want to make sure our homes are secure, and for many people the first smart device that they're likely to buy for their home will be a security camera. The popularity of security cameras has led to a bewildering range of products that you can choose from – a quick look at maplin.co.uk shows 81 cameras from dozens of different manufacturers.

We can't fit 81 cameras into a single issue of *MacFormat*, so we've rounded up the latest products from six of the most popular and reliable manufacturers. They may not be the cheapest cameras currently available,

> **The popularity of security cameras has led to a bewildering range of products to choose from**

but they all provide a good range of features that will be useful for most homes.

The key feature, of course, is motion detection – the ability to spot movement in a room and warn you about a possible intruder when you're away from home. A good security camera will also provide a night vision mode that allows them to work at night, or when the lights are turned off. All these cameras can use an app to send a notification to your iPhone or other mobile devices to tell you that they've spotted something – or someone, if they have face recognition features as well – and they can stream the live video image over the internet to your iPhone so that you can see what's going on. But the cameras we review here provide plenty of other features as well.

Most cameras run off mains power, which means they just sit in one place within your home, but we've made a point of including Netgear's battery-powered Arlo Pro as a more portable option. The Arlo is also weatherproof, as is Logitech's Circle 2, which makes them a good option for outdoor use, perhaps to keep an eye on a garden or car park area. So take a look at these top cameras and decide which one will provide the best protection for your home.

How we tested
> We set up all six cameras in two separate locations to test their features and see how they compared to each other. Although we tested each camera's full set of features, we focused mainly on those that are designed to protect your home from intrusion, such as motion detection and face recognition, as well as their ease of use and installation.

Higher...
> We tested a single Arlo Pro, but Netgear also sells Arlo kits that have up to four cameras, priced at around £800, which are suitable for larger homes or offices.

...or lower?
> The most affordable camera we've seen that provides high-definition video (1280x720) and night vision mode is the NC250 from TP-Link, which costs £55.

Things to consider...
A few advanced features to look out for

1 Storage costs
Watch out for hidden costs. All these cameras will stream live video to your iPhone when they detect movement at home, and some will store your videos online for a few days for free. However, some of the cameras here do require a monthly subscription fee for online storage.

2 Going offline
The D-Link Omna and Netatmo Welcome don't provide any online storage at all. However, the Welcome does include an 8GB memory card for storing videos, and also allows you to upload video to a Dropbox or FTP account. But you'll need to buy your own memory card for the Omna.

3 Mobile broadband
You'll need a fast, reliable mobile broadband connection in order to stream high-definition video from your camera to your smartphone or tablet. You'll find that the compressed video files aren't too big, but you'll need to make sure your data allowance will cover it without racking up extra bills.

4 Indoors or out?
Most of these cameras are designed for indoor use, but Netgear's Arlo Pro and the Logitech Circle 2 are both weatherproof, so they can be used outdoors if you want to keep an eye on your car parked outside, or make sure no one is sneaking into your garden.

5 HomeKit
At the moment, D-Link's Omna is the only camera that works with Apple's HomeKit software – which will allow it to work with other HomeKit devices, such as Philips Hue lightbulbs. So you could tell the Omna to turn on the lights when it detects someone entering your home.

Test 1 Getting started
Security in seconds

> All these cameras are easy to set up and use. Most take a two-step approach, initially using Bluetooth to pair your iPhone with the camera so that the app can then configure the camera and connect it to your Wi-Fi network.

Netatmo and Nokia get brownie points for also providing an Ethernet interface, while the HomeKit support in the D-Link Omna means you just scan a code on the camera and it's set up and linked to the Home app on your iOS devices. (Shame Logitech and Nokia haven't sorted out their promised HomeKit support yet.) Netgear's Arlo Pro is expensive but it has a rechargeable battery and is weatherproof (IP65) for outdoor use. It also comes with a separate hub that has to be connected to your Wi-Fi router – although the hub can control up to 15 separate cameras, making it a good option for larger homes or offices.

TEST RESULTS

D-Link Omna 180 Cam HD	★★★★★		Netatmo Welcome	★★★★☆
Logitech Circle 2 (Wired)	★★★★☆		Netgear Arlo Pro	★★★★☆
Nest Cam IQ	★★★★☆		Nokia Home	★★★★☆

Test 2 Core features
Getting the basics right

> With one exception, all these cameras can record at 1920x1080 resolution. They also include motion detection and night vision, and will stream live video to your iPhone if they detect movement while you're away. The apps all provide a simple timeline that lets you view past recordings; we particularly like the timelapse summaries available with the Logitech and Nokia.

Netgear's Arlo Pro only provides 1280x720 resolution (720p), but the image quality is still good, and you do get seven days of free online storage. Logitech stores recordings free for one day, while Nokia gives you two days, but the already-expensive Nest Cam IQ requires a subscription (from £8 per month) for online storage. Netatmo and D-Link don't offer online storage; Netatmo provides an 8GB memory card, while the D-Link expects you to provide your own memory card.

TEST RESULTS

D-Link Omna 180 Cam HD	★★★☆☆		Netatmo Welcome	★★★★☆
Logitech Circle 2 (Wired)	★★★★★		Netgear Arlo Pro	★★★★☆
Nest Cam IQ	★★★★☆		Nokia Home	★★★★☆

Test 3 Security
Keeping your home safe

> Netatmo's Welcome uses face recognition to tell your family members apart from 'strangers', and can even recognise pets too. The Logitech Circle 2 and Nest Cam IQ both offer similar 'person detection' features, as well as the ability to focus on specific 'zones', such as a window or door – but you have to pay a subscription to activate those features.

D-Link provides a simple – but free – zone option, using a grid that is superimposed over the video image, and both D-Link and Netatmo allow you to fine-tune the sensitivity of their motion-detection features in order to avoid false alarms. The Nokia Home is unusual as it can react to noise as well as movement in your home. And speaking of noise, Netgear's Arlo Pro has a 100db siren built into its control hub that will probably wake up the entire street.

TEST RESULTS

D-Link Omna 180 Cam HD	★★★★☆		Netatmo Welcome	★★★★☆
Logitech Circle 2 (Wired)	★★★★☆		Netgear Arlo Pro	★★★★★
Nest Cam IQ	★★★★☆		Nokia Home	★★★★☆

Test 4 Extra features
What else is on offer?

> D-Link's Omna is the only camera here to support Apple's HomeKit, so you can control it with the HomePod speaker, and link it to other HomeKit devices. Logitech is promising a software update that will provide HomeKit support for the Circle 2... The Nest Cam IQ records video at 1920x1080, but actually has a 4K video sensor, which gives it the ability to zoom in and track movement. The Netgear Arlo Pro is the only wire-free portable camera in this group – although Logitech does sell a separate wire-free version of the Circle 2 for £200.

As mentioned above, the Netatmo doesn't offer online storage, but its app can link to a Dropbox account, allowing you to store video online. And, completely off-topic, the Nokia Welcome can also act as an air-quality monitor, making it a good option in places such as a child's bedroom.

TEST RESULTS

D-Link Omna 180 Cam HD	★★★★☆		Netatmo Welcome	★★★★☆
Logitech Circle 2 (Wired)	★★★★☆		Netgear Arlo Pro	★★★★☆
Nest Cam IQ	★★★★☆		Nokia Home	★★★★☆

THE WINNER
Logitech Circle 2
Plenty of storage combined with plenty of features

T he Nest Cam IQ is expensive at £299, although its 4K sensor does provide excellent image quality and useful features such as track-and-zoom. However, Nest's reliance on paid subscriptions for online storage and other advanced features can be costly in the long run.

Netgear's Arlo Pro is the same price, but it provides a weatherproof camera, one week of free storage and a super-loud siren for extra protection. At £200, D-Link's Omna stands out with its HomeKit support, although that really isn't essential for a security camera at the moment. At that price, Netatmo's face-recognition features may prove more useful, especially for hectic family homes.

The most affordable cameras are clearly the Nokia Home and Logitech Circle at £170. Some people will like the Home's air quality features, but the Circle 2 is more versatile, with a weatherproof design that you can use indoors or outdoors, and a well designed app that together make it one of the most versatile security cameras currently available.

Paul says...

> Security cameras have improved so much in recent years. The one I have at home takes grainy footage and doesn't boast night vision (just don't tell any burglars!). The Logitech Circle 2 is competitively priced, offers face recognition and motion detection and takes high quality recordings even in low light, plus you get a day's free online footage to boot.

> How do they compare?

THE SPECS	> D-Link Omna 180 Cam HD	> Logitech Circle 2 (Wired)	> Nest Cam IQ	> Netatmo Welcome	> Netgear Arlo Pro	> Nokia (Withings) Home
PRICE	£199.95	£169.99	£299	£199	£299.99	£169.95
URL	dlink.com/uk/en	logitech.com/en-gb	nest.com/uk	shop.netatmo.com	arlo.com	health.nokia.com
CAMERA RESOLUTION (VIDEO RECORDING)	1920x1080	1920x1080	1920x1080	1920x1080	1280x720	1920x1080
FIELD OF VIEW	180°	180°	130°	130°	130°	135°
TILT/SWIVEL STAND	No	Yes	Yes	No	No	No
POWER/PLACEMENT	Mains power, freestanding	Mains power, freestanding, wall mount	Mains power, freestanding	Mains power, freestanding	Rechargeable battery (3-6 months), freestanding	Mains power, freestanding
SECURITY FEATURES	Motion detection, night vision	Motion detection, night vision, face/pet detection, motion zones*	Motion detection, night vision, 12x digital zoom, face detection*, voice detection*	Motion detection, night vision, face recognition	Motion detection, night vision, siren	Motion detection, night vision, 12x digital zoom
CONNECTIVITY	Wi-Fi, HomeKit	Wi-Fi	Wi-Fi	Wi-Fi, Ethernet	Wi-Fi	Wi-Fi, Ethernet
VIDEO STORAGE	Micro-SD card (not included)	Cloud: 24 hours, free; 14 days, £2.99 per month; 31 days, £7.99 per month (£79.99 per year)	Cloud: No free storage; 10 days, £8 per month; 30 days, £24 per month (£240 per year)	8GB micro-SD card (included), upload to Dropbox, FTP	Cloud: 7 days, free; 30 days, £6.49 per month; 60 days, £9.99 per month (£99 per year)	Cloud: 48 hours, free; 7 days, €7.95; 30 days, €19.95
> GETTING STARTED	★★★★★	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆
> CORE FEATURES	★★★☆☆	★★★★★	★★★★☆	★★★★☆	★★★★☆	★★★★☆
> SECURITY	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★★	★★★★☆
> EXTRA FEATURES	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★☆☆
> FINAL VERDICT	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★

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.

Screens 4
Get at your Mac on the move

> £28.99 > **FROM** Edovia, edovia.com
> **NEEDS** OS X 10.11 or later

You can group multiple Macs and view them as thumbnail images.

Mac FORMAT
VERDICT

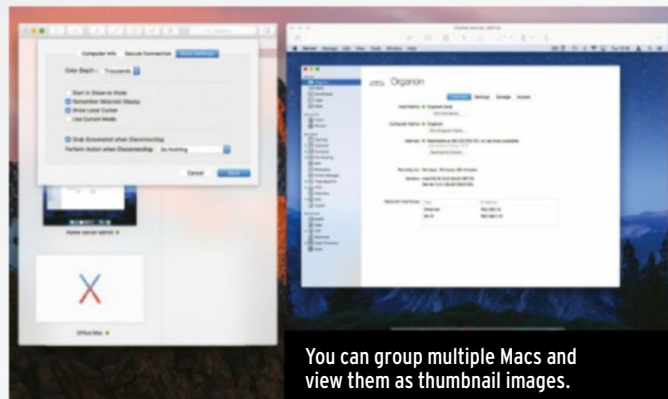> If you need to connect to a remote Mac, Screens 4 is a great way to do it.

★★★★☆

+ Easy to set up
− Occasional glitches

Screens 4 enables you to connect to your Mac from anywhere where there's an internet connection. Once connected you can control the Mac remotely as if you were sitting in front of it. Version 4 adds the ability to transfer files by dragging and dropping between your local Mac and the remote one, as well as a feature that obscures the display of the remote Mac while you work.

If you connect to a Mac with multiple displays attached, you can choose which of them you want to view, or see all of them at once. And if you connect to multiple Macs, you can save them and arrange them in groups to find them easily.

Setting up Screens is straightforward. On a local network, Macs are automatically detected, though you'll need to switch on Screen Sharing in a remote Mac's System Preferences. To connect, you need to set up a Screens account and run the Screens Connect utility on the Mac you want to connect to.

We found Screens worked well, and connected quickly on our local network. However, we did run into occasional problems when trying to drag and drop files between Macs. Likewise, we sometimes ran into problems copying and pasting between remote and local Mac.
KENNY HEMPHILL

Boom 3D
Make your Mac sound better

> £12.99 > **FROM** Global Delight Technologies, globaldelight.com
> **NEEDS** OS X 10.10.3 or later

Make minor adjustments to see big changes in your Mac's sound.

Mac FORMAT
VERDICT

> Boom 3D really can make your Mac sound better, especially on headphones.

★★★★☆

+ Improves your audio
− Easy to go too far

There's a problem with ever-thinner Macs: thin cases mean thin speakers, which means thin sound. It's particularly noticeable on the iMac, on which music sounds as if it is being shouted at you by somebody in a bucket, but it's a problem on MacBooks too. Boom 3D can help though.

The app changes the sound of your Mac to make it brighter, wider – and on headphones, to give you virtual surround sound. It works: turn it off and the sound is considerably duller and less interesting. At heart it's an equaliser with some extra effects to add 'air' at the top end, widen the stereo image, and so on, but it's packaged in a way that people who aren't audio experts can understand easily enough.

It's particularly good on headphones, with wider stereo, better bass, and more pronounced separation of individual sounds such as gunshots and vehicles. It's easy to overcook the sound – crank up the sliders and the sibilantsssss sssssound like sssssssnakesss – but if you take a 'less is more' approach it's very effective. It's no substitute for good quality speakers, of course, but it's a big improvement on the default options.
GARY MARSHALL

Corel Painter 2018

The art app that just keeps getting better and better

Reviewed by **DON SEEGMILLER**

> £360 (upgrade for £180) > **FROM** Corel, painterartist.com > **NEEDS** OS X 10.7 or later

> Accurately mimic the look and feel of traditional oil and acrylic paint

T his new release of Painter has **many new features that will make the digital artist quiver in anticipation.** Let's start with the Thick Paint option. This set of painting tools goes beyond the Impasto painting tools that were present in earlier versions. They accurately mimic the look and feel of traditional oil and acrylic paint. You can pile on the paint, push it around, scrape the paint, and realistically blend.

The default brushes have been inspired by their traditional equivalents and Corel says that the brush variants have been created by artists familiar with traditional media. One wonders how they were designed in previous versions. Still, the brushes are flexible, with new options for blending underlying brushstrokes and variable opacity. Thick Paint can be enhanced by changing the direction, intensity, colour and number of light sources that interact with the canvas.

Elsewhere, you can now paint using Texture Cover, Source Blending or the new 2.5D Texture Brushes. Texture Source

Blending builds depth using textures. Texture Cover uses the colours found in the active texture, or you can choose any colour to be used while painting. Interestingly, the new 2.5D Texture brushes build subtle and dimensional textured surfaces using the active texture. With these brushes you can change, scale and transform the texture at any time.

Create something unique

Another new feature, Texture Synthesis, enables you to pick an area of a document or texture and reproduce it at a larger scale. When synthesising a new texture, the selected area of the original texture is randomised across the new document, creating something unique. You're not limited to using textures: the brushstrokes in a document enable you to create a new texture. The resulting image can be used as any other texture or as a layer.

There are a number of smaller, but welcome new features, too. The Enhanced Drip and Liquid brushes work on an empty layer to blend a colour with an oil paint-like transparency, or paint using the colours from underlying layers. Random Grain Rotation will rotate the active paper texture with each brush stroke, giving a natural look. There's also a redesigned Natural Brush library, and you can create your own selection brushes using any dab-based brush variant. Finally, new cloning capabilities give you the ability to adjust the size and shape of clone sources.

There have also been a number of background and interface tweaks, making the software easier to use. Overall, Corel's done well in updating Painter so that, more than ever, it brings the worlds of traditional and digital art closer together.

You can add texture to a painting or rendered 3D model using the Thick Texture brushes.

Mac FORMAT VERDICT

> Great new additions to refine and develop your digital painting experience.

★★★★☆

⊕ Thick Paint feature
⊕ Redesigned Natural Brush library
⊕ More texture options
⊖ Steep learning curve

Vanido

Think you can't be a good singer?

—

> Free > **FROM** Himanshu Singh, vanido.io
> **NEEDS** iOS 9.3 or later

Vanido gives you three exercises a day, every day.

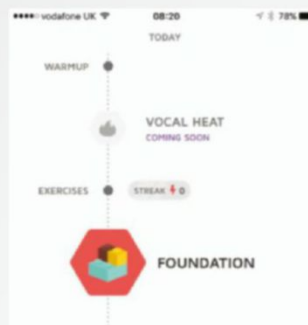The more exercises you do, the more you unlock.

Mac FORMAT VERDICT

> As a voice coach it's probably too simple, but Vanido has lots of promise to help.

★★★☆☆

➕ Makes training fun
➖ Choppy audio

With very few exceptions, a good singing voice is something we need to work on, not something we're born with. Before you call that expensive vocal coach, give Vanido a try.

Vanido is a free app that aims to make voice training fun. The app works out your vocal range – ensuring the exercises aren't too low or too high for you – and then gets you to practise some simple notes and sounds. Technology comes into play with its real-time analysis, which shows you how well or how poorly you're managing to hit each note.

The objective is to sing every day, not to sing until you've lost all motivation. Even the most woeful performance generates skill points – and the exercises are deliberately short and simple so you won't feel overwhelmed or frustrated. The app is clearly a work in progress; for example, while it logs in to Google or Facebook, there aren't any social or collaborative features to make those logins necessary. We also found the audio a bit choppy while singing, which was a little off-putting. But we did find ourselves raising our vocal game once our ego had recovered from the on-screen evidence that we weren't Nat King Cole. **GARY MARSHALL**

Old Man's Journey

Mac FORMAT ★★★★★ EDITOR'S CHOICE

May the road rise to meet you

—

> £4.99 > **FROM** Broken Rules, oldmansjourney.com
> **NEEDS** iOS 10 or later

The use of colour in Old Man's Journey is simply beautiful.

Mac FORMAT VERDICT

> One of the most beautiful games we've seen in a while. Delightfully responsive.

★★★★★

➕ Gorgeous visuals
➖ Time-based pressure

Old men. Heartbreak. Redemption. And walking. These are the main ingredients of Old Man's Journey, a story told through wordless vignettes of one man's life as he walks across hills, mountains and seas to find... something.

You are his guide, of sorts, dragging the scenery around him to clear the path and help him continue. You can pull up hills to meet his feet, creating zig-zags of landscape, or leave him to pause on an immovable part such as a house, bench, or lighthouse, as you rejig the curves of the land to create a way forward – since you can't move anything he's on. There's a lot of fun to be had manipulating the undulating countryside and pulling boats across water with your finger. It feels responsive, too. There's also the calming pleasure of interacting with small objects in the background, such as the window shutters, trees, and waterfalls, which react to your touch in various ways. The world feels vibrant and alive, done in a memorable, gorgeous pastel crayon style.

Old Man's Journey can be slow and even frustrating but it doesn't really matter when the story and the view are both heartwarmingly good. **KATE GRAY**

LumaFusion Pro

Video editing on iPad gets a serious upgrade

Reviewed by **MATTHEW BOLTON**

> £19.99 > **FROM** Luma Touch, luma-touch.com
> **NEEDS** iOS 10 or later

The best attempt yet at fitting a full-on video editor on a tablet

T he iPad has become a great device for a lot of creative tasks, but video has always been a bit of a weak area. iMovie is great for simple stuff, but is very limited. Other apps have come and gone that have attempted to add the tools people are used to from desktop video editors, but none has set the world alight. LumaFusion is the best attempt yet at fitting a full-on video editor on tablet, and though it's not perfect, it's powerful and smartly rethinks some elements of editing for a touch-focused world.

If you've used iMovie on desktop, its basic interface won't surprise you at all. At top left is a clip browser, for choosing stored video to import (you can also send video to it using iOS's Open In option from a storage app); at the top right is a preview window of the currently selected video; and at the bottom is the timeline for putting together your movie. The timeline can hold multiple video and audio tracks, and acts magnetically (as in iMovie) by default, but you can switch that

option off, which is great for Final Cut 7 diehards. Drag things around to move them, while double-tapping a clip opens full adjustment options for it. You can detach audio from video clips, insert or replace clips easily, and add text and transitions.

Lots of stuff has been rethought for the touch interface. Precise scrolling is handled through the use of virtual jogwheels, and many advanced options are only shown in context to avoid clogging up the screen – but what's here still fits neatly in to how you expect a desktop editor to work.

That said, there will be stumbling blocks: you can keyframe things such as video effects and positioning, or audio level, but it took us a little while to understand exactly how. Once we got it, we were kind of blown away by its elegance – though we wish you could smooth the animation.

Make use of presets

Accessing advanced options such as colour tweaks or frame positioning means a lot of fussy bars and buttons, so LumaFusion is built heavily around saving preset styles (and you can copy and paste effects easily), which you can then add directly from a menu on the timeline. It's very smart for the kind of mid-level-pro stuff at which LumaFusion seems aimed.

However, there is an awkwardness that holds us back from completely worshiping at LumaFusion's feet. We found adding and working with transitions harder than it needs to be (especially on multitrack works), and the timeline snapping isn't always reliable. Losing the Undo button when working on video imports is also frustrating.

Mac FORMAT VERDICT

> The best video editor on iPad, but not quite a desktop replacement yet.

★★★★☆

⊕ Pro-level editing
⊕ Awesome keyframing tool...
⊖ ... but more refinement needed

You just need to double-tap a clip to open adjustment options, which mostly use sliders.

STORE GUIDE

EDITED BY **ALEX BLAKE** ❯

Your complete guide to the best Apple hardware and third-party accessories

W elcome to *MacFormat*'s Store Guide, the place to go to find out about all the Apple kit that matters, whether you're looking for your next iPhone or a powerful new desktop Mac.

We've highlighted the model of each product that's ideally suited to your needs, whether you're a recent convert or a seasoned Apple user.

So be sure to check our handy tables to see which Mac, iPad or iPhone is best for you.

We've also handpicked the gold standard in audio, storage, cameras, and many other categories, helping you complement your Mac or iOS device with the best accessories. All of these third-party devices have been reviewed in the magazine.

UPDATED OCT 2014
EXPECTED 2017

Mac mini
From £479

❯ An update in 2014 brought a £100 price drop to the most affordable Mac, but rises in late 2016 added £80 back on. The mini comes with some interesting talking points: the entry-level model has a 1.4GHz dual-core Intel Core i5 CPU and 4GB of memory, making it one of the lowest-spec Macs around, with a 500GB hard drive and no display.

Higher-end models come with 1TB of storage included (Fusion Drive and SSD options are available), 8GB of memory, a better graphics processor and either a 2.6GHz or 2.8GHz Intel Core i5 for £679 and £949. Those models can be upgraded to a Core i7, but there aren't any quad-core options available at the moment. Expect updates in 2017.

UPDATED JUNE 2017
EXPECTED 2018

iMac

❯ Ever since the famous Bondi Blue iMac debuted in August 1998, Apple's all-in-one desktop computer has been setting standards in gorgeous design and powerful performance. Apple's innovation was as clear back then as it is today – the iMac was the first Macintosh to drop the floppy disk in favour of USB, and its colourful aesthetic set it apart as a playful pretender in a world of staid beige boxes.

Today, Apple is again pushing boundaries with the iMac, blessing all of its 27-inch models with a massive 5K (5120x2880) resolution and a wide P3 colour gamut. Add in Intel Core i5 and i7 CPUs (configurable from 3.4GHz up to 4.2GHz), a fast and capacious Fusion Drive, and powerful AMD Radeon RX graphics processors, and the 27-inch iMac is *the* desktop system to own. At WWDC in June 2017, Apple refreshed the entire range of iMacs, with discrete GPUs coming to all but the entry-level model, newer Intel CPUs, brighter Retina displays and more Thunderbolt 3 ports.

❯ Choose an iMac

	MODEL	KEY SPECIFICATIONS	PRICE
ENTRY LEVEL	21.5-inch 3.0GHz quad-core Intel Core i5	**MEMORY** 8GB of 2400MHz DDR4 **GRAPHICS** AMD Radeon Pro 555 **STORAGE** 1TB (5,400rpm) hard drive **DISPLAY** Retina 4K (IPS, P3 gamut) **ALSO** Magic Mouse 2, Magic Keyboard	£1,249 ⓡ
UPGRADER	27-inch 3.4GHz quad-core Intel Core i5	**MEMORY** 16GB of 2400MHz DDR4 **GRAPHICS** AMD Radeon Pro 570 **STORAGE** 1TB Fusion Drive **DISPLAY** Retina 5K (IPS, P3 gamut) **ALSO** Magic Mouse 2, Magic Keyboard	£1,929 ⓡ
HIGH END	27-inch 4.2GHz quad-core Intel Core i7	**MEMORY** 16GB of 2400MHz DDR4 **GRAPHICS** AMD Radeon Pro 580 **STORAGE** 2TB Fusion Drive **DISPLAY** Retina 5K (IPS, P3 gamut) **ALSO** Magic Mouse 2, Magic Keyboard	£2,609 ⓡ

UPDATED JUNE 2017
EXPECTED 2018

MacBook

> The baby of Apple's laptop family, the MacBook was updated at WWDC 2017 to get Intel Kaby Lake processors and faster SSDs. Weighing in at just 0.92kg, it's Apple's most lightweight laptop but still packs in a 226ppi pixel density in its 12-inch Retina display.

The MacBook is powered by an Intel Core M processor (configurable to Core i5 or i7), which doesn't require a fan to keep cool, so the MacBook runs silently. It also features a Force Touch trackpad, which can trigger different responses as you apply more pressure. All models of the MacBook come loaded with 8GB of 1866MHz memory, which can be boosted to 16GB, and Intel HD Graphics 615 – an upgrade from the previous HD Graphics 515 – and there are 256GB or 512GB flash storage options. There are four colour options: Silver, Space Grey, Gold, and Rose Gold.

> Choose a MacBook

	> MODEL	> KEY SPECIFICATIONS	> PRICE
ENTRY LEVEL	12-inch 1.2GHz dual-core Intel Core m3	**MEMORY** 8GB of 1866MHz LPDDR3 **GRAPHICS** Intel HD Graphics 615 **STORAGE** 256GB SSD	£1,249 ®
UPGRADER	12-inch 1.3GHz dual-core Intel Core i5	**MEMORY** 8GB of 1866MHz LPDDR3 **GRAPHICS** Intel HD Graphics 615 **STORAGE** 512GB SSD	£1,549 ®
HIGH END	12-inch 1.4GHz dual-core Intel Core i7	**MEMORY** 16GB of 1866MHz LPDDR3 **GRAPHICS** Intel HD Graphics 615 **STORAGE** 512GB SSD	£1,864 ®

UPDATED JUNE 2017
EXPECTED 2018

MacBook Pro

> Apple debuted the new MacBook Pro in October 2016 with an OLED strip of app-specific controls called the Touch Bar. The Force Touch trackpad was made larger to give more room for gestures, and the keyboard was also updated to have a second-generation version of the butterfly keys from the 12-inch MacBook.

The MacBook Pro range then got a further boost at WWDC 2017, when both the 13-inch and 15-inch models had their processors updated to Intel's Kaby Lake models. The larger of the two also had its graphics card upgraded to give more powerful Radeon Pro options.

You get two or four Thunderbolt 3 ports (depending on the model), which are also compatible with USB-C devices, and through which you can charge the MacBook Pro. The 13-inch and 15-inch sizes remain, although the entry-level 13-inch lacks a Touch Bar.

> Choose a MacBook Pro

	> MODEL	> KEY SPECIFICATIONS	> PRICE
ENTRY LEVEL	13-inch 2.3GHz dual-core Intel Core i5	**MEMORY** 8GB of 2133MHz LPDDR3 **GPU** Intel Iris Plus 640 **STORAGE** 256GB SSD **Touch Bar** No	£1,449 ®
UPGRADER	13-inch 3.1GHz dual-core Intel Core i5	**MEMORY** 8GB of 2133MHz LPDDR3 **GPU** Intel Iris 650 **STORAGE** 256GB SSD **Touch Bar** Yes	£1,749 ®
HIGH END	15-inch 2.8GHz quad-core Intel Core i7	**MEMORY** 16GB of 2133MHz LPDDR3 **GPU** Radeon Pro 555 **STORAGE** 256GB SSD **Touch Bar** Yes	£2,349 ®

Apple tips >

From Stormfront, your local Apple experts

Mission Control

Mission Control helps you manage your workflow. Swipe up with three or four fingers on your mouse or trackpad (alternatively press F3). From here you can see all open apps and switch between them.

To create new 'Spaces' click the + icon in the top right of Mission Control. Think of these as additional desktops you can arrange your open apps on and quickly switch between by swiping left or right with two fingers on the mouse (three fingers with trackpad, or press ctrl and left or right keys).

You can also create a split-screen view between two apps by clicking and holding the green icon in the top left of the app window. You can then choose which half of the screen you want the app, and then click another open app to fill the remaining half. To get back to the desktop, swipe to Mission Control.

Ellie Otley, Darryl Elkins
Stormfront.co.uk

UPDATED SEPT 2017
EXPECTED 2018

iPhone

> Apple always had to do something big for the iPhone's tenth birthday, and it's done that with the iPhone X. Sporting a glass back to allow wireless charging and a gorgeous edge-to-edge, OLED, Super Retina display measuring 5.8 inches across, it's big news all over.

Its better cameras don't just mean great photos – they allow for Face ID, the face-scanning technology that is the latest, safest way to unlock your phone (goodbye Touch ID and Home button).

But don't let the new kid on the block overshadow the iPhone 8 and 8 Plus – they're great phones in their own right. They get wireless charging too, plus revamped cameras, a new A11 Bionic chip, and new augmented reality tech.

All new models come in 64GB and 256GB capacities. The pricing for the iPhone 8 starts at £699, the 8 Plus at £799 and the iPhone X at £999.

> Choose an iPhone

	MODEL	KEY SPECIFICATIONS	PRICE
ENTRY LEVEL	iPhone SE (4-inch display)	CAPACITY: 128GB PROCESSOR: A9 FACE ID No CAMERA 12MP photos, 4K video recording	£449 ®
UPGRADER	iPhone 8 (4.7-inch display)	CAPACITY: 64GB PROCESSOR: A11 Bionic FACE ID No CAMERA 12MP photos (dual-camera), 4K video	£699 ®
HIGH END	iPhone X (5.8-inch display)	CAPACITY: 64GB PROCESSOR: A11 Bionic FACE ID Yes CAMERA 12MP photos (dual-camera), 4K video	£999 ®

UPDATED JUNE 2017 EXPECTED 2018

iPad

> Apple shifted the iPad range around in March 2017, replacing the iPad Air 2 with a 9.7-inch model simply called 'iPad'. The entire Air range has been phased out, but the iPad mini 4 is still available.

The 9.7-inch iPad features an A9 CPU and M9 motion coprocessor, and comes in 32GB and 128GB storage flavours. The Retina display has been made brighter compared to the Air 2, but the new iPad is slightly thicker and heavier. It's also got an 8MP rear camera and a 1.2MP front-facing camera.

On the software side, the iPad adds multitasking features, which are a boon for productivity. You can slide a second app over the right side of the one you're working in, then dismiss it to get back to work. 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.

> Choose an iPad

	MODEL	KEY SPECIFICATIONS	PRICE
ENTRY LEVEL	7.9-inch iPad mini 4	CAPACITY 128GB PROCESSOR A8 CONNECTIVITY Wi-Fi CAMERA 8MP TOUCH ID Yes	£419 ®
UPGRADER	9.7-inch iPad	CAPACITY 128GB PROCESSOR A9 CONNECTIVITY Wi-Fi CAMERA 8MP TOUCH ID Yes	£429 ®
HIGH END	12.9-inch iPad Pro	CAPACITY 256GB PROCESSOR A10X CONNECTIVITY Wi-Fi CAMERA 12MP TOUCH ID Yes	£919 ®

UPDATED JUNE 2017 EXPECTED 2018

iPad Pro   From £619

> The iPad Pro comes in 10.5-inch and 12.9-inch sizes, packed with either 64GB, 256GB or 512GB of storage. All models are available with the option of mobile network connectivity. The Pro's A10X chip is the most powerful in any iOS device, and it has an impressive four-speaker sound system, too. Adding the pressure-sensitive Apple Pencil and 120Hz refresh rate makes it a smooth, accomplished drawing tool.

UPDATED SEPT 2017 EXPECTED LATE 2018

Watch

From £249 (Series 1)
> The Watch is Apple's quiet revolution, and it's now the number one watch in the world. Series 3 is meant to cement that status quo.

To achieve that, Series 3 lets you make and receive calls from your wrist for the first time – the sci-fi dream is now a reality. You can also stream Apple Music to the device, giving you one more reason to leave your phone at home.

Performance-wise, the processor has seen a 70% speed boost, and the new W2 wireless chip is far faster and more power efficient. All that, yet the case is still the same slimline size.

Apple is introducing new colours and bands, plus a new dark grey colour for the high-end ceramic model.

BEST BUYS... Curated picks of third-party kit >

> **MONITOR**

ViewSonic VP2772
£697
viewsonic.com

> If you're not fussed about 4K but still want exceptional image quality, this IPS display is truly superb. It offers 99% coverage of the Adobe RGB colour space, 10-bit colour and a 2560x1440-pixel resolution. It has HDMI 1.4, DVI and Mini DisplayPort connections, and four USB 3.0 ports for expansion.

> **ULTRA HD MONITOR**

Philips 328P6VJEB
£551
philips.co.uk

> We love this display. At 32 inches diagonally it's big enough to make its 4K resolution worthwhile, and its colour rendering is excellent – 100% of sRGB, 93% of Adobe RGB and 97% of the P3 gamut that Apple's new MacBook Pro uses. It's big, bold, beautiful and superb for productivity and colour work alike.

> **EXTERNAL SSD**

Freecom mSSD MAXX 512GB £227
freecom.com

> This drive is the fastest portable SSD we've ever tested. Freecom claims its write speeds can reach 700MB/sec, but in our tests it blazed past that to reach 713.8MB/sec write speeds and 907.3MB/sec read speeds, thanks to its USB 3.1 Gen 2 capability. It's costly, but worth it if you feel the need for speed.

> **NETWORK STORAGE**

QNAP TS-251+ 6TB
£452
qnap.com

> We know a good NAS drive when we see one, which is why the 6TB TS-251+ won *MF302*'s group test. It's one of the quickest NAS drives we've seen lately, with transfer rates of over 105MB/sec for large files. It has an HDMI port and a remote control for watching your media directly on your TV set. Four USB ports top it off.

> **WIRELESS ROUTER**

D-Link AC3200 (DIR-890L) £210
dlink.com

> Being a tri-band router, this blows every other router we've seen out of the water when it comes to speed. We saw speeds of 600Mbps between two Macs in the same room. Wi-Fi speeds hit up to 3.2Gbps, so its three channels mean it's no slouch there either. It's costly, but is a worthy investment if speed is your thing.

> **THUNDERBOLT DOCK**

CalDigit Thunderbolt Station 3 £269
caldigit.com/uk

> The winner of *MF317*'s head-to-head review introduces a whole new level of connectivity to your Mac. Equipped with two Thunderbolt 3 ports for blazingly fast file transfers, plus many more ports, you won't be lacking options to hook up your devices. And it can even charge the latest 15-inch MacBook Pro.

> **PRINTER**

Epson Eco-Tank ET-2600 £165
epson.co.uk

> The Eco-Tank ET-2600 has a fairly high cost, but its innovative cartridge-free design will save you a ton of money in the long run. It's got a scanner and copier, plus Wi-Fi and USB connectivity. Replacement inks are cheap, working out at a mere 0.2p per page for mono text, and just 0.35p per page for colour.

> **IP CAMERA**

Netatmo Presence
£250
netatmo.com

> The Netatmo Presence is an impressive outdoor security camera. Set in a sturdy housing, it's built to defy the elements. It has a built-in floodlight to deter intruders, and a 100° field of view recorded in 1080p. There's also an SD card included, making it easy to store and access your footage.

> **MACBOOK BAG**

STM Kings
£97
stmgoods.com

> Your MacBook needs protection, and the STM Kings backpack is the best way to guarantee that. Winner of this month's group test, it cleverly suspends your MacBook away from the floor to prevent bumps. With loads of storage, comfortable straps and a snazzy design, it's a great all-rounder.

BEST BUYS... Curated picks of third-party kit >

> DESKTOP SPEAKER

Kef Egg
£257
kef.com

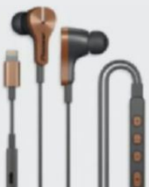> With rich, warm sound that works with pretty much any genre, the KEF Egg speakers are ideal partners for your Mac. They support high-quality AptX Bluetooth too, making them perfect for wireless playback. Quirky design, solid build quality and support for external subwoofers makes them a great choice.

> PORTABLE SPEAKER

Libratone Zipp
£169
libratone.com

> Want a multiroom audio system in your home? This is your best option, hands down. It cleaned up in *MF309*'s group test, scoring five stars in every test category. From top-notch sound to tons of great features, the Zipp is a superb choice. It even boasts AirPlay for great integration with Macs and iOS devices.

> HIGH-RES AUDIO PLAYER

Pioneer XDP-30R
£349
pioneer-audiovisual.eu

> Love music as much as we do? Then you'll want to get your mitts on one of these. It plays high-res audio files, and absolutely blows MP3 files out of the water. One listen will change the way you hear your audio tracks and, unlike other high-res audio players, it's reasonably priced. It really will rock your world.

> IN-EAR HEADPHONES

Pioneer Rayz Plus
£150
pioneerrayz.com

> If you own an iPhone 7, you'll know the struggle of trying to listen to music and charge your phone at the same time. These in-ear Lightning headphones solve that, thanks to their built-in charging port. They've also got great audio quality, excellent noise cancellation and will pause your tunes when removed from your ears.

> PORTABLE BATTERY PACK

Apple iPhone 7 Smart Battery Case £99
apple.com/uk

> Despite that silly-looking hump on its back, the official battery case for the iPhone 7 is rather impressive. It's easy to fit, the buttons feel great, and the soft inner lining protects against scratches. It isn't the largest capacity case, yet it has more than enough juice for busy days, and the bump is surprisingly comfy.

> ACTION CAMERA

GoPro Hero5 Black
£334
gopro.com

> We looked at GoPro's new flagship action cam this issue, and it coloured us impressed. GoPro has finally improved its cam's usability, and its a cinch to get started with the Hero5 Black. Add in superb 4K video quality plus a great range of shooting options and you've got a hugely powerful camera on your hands.

> DASH CAM

Transcend DrivePro 230 £156
transcend-info.com

> Dash cams help record what happens when you drive – useful if you're in an RTC. If you're in the market for one, this cam is one of the best. Packed with Wi-Fi, GPS logging, Full HD video and a night view as well, you get an awful lot for your money. There's even a free 16GB memory card included in the box.

> MICROPHONE

Blue Microphones Raspberry £150
bluemic.com

> Don't be fooled by this mic's small form factor; it punches hugely above its weight. Its close-up sound is intimate and bassy, and brings out the best in any voice. No matter whether you're recording an interview, creating a podcast or just jamming with your band, its clarity and depth makes it easy to recommend.

> FITNESS SMARTWATCH

Garmin Vivoactive HR
£162
garmin.com

> Packed full of tracking features for a host of sports, and filled with genuinely insightful metrics, this is a fitness smartwatch for nearly any occasion. Its battery will last you days, perfect for the odd weekend hiking trip. With all this, it's not hard to see why it won *MF308*'s group test.

BEST BUYS... Curated picks of third-party apps >

>PHOTO EDITOR (MAC)
Affinity Photo
£49
serif.com

>It's hard not to love Affinity Photo. Whether you're fancy yourself a seasoned pro or a photo novice, you will find it powerful and easy to use. Its interface has the perfect blend of ease of use and quick access to powerful features, and its useful batch processing is a great addition. An app that packs both power and practicality for less than £50? Sign us up!

>VIDEO EDITOR (MAC)
Final Cut Pro X 10.3
£300
apple.com/uk

>Apple's Final Cut Pro has always been a good option for video editors, but the latest version makes it even better. It introduces 'roles', which can be colour-coded to make your timeline's components easier to navigate, something that's further boosted by the streamlined interface. It supports the Touch Bar, too, plus wide colour on the new MacBook Pro.

>WEB DESIGN APP (MAC)
RapidWeaver 7
£70
realmacsoftware.com

>Ever since Apple stopped updating iWeb, Mac users have been searching for the ideal replacement. Well look no further – it's RapidWeaver. Don't know code? No worries, RapidWeaver lets you design visually if you want to. You can build any type of page and publish to any type of platform, and extend its functions with thousands of addons.

>WRITING APP (MAC)
Ulysses
£36 per year
ulyssesapp.com

Here at MacFormat, we like to demand a lot from our writing apps. We want them to run fast, be unobtrusive, support iCloud and Dropbox, export to lots of file formats, and much more. Ulysses does all that and more to a great standard. Throw in Markdown compatibility and an accomplished iOS app and you've got the best writing experience available today.

>UTILITY (MAC)
Moom
£10
manytricks.com

Moom is the window manager that should be built into macOS. Hover over any window's green zoom button and Moom's controls appear, so you can quickly make it fill a full, half or quarter screen. It also features handy window snapping – just drag a window to the edge of the screen to snap it in place. It's powerful, but so easy to use.

>MUSIC-MAKING APP (MAC)
djay Pro
£49
algoriddim.com

>When it comes to making music on your Mac, djay Pro is our favourite app by far. It comes with everything you need to make amazing professional music, from coloured waveforms to a four-deck view and even true-to-life grooves on the virtual records. It integrates neatly with Spotify, and its MacBook Pro Touch Bar integration is very handy.

>STREAMING SERVICE (MAC/iOS)
Spotify Free, £10 per month (Premium)
spotify.com

>Despite strong competition from the likes of Tidal, Apple Music and Amazon, Spotify is our top music-streaming choice. It hits all the right notes, from its fair price to its curated playlists. Its library is one of the largest on the market, and its interface is simple and straightforward to use. And, unlike Apple Music and Tidal, it has a free tier as well.

>PRODUCTIVITY APP (MAC/iOS)
Fantastical 2 £49 (Mac), £5 (iPhone)
flexibits.com

>If you find your calendar and reminders are getting out of control, Fantastical is the app for you. It supports natural language entry, so that you can enter events and reminders as you would speak and Fantastical will get to work. It's got a nifty menu bar window, plus a great interface, clever calendar management and a powerful iOS app to boot.

>EMAIL MANAGER (MAC/iOS)
Spark
Free
sparkmailapp.com

>Feeling inbox anxiety? The solution could be Spark, a free email app for Mac and iOS. It's centred on a 'smart inbox', which prioritises your emails based on importance – no more losing that vital work email among a sea of spam. You can snooze emails and be reminded of them later, and search via natural language too. And to top it all off, it's free.

PHOTO STREAM

GET ON INSTAGRAM

> Share your images with us by using the hashtag #MacFormat and we'll print the best here in the magazine. While you're there, follow @MacFormat (Twitter) and @MacFormatUK (Instagram).
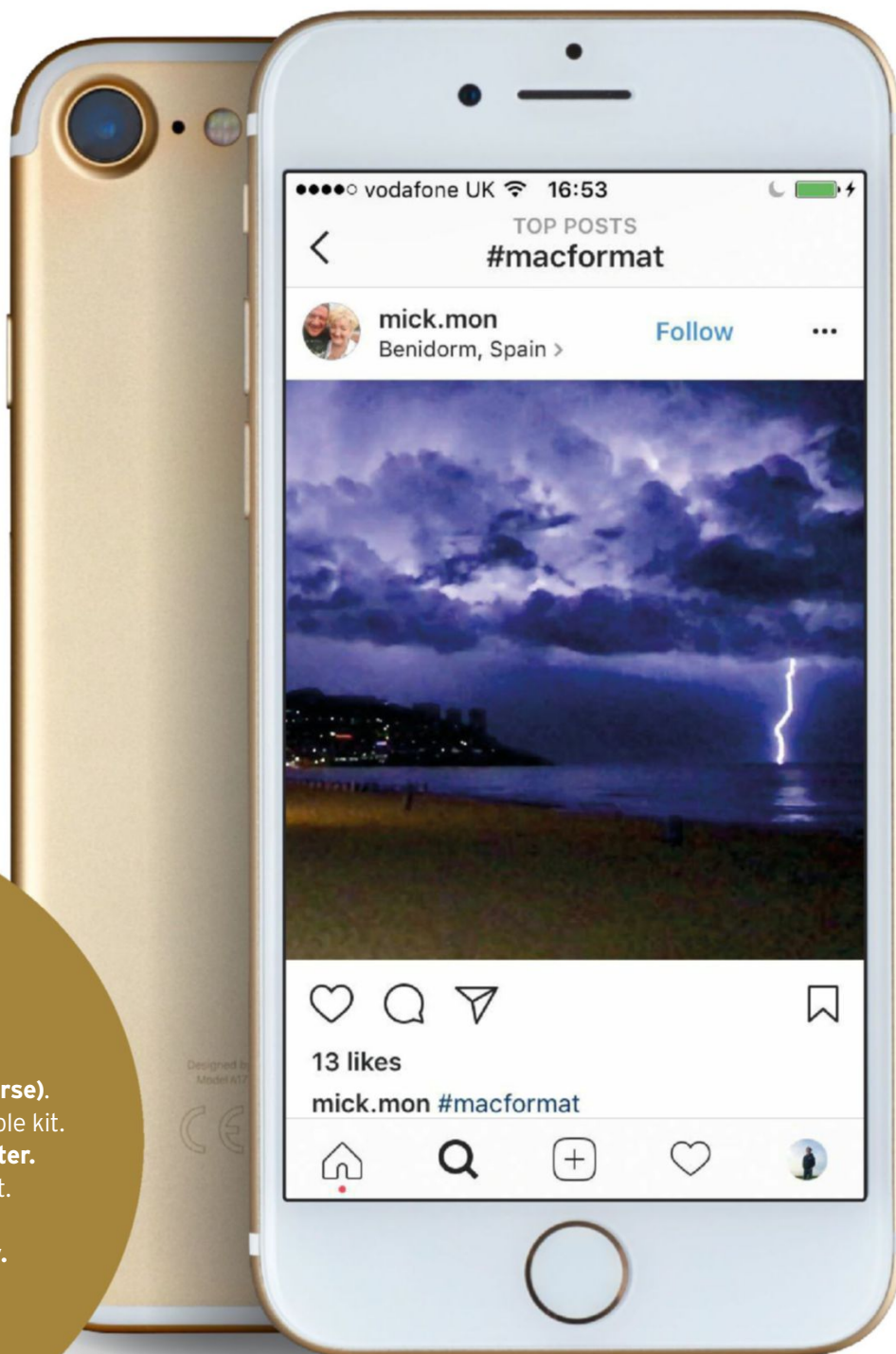
Moody sky
Lightning strikes
in sunny Spain!
BY MICK.MON

We're sincerely hoping that Mick has used some kind of filter on this shot, or is the sky really that shocking shade of purple when low pressure weather hits Benidorm? We do like the watercolour effect, and the lights in the distance for added composition. So much for sunny Spain though, eh? Still, at least the lightning bolt is a pretty safe distance away… Unless anyone happens to be out there on a boat, of course!

Share your pics with us using the hashtag #MacFormat on Instagram. In each issue we'll pick our favourites to feature on this page.

WHAT TO DO!

> **1** Open an Instagram account.
> **2** Follow @MacFormatUK (of course).
> **3** Take a picture of, or with, your Apple kit.
> **4** Share it on Instagram or Twitter.
> **5** Use the hashtag #MacFormat.
> **6** Feel the warm glow of an appreciative Apple community.
> **7** See if you made it onto the pages of this very magazine!
> **8** Repeat.

TOP POSTS
#macformat

mick.mon
Benidorm, Spain

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13 likes
mick.mon #macformat

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High Sierra NEXT ISSUE

50
macOS
High Sierra
tips & tricks

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› Improve your skills with Photoshop CC
› Everything you need to know about APFS
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...and more!

* Contents subject to change

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iPhone history

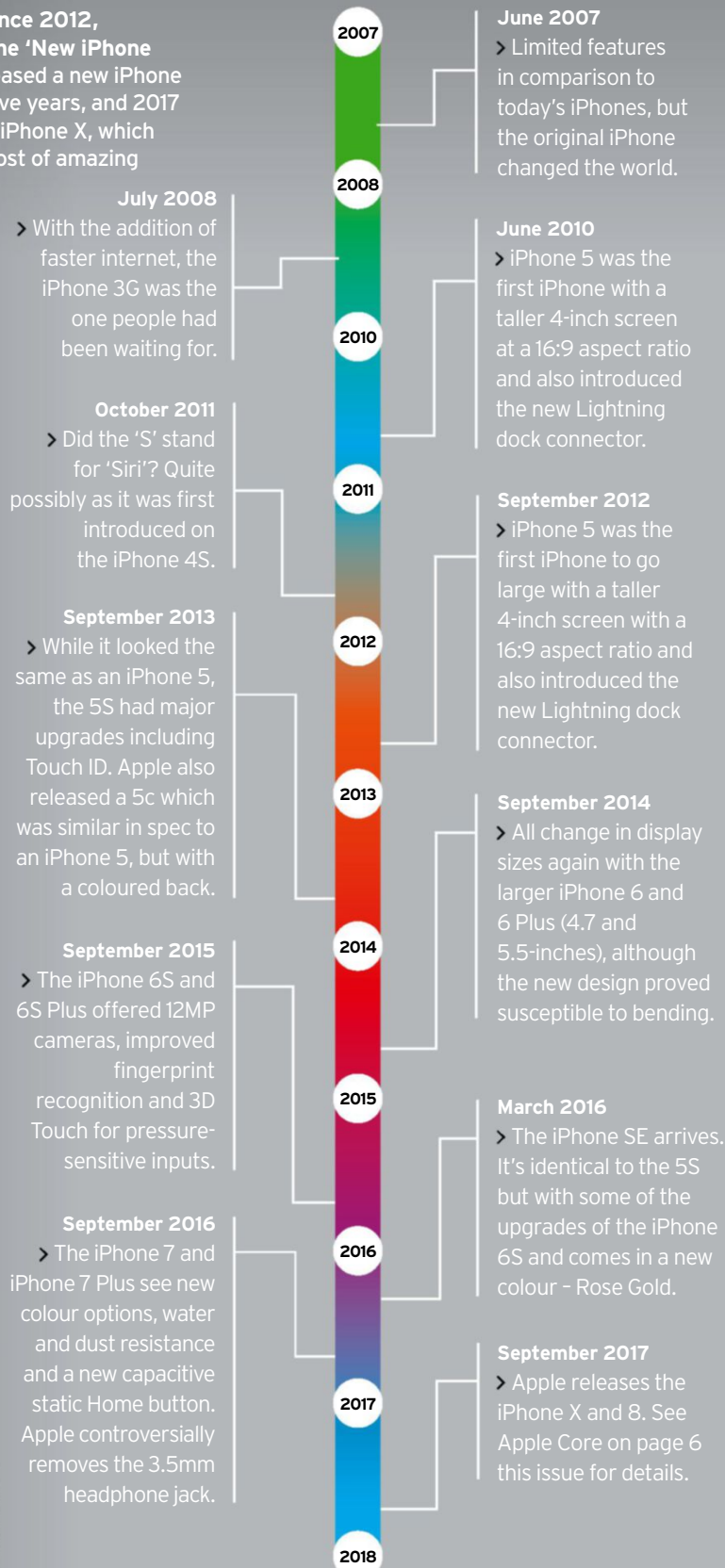## We celebrate 10 years of iPhone with a look back at its evolution

As you can see here, since 2012, September has become 'New iPhone month'. Apple has released a new iPhone every September for the last five years, and 2017 was no exception with the new iPhone X, which offers face recognition and a host of amazing features, and the iPhone 8 with an improved camera, and much more. We take a look back at how we got here from the first iPhone way back in 2007...

Antennagate

> The story of the iPhone has been one of almost unparalleled success except for one small bump in the road – a scandal centred around the iPhone 4 that became known as 'Antennagate'. Some users noticed that once held in the hand, the phone's signal strength would start to fade, a situation that resulted in Steve Jobs emitting his famous missive ''you're holding it wrong'', before more publicly acknowledging the problem and offering all iPhone 4 owners a free case, which solved the issue.

The iPhone 4's antenna was a source of problems.

July 2008
> With the addition of faster internet, the iPhone 3G was the one people had been waiting for.

October 2011
> Did the 'S' stand for 'Siri'? Quite possibly as it was first introduced on the iPhone 4S.

September 2013
> While it looked the same as an iPhone 5, the 5S had major upgrades including Touch ID. Apple also released a 5c which was similar in spec to an iPhone 5, but with a coloured back.

September 2015
> The iPhone 6S and 6S Plus offered 12MP cameras, improved fingerprint recognition and 3D Touch for pressure-sensitive inputs.

September 2016
> The iPhone 7 and iPhone 7 Plus see new colour options, water and dust resistance and a new capacitive static Home button. Apple controversially removes the 3.5mm headphone jack.

Timeline: 2007, 2008, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018

June 2007
> Limited features in comparison to today's iPhones, but the original iPhone changed the world.

June 2010
> iPhone 5 was the first iPhone with a taller 4-inch screen at a 16:9 aspect ratio and also introduced the new Lightning dock connector.

September 2012
> iPhone 5 was the first iPhone to go large with a taller 4-inch screen with a 16:9 aspect ratio and also introduced the new Lightning dock connector.

September 2014
> All change in display sizes again with the larger iPhone 6 and 6 Plus (4.7 and 5.5-inches), although the new design proved susceptible to bending.

March 2016
> The iPhone SE arrives. It's identical to the 5S but with some of the upgrades of the iPhone 6S and comes in a new colour – Rose Gold.

September 2017
> Apple releases the iPhone X and 8. See Apple Core on page 6 this issue for details.

Project Purple

> Steve Jobs instigated the iPhone project in 2005. It was called Project Purple 2 inside the walls of Apple and switched tracks from designing a touchscreen tablet (the original Project Purple) to a touchscreen phone instead. Apple created the iPhone in collaboration with AT&T.

The iPhone took two and a half years for Apple to develop.

Market domination

> While Android smartphones may sell more units and thus have a larger market share, nobody is making profits in the smartphone market that compare with Apple's. In fact, in 2016, BMO Capital Markets analyst Tim Long estimated that Apple accounted for 103.6% of the profit in the third quarter. It was over 100% because other companies actually lost money!

The iPhone is the most profitable product in history.

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