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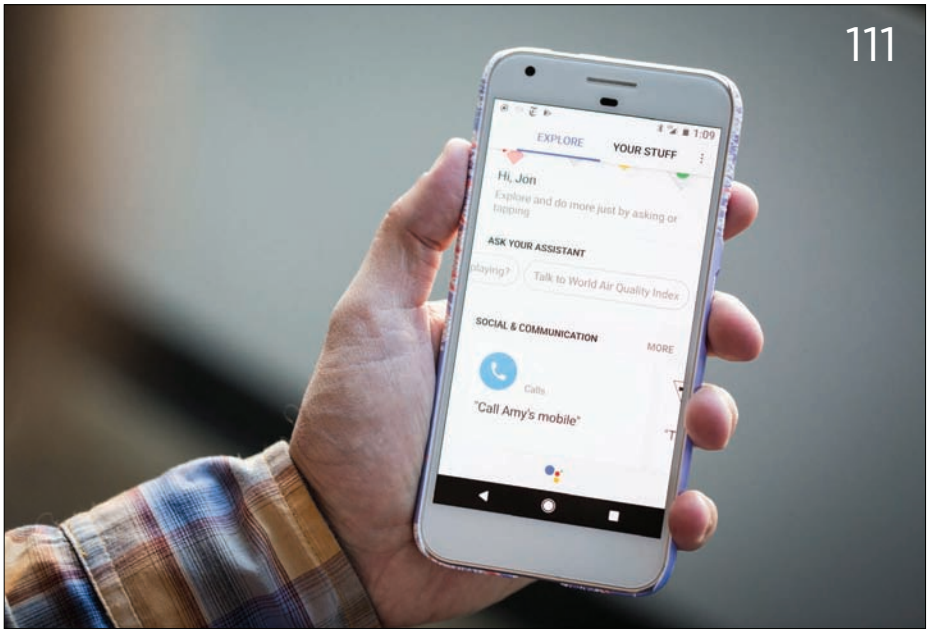


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REVIEW



# OnePlus 6

Price: £469 inc VAT from [fave.co/2x12Z4Z](https://fave.co/2x12Z4Z) ★★★★★

It's four years since OnePlus released its first phone, and the firm is already on its eighth handset. The OnePlus 6 arrives a point where notches are all the rage and while it might not have every feature a phone can have, it's still an amazing deal.

## Design

If you're familiar with the OnePlus 6's predecessor, the 5T, then this isn't a huge departure in terms of design and build. It's largely that phone with a collection of tweaks and improvements.

The headline news is that the phone is made from Gorilla Glass 5, but has a metal border with glass on the front and back. Three different finishes are available: Midnight Black, which has the classic OnePlus look; Mirror Black is heavily polished and has that quintessential glass look and feel; while Silk White, has both white and pink tones thanks to crushed pearl along with a soft powder finish to the touch similar to the original OnePlus.

Despite rumours of wireless charging – which requires glass to work – this is not a feature of the OnePlus 6. The glass is there for a premium look and feel only, and there's a silicone case in the box to help protect it.

The phone certainly looks and feels like a premium device (and the antennas are more hidden now), but there are downsides. The device is, for example, more slippery in the hand and, particularly with the Mirror Black model, the glass shows up fingerprints.

We were hoping that this would be the first waterproof OnePlus phone, but unfortunately this isn't the case. It does offer improved water resistance, so no IP rating, but it will cope better in the rain or an accidental drop into a puddle.

Some smaller things to note before we move on include the fact there's still a headphone jack and that the camera array, which still sticks out, has moved to the middle of the phone above the fingerprint scanner – which is a slightly different shape.

Finally, the Alert Slider has moved to the right side of the phone above the power button, so you can use it with your thumb – sorry left handers.

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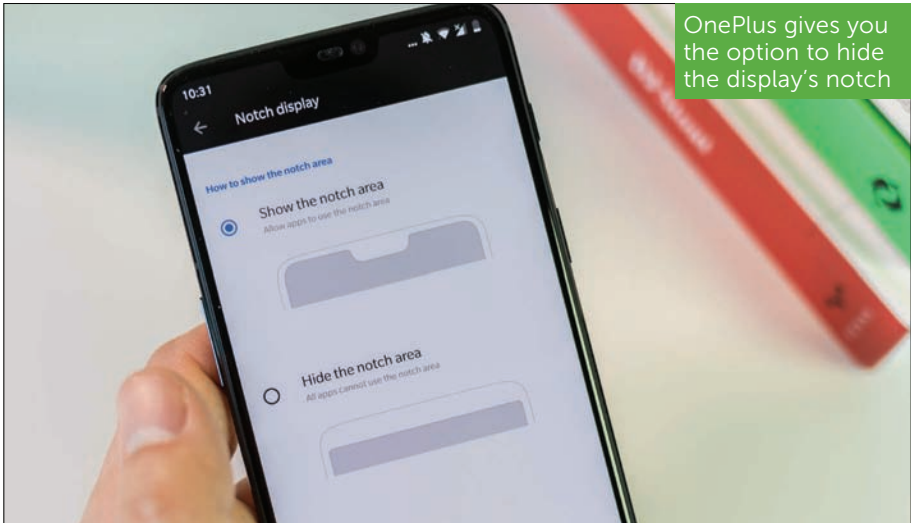
The OnePlus 6 is the same size as the 5T (156.1x75mm), but slightly thicker and heavier – 7.75mm and 177g aren't bad, though.

**Display**

Despite having the same footprint as the 5T, the OnePlus 6 offers a larger screen thanks to much smaller bezels – it's now 6.28in rather than 6.01in. The phone uses with the same Optic AMOLED technology, so the main difference is the notch at the top.

The resolution is slightly higher at 2,280x1,080 due to that extra bit of screen and the new 19:9 aspect ratio. That might be lower than the Quad HD resolutions on more expensive phones, but for most people this is plenty good enough.

Opinions on phones with notches are split, but we've found that you do get used to it and OnePlus



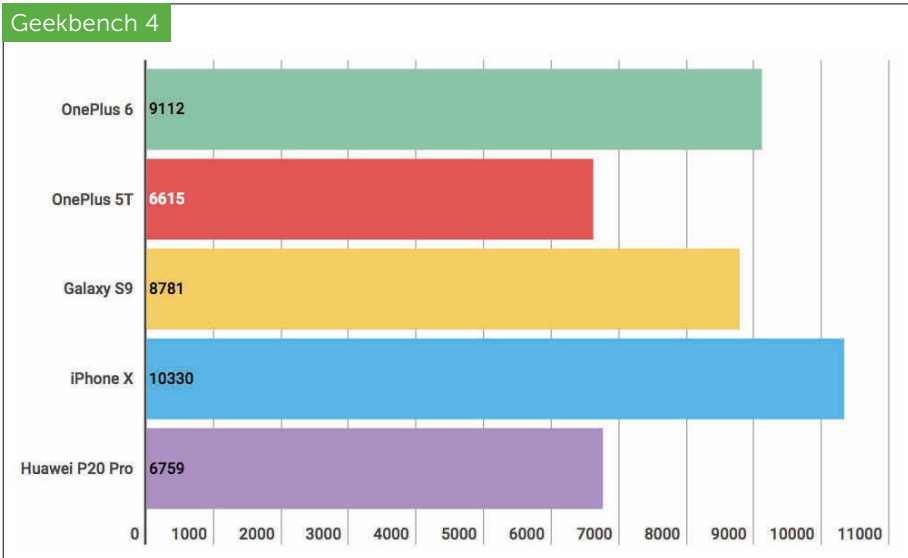
gives you the option to hide it if you prefer. This makes the background black, while still displaying icons that are dimmed, so it provides a different style.

The main goal here is to offer as much screen as possible and an 84 percent screen-to-body ratio is a decent effort. It just means that such a large screen can be tricky to use one-handed seeing as our hands aren't getting bigger to match the trend.

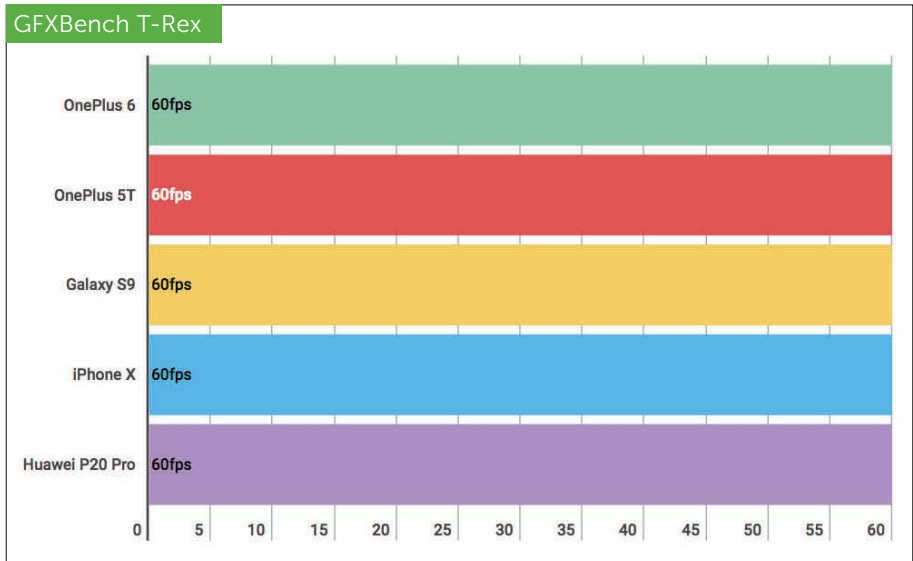
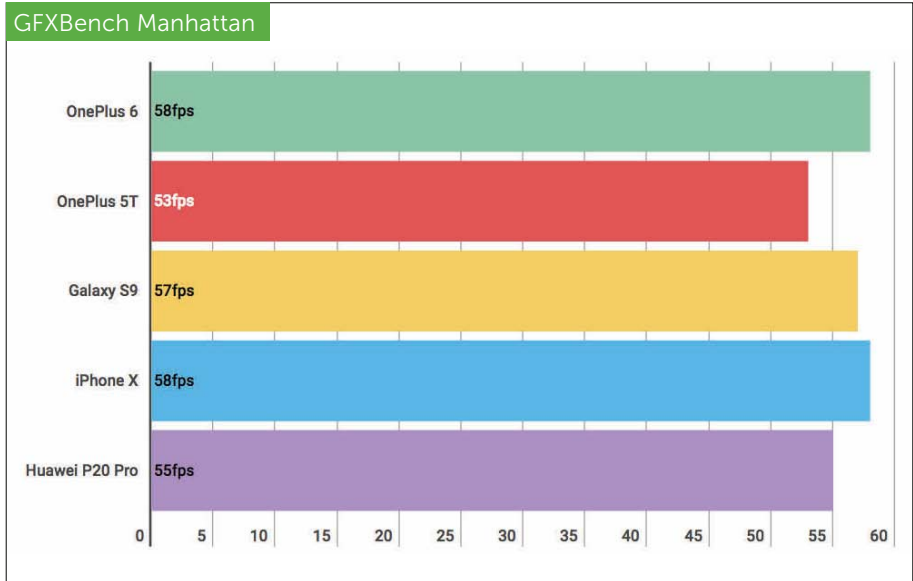
Luckily, you can do things like pull the notification pane down by swiping down in the middle of the display rather than having to reach right to the top.

### Processor, memory and storage

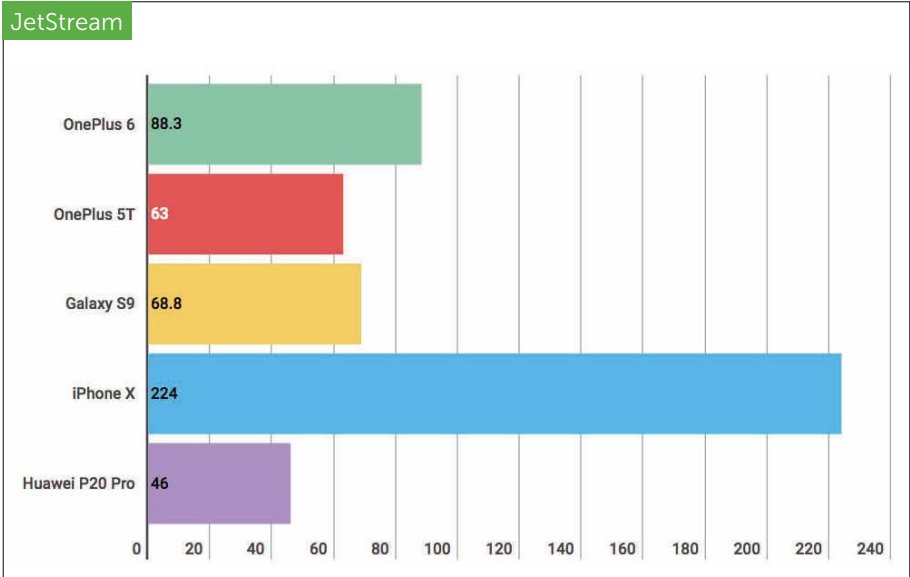
The OnePlus 6 comes with the latest Qualcomm Snapdragon 845 flagship processor. The firm is known for packing in a serious amount of memory and this



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handset is no different as you get either 6- or 8GB. There’s no microSD card slot, but you get at least 64GB of storage as standard. There are also models offering 128- or 256GB.

OnePlus’s tag line for the phone “The Speed You Need”, and there’s no denying how fast it is. It’s noticeably quicker in operation than many other phones and benchmark results are up there with (in some cases better) phones a lot more expensive.

### Connectivity, audio and biometrics

The OnePlus 6 comes with dual-band 11ac Wi-Fi, Bluetooth 5.0 with aptX HD, GPS and NFC. It’s still a dual-SIM phone and the only change is that it’s now 4G Cat 16, which means it’s the first OnePlus

to get Gigabit speeds – you won't see that in real life, though. Once again there's a USB-C port, a headphone jack and a single down-facing speaker.

The rear-mounted fingerprint scanner has a slightly different shape to that found on the 5T, but it's basically the same and works quickly. Most of the time, though, you'll probably end up using Face Unlock, which is extremely quick, and even works well in low light.

## Cameras

The cameras might have moved position on the back of the phone, but they're not hugely different to the ones on the 5T. The OnePlus 6 still has dual cameras, one at 16Mp and the other at 20Mp. They are both Sony sensors and have an impressive aperture of f/1.7. The biggest addition this year is that the main 16Mp sensor now has optical image stabilization (OIS) and the sensor is slightly larger to take in more light.

There's a telephoto option in the camera app for 2x zoom, though this doesn't switch to the higher resolution sensor, it just crops the image. Instead, the 20Mp lens is mainly used for the depth effect of portrait mode. You can take photos in 4:3, 1:1 or even 19:9 to fill the screen, but it's worth noting that aspect ratio will look odd elsewhere.

The front camera is still 16Mp with an f/2.0 aperture and is able to record video at up to 1080p at 30fps.

We like how simple and easy the app is to use, including changing modes and settings.

As you can see in our samples opposite, the OnePlus 6 performs very well. The camera offers



Landscape shot

excellent detail, colour, exposure and white balance – in a range of conditions, even low light. It's not the best phone camera but at the price, you're getting much better quality than you would normally expect.

In terms of video, you can shoot at up to 4K at 60fps and results are impressive with the OIS doing a decent job of smoothing things out. We would recommend shooting in



Low light shot

## REVIEW

1080p at 60fps for the best combination of quality and file size, though.

Slow motion is all the rage right now and although the OnePlus 6 offers 720p at 480fps or 1080p at 240fps, which is half the frame rate of rivals such as the Samsung Galaxy S9 and Sony Xperia XZ2, you can shoot for up to a minute in one go making it easier to capture the moment you're after.

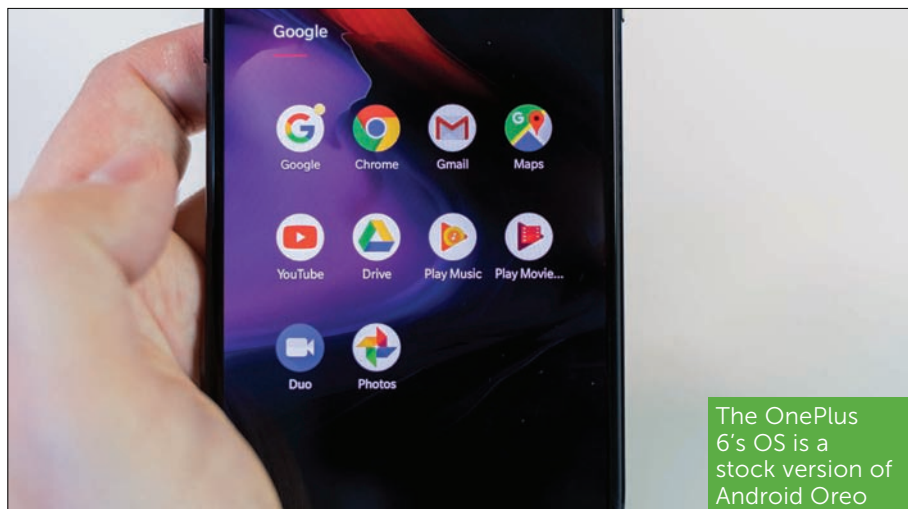
### **Battery life**

Like the 5T, the OnePlus 6 has a 3,300mAh battery. We've been fans of Dash Charge since it was first introduced and it makes an appearance here. In our tests, it enabled our test unit to reach whopping 55 percent from a 30-minute charge from a dead phone. That's seriously impressive and for some users that could be a whole day of usage as promised, if you're not a heavy user that is.

### **Software**

The phone comes with the firm's own OxygenOS, which is a stock version of Android 8.1 Oreo. OnePlus hasn't messed around with the interface and importantly you don't get loads of bloatware. It does, however, come with lots of little tweaks and additions that have been around for a while, namely the Shelf which is a swipe away from the home screen. This provides quick access to recent contacts and apps, as well as providing useful information such as data usage and available storage.

Customization is good, so you can really use the phone how you like. This means you can, for example,



hide the notch, or change the font. The OnePlus 6 also gives you the option to hide or even switch off the navigation bar at the bottom of the screen. The latter means you'll use gestures that are available already on the 5T via a software update. They're similar to those used on the iPhone X and the ones coming in Android P, so you swipe up from the bottom of the screen to go home, swipe and hold to open recent apps and swipe from the right side to go back.

## Verdict

The OnePlus 6 might not have everything on the ultimate phone tick list, but that doesn't really matter. There are more expensive phones on the market with additional features like waterproofing and wireless charging, but those are luxury items which a lot of people won't actually use very often. What OnePlus

has done is nailed all the most important stuff and made a phone that offers excellent design, specs and performance at a frankly ridiculous price. So for most people, the 6 is an absolute bargain. **Chris Martin**

## Specifications

- 6.28in Full HD+ (2,280x1,080, 402ppi) AMOLED display
- Android 8.1 Oreo with OxygenOS
- Qualcomm Snapdragon 845 octa-core processor
- Adreno 630 graphics
- 6/8GB RAM
- 64/128/256GB storage
- 16- and 20Mp rear cameras, f/1.7, support for 4K video at 60fps
- 16Mp front camera, f/2.0
- 802.11 a/b/g/n/ac Wi-Fi
- Bluetooth 5.0
- 4G LTE (Cat 16)
- Dual nano-SIM
- NFC
- Headphone jack
- Fingerprint sensor (rear)
- USB-C
- 3,300mAh non-removable battery with Dash Charge
- 156.1x75x7.75mm
- 177g



# LG G7 ThinQ

Price: £599 inc VAT from [fave.co/2s0wNKa](https://fave.co/2s0wNKa) ★★★★★☆

**H**ot on the heels of the V30S ThinQ is the G7 ThinQ, LG's other flagship phone for 2018. There are many similarities between these two, but also a couple of significant differences.

First, the G7 has an IPS screen rather than OLED, and it benefits from the newer, faster Snapdragon 845 processor. It also gains the ability to take portrait photos with blurry backgrounds (which the G6 lacked) and has a traditional headphone socket, yet is waterproof. LG has also beefed up the audio with a bigger, louder speaker and used some nifty screen

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technology to make the screen one of the brightest around. With a sensible price, the G7 could be the Android flagship you've been waiting for – though the OnePlus 6 (see [page 4](#)) is a good chunk cheaper if you can live with its compromises.

Don't worry about that ThinQ branding: it's a suffix LG is now using for all of its products that have 'artificial intelligence'. We'll get to the AI later.

### Design

LG has clearly stuck with the G6's design and refined it for the G7. It's a Gorilla Glass 5 sandwich: a curved glass back is order of the day for 2018 flagships, and unlike the Huawei P20 and OnePlus 6, the G7 supports Qi wireless charging, so the glass isn't simply there to look pretty. (But you can keep it looking prettier for longer with these cases).

There's IP68 water resistance, but whereas other manufacturers have used this as an excuse to drop



The dedicated Google Assistant button is located below the volume buttons



the headphone jack, not LG. Audio is one of the key features of the phone, so it's great to see a 3.5mm jack on the bottom next to the USB-C port.

Previous LG phones have had their power button integrated with the fingerprint scanner, but the G7 ThinQ has a normal sleep/wake button on the right-hand side. Unusually for an Android phone, volume buttons are opposite, like an iPhone.

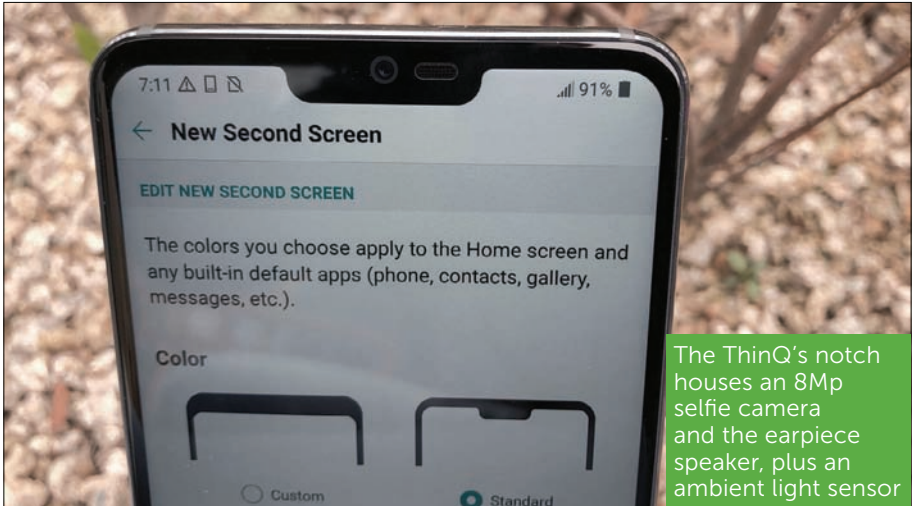
Below the volume buttons is another that's dedicated to the Google Assistant, a bit like Samsung's Bixby button. If you find this annoying you can disable it, but it's a much easier way of calling up the assistant than holding the on-screen home button.

You can press and release, or press and hold to speak to the Assistant a little like you were using a walkie-talkie. A third mode lets you double-press the button to launch Google Lens. Plus, thanks to far-field mics, you can say "OK Google" from across the room just as you would with a Google Home.

One of the most noticeable design features is the screen notch. It's by no means the only Android phone with a notch: Huawei's P20 series has one, as does the OnePlus 6 and Asus ZenFone 5.

Here the notch is a little longer than the P20's, but not as large as the iPhone X's – we've compared the G7 ThinQ and Apple's handset separately. The notch houses an 8Mp selfie camera and the earpiece speaker, plus an ambient light sensor.

LG calls the sections of screen either side of the notch a 'second screen' – a reference to the real second screen on the V-series phone from a couple of years ago. You'll find options in the Settings app



to hide the notch by making the screen black, but you can also opt for different colours or some nifty gradient that make it blend differently.

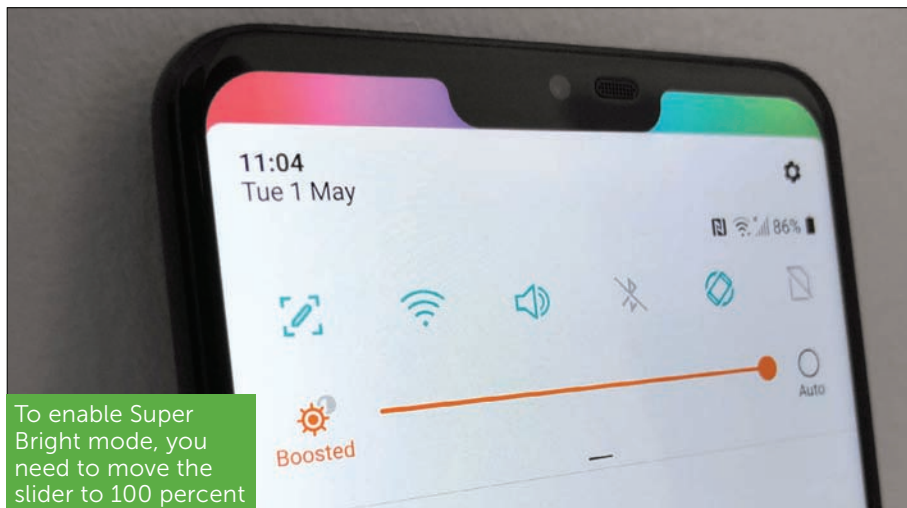
Some will be miffed that there's both a notch and a small 'chin' at the bottom, but LG says that it's difficult to make the bottom bezel as thin as the top one because of the electronics required for the IPS screen.

Overall, the G7 ThinQ looks and feels every inch the flagship phone.

## Display

The screen has an aspect ratio of 19.5:9 and a resolution of 3,120x1,440 pixels. It's tricky to measure its diagonal exactly because of the rounded corners, but LG quotes it as 6.1in.

Rather than use the traditional sub-pixel arrangement of red, green and blue, the G7's MLCD+



display adds a white pixel to boost brightness without using more power. You might therefore argue that a quarter of the pixels don't add anything to picture quality – and you'd be right – but resolution is higher than some competitors already and it looks nice and sharp. It offers a Super Bright mode, which raises brightness to 1,000 nits for a maximum of three minutes, aiding screen readability when outdoors in sunny conditions. To enable it, you have to move the brightness slider to 100 percent, then tap on the sun icon which appears to the left of it.

We took the G7 outdoors in very bright conditions and it's noticeably brighter than all its rivals. And it's much easier to view a web page, read and reply to a text message or use the dialler to ring someone. It's also useful when using the viewfinder to frame a photo, but it's not meant to be used for long periods:

## REVIEW

it turns off after three minutes to preserve battery life and prevent overheating.

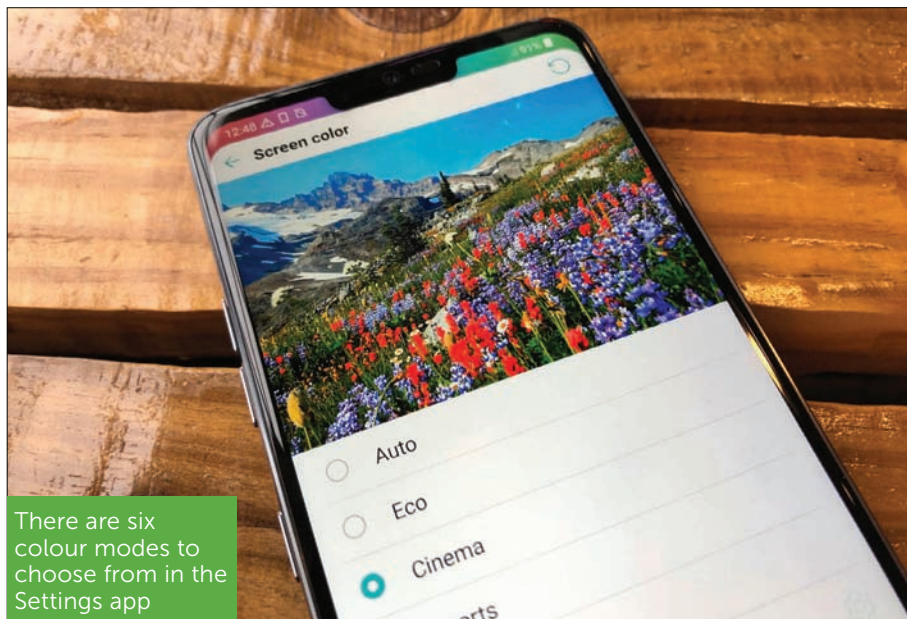
It's a shame that you have to enable it manually (the AI smarts clearly aren't up to the job of making this process automatic for some reason) and it's also slightly annoying that you won't get the maximum of 1,000 nits unless it is absolutely dazzling outdoors.

We used our Spyder 5 colorimeter to measure peak 'Boosted' brightness indoors and were baffled that it varied between around 630 and 750 nits. It was only when we took the setup outside and allowed the sun to shine on the G7 that we finally saw 971 nits. With Super Bright mode disabled, the brightest you'll see is around 500 nits.

Aside from the high brightness, colours looks vibrant and there isn't a really noticeable colour shift when tilting the phone and viewing off axis.

In the Settings app there's a choice of six colour modes, similar to those you'd find on a TV: Eco, Cinema, Sports, and more. By default, the mode will be chosen automatically based on the app you're using. There's an Expert mode where you can fine-tune the settings manually, even down to adjusting the red, green and blue levels individually.

Thanks to that high brightness, the screen supports HDR 10 content, and covers 100 percent of the DCI-P3 gamut, so it can display all the necessary colours. Unfortunately, refresh rate is fixed, so there's no difference whether you pick Game mode or Cinema. The screen defaults to quad HD out of the box, but you can choose a lower resolution if you want to try and eke out more battery life.



There are six colour modes to choose from in the Settings app

## Processor, memory and storage

As befits a flagship Android phone in 2018, the G7 has the latest Snapdragon 845 processor. Depending on region, it's paired with either 4GB or 6GB of RAM and 64GB or 128GB of internal storage. The UK model will have the 4GB/64GB combo, but as there's a microSD slot in the SIM tray, you can expand that storage easily.

In Geekbench 4, the G7 scored 8979 in the multi-core test and 2312 in the single-core. So it's certainly quick. In JetStream, it managed 86.5, another top-end score.

We couldn't run GFXBench on the G7 that LG sent us to review due to the way the operating system had been installed for test phones, but we know

from other 845-equipped phones that it should hit the screen's 60Hz limit in T-Rex and Manhattan. In Manhattan 3.1, expect a little over 50fps, and around 30fps in the more demanding Car Chase test.

As you'd expect, all the supporting hardware is the latest standard including 802.11ac Wi-Fi and Bluetooth 5. There's NFC too, which you can use for Google Pay.

## **Connectivity and audio**

Despite having a mono speaker in the bottom edge rather than stereo speakers, the G7's sounds better than you'd expect from a phone. That's because the 'resonance chamber' is 17 times larger than previous phones. Any empty space inside the phone is used, and the water-resistant tape forms a seal that effectively makes the whole phone a speaker cabinet.

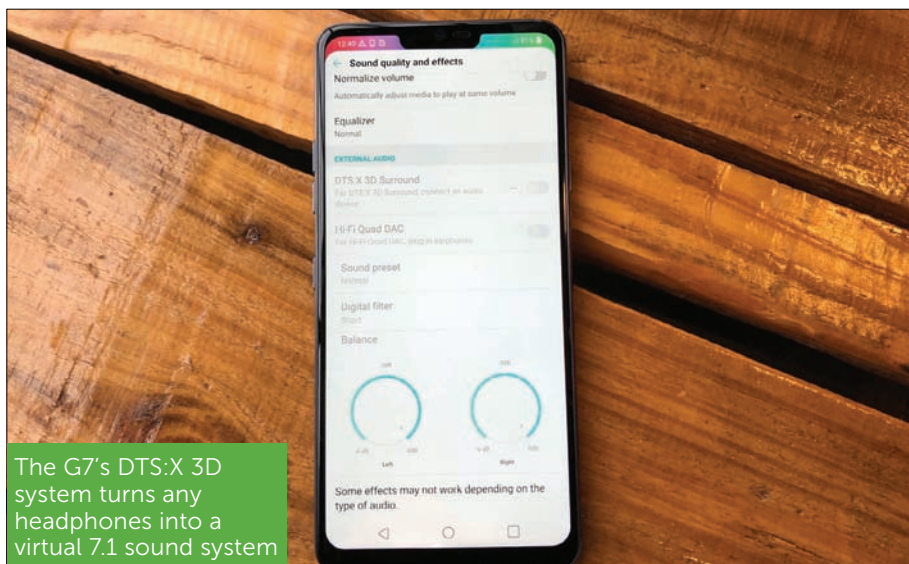
This means the back of the phone vibrates when sounds or music is played. Bass is certainly better than any other current phone, but it's no Bluetooth speaker replacement. We listened to a variety of genres on it and found that piano and bassier stringed instruments such as cellos sound much more full-bodied than on any other current flagship.

Because the phone itself vibrates, sound (and volume) improves if you place it on a surface. You'll notice the most difference if you put it on something thin such as a cardboard box or – as LG did in demos – a guitar. This amplifies the sound much more than it does with other phones, but you're unlikely to hear the benefit on a hardwood kitchen worktop, desk or a dining table as they're generally too thick to vibrate. Putting the G7 in a case will dampen this

‘boombox’ effect, especially if you pick a silicone case or anything that isn’t rigid.

As with the V30S, a quad DAC is used. This hi-fi kit was missing from the UK version of the G6, so it’s good to see it in the G7 and – from our tests with various pairs of wired headphones, this is a great-sounding phone. There’s support for MQA files, which is used for hi-res audio (including streaming).

The G7 is the first phone to have a DTS:X 3D system, which turns any headphones into a virtual 7.1 sound system. It’s currently exclusive to LG, which says you don’t need special video which has DTS:X 3D sound. Instead, it will work with any video, including YouTube and Netflix streams. In practice, we found it hard to notice any difference in most videos, even in action scenes when bullets are flying around.



The G7's DTS:X 3D system turns any headphones into a virtual 7.1 sound system

## Cameras

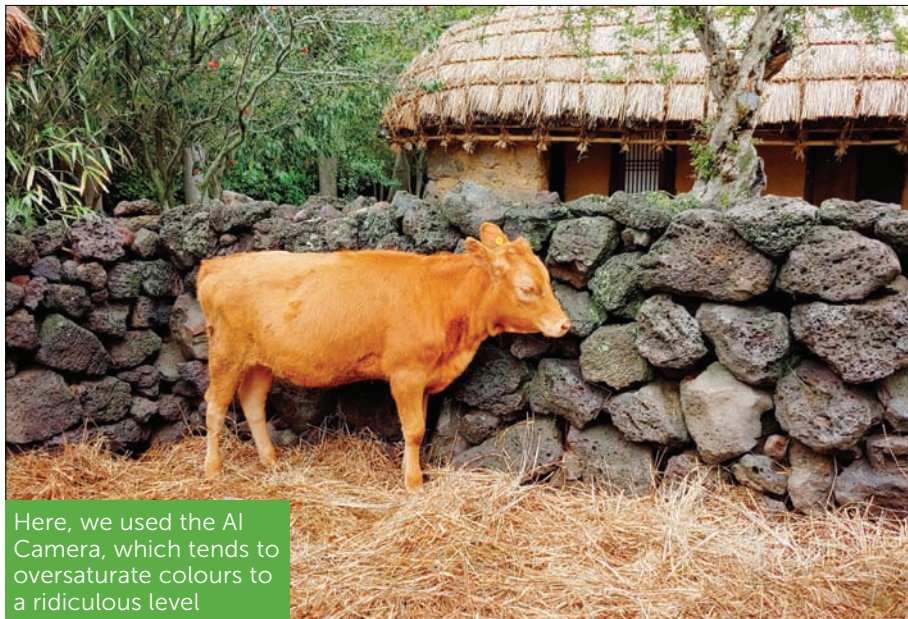
With most phones sharing similar internal components, manufacturers are increasingly trying to differentiate by adding more cameras. The G7 takes the same approach as its predecessors: one standard camera and one wide angle. The main camera is the same as the V30S's with a 71-degree field of view. It has a 16Mp sensor and optical stabilization. The wide-angle camera has a 107-degree field of view and reduced distortion compared to older phones. There's no OIS, partly because you don't need it with such a wide angle. It's also fixed focus, unlike the main camera which has auto-focus. There's an 'AI' mode that can identify 19 different types of scene, which are automatically selected if one is recognized. In each, it will apply colour filters, brightness and recommends the wide-angle camera or Super Bright Camera (see [page 26](#)) when appropriate.

Unlike the P20 Pro, the AI Camera is a completely separate shooting mode, and it isn't on by default. Processing the scene is done on-device, but takes around 1.5 seconds. And after you take a photo there's a one-second delay before you can take another photo. To be clear, with AI CAM turned off, there are no perceptible delays when shooting in good light.

The Super Bright Camera is for use when it's really dark. It uses a technique called pixel binning, which helps to get better results from the camera, but it means that you get 4Mp photos rather than 16Mp.

If you're taking video, having Super Bright enabled in the settings means the same method is used, so you get full HD quality rather than 4K in low light. You can





Here, we used the AI Camera, which tends to oversaturate colours to a ridiculous level

also use the wide-angle camera in Super Bright mode, and the AI CAM mode, too.

Getting back to video, the G7 tops out at 30fps in 4K, but you can record video in HDR. There's also a nifty 'Cine Video' mode which applies some Hollywood-style filters to make your footage look more cinematic. Whichever mode you choose, stabilization is available not just at 1080p but also 4K.

Portrait mode is another key feature, as people expect their new phone to be able to blur out the background for a nice DSLR-style effect. The G7 keeps the same field of view as when shooting with the main camera, unlike most phones which use the zoom in and have a much narrower view.

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Super Bright mode is impressive, so long as you don't look too closely

Slo-mo is unimpressive for a 2018 flagship as the G7 ThinQ can record 240fps at 720p. We'd have expected this to be 1080p, and the option to record in short bursts at 960fps.

Overall, image and video quality is good. The Super Bright mode produced some impressive looking shots, but only if you don't look too closely. They are low resolution to start with – 4Mp – but when you zoom in certain areas look like an oil painting with no detail at all. The brightness is remarkable, though, as the above image was taken when there was very little light.

Obviously, the main benefit of the G7 is the wide-angle view that lets you capture more of the scene

without using Panorama mode. But we can't help feel that we'd prefer a telephoto camera: rivals that have a 2x or 3x zoom let you get closer to the action as well as giving you the option of taking a panorama when you can't move further back.

## Battery life

The 3,000mAh battery is smaller than some rivals, but LG is confident this is enough because of the more power efficient screen.

In general use, we found the G7 would just about last a day with normal use including taking lots of photos. If you're a mobile gamer, prepare to carry a USB powerbank around with you as you'll need to top up before too long.

Using Geekbench 4's battery rundown test, the G7 managed 5 hours, 46 minutes with the screen set to 120 nits. That's not a terrible result considering the capacity, but it is noticeably less time than you'll see from the OnePlus 6 and its 3,300mAh battery. The G7, though, support for Qi wireless fast charging, and with the Quick Charge 3.0 adaptor included in the box it charges to just over 50 percent in 30 minutes.

## Software

LG's tweaks to Android 8 are extensive, but you'll notice them most in the Settings app which looks different from stock Android. Usefully, they're divided into Network, Sound, Display and General which means it's easy to get to the commonly used settings.

The notch isn't an issue for apps, as nothing extends into that 'second screen' area when you rotate

## REVIEW

the phone to landscape mode. When watching videos full screen, for example, they have rounded corners on both sides, and the extra bits of screen act as a black border. In portrait mode, content does extend into the 'ears' but is overlaid with a grey bar and the usual Android notification icons over the top.

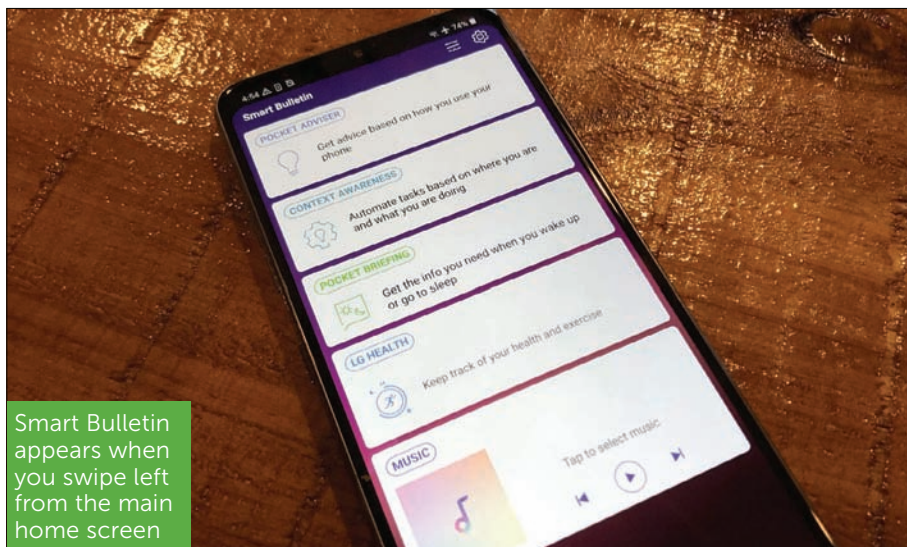
In the settings you can enable LG's Smart Bulletin which appears when you swipe left from the main home screen. This is a combination of alerts and reminders as well as automation, LG Health info and a music player widget.

Pocket Briefing summarizes the stuff that's important to you, and the idea is you can check it when you go to bed and / or get up in the morning.

Pocket Adviser offers toggles for reminding you about various things you might have forgotten such as birthdays, people you haven't called back after you declined their calls and even favourite contacts who haven't been in touch for three months.

Automation lets you choose settings based on location, so you can pick a preferred Wi-Fi network when you arrive home, a sound profile to use, and which app to open when you plug in some headphones. All of this is done without calling back to a server, so it could appeal to those who don't like the privacy implications of using a more intrusive service such as Google Now.

There are quite a few preloaded apps including LG Health, a file manager, LG's own music and gallery apps, Smart cleaning – for optimizing memory use, LG Mobile Switch and SmartThinQ, LG's app for controlling your ThinQ-compatible appliances.



Thanks to the tall screen you can run two apps on screen together. To do this, you bring up the app switcher and press the screen-divide symbol to enable the multi-window mode.

## Verdict

The G7 is cheaper than most flagships, but the OnePlus 6 is even more affordable still. In terms of features, the G7's highlights include the very bright screen, water-resistance, wireless charging and surprisingly good sound from the mono speaker. Cameras are solid, if unremarkable, and there's uncommon wide-angle lens for better landscape photography.

Ultimately, the G7 ThinQ is a perfectly good phone at a sensible price and is a good choice if the OnePlus

6's lack of water-proofing and wireless charging are deal-breakers for you. **Jim Martin**

## Specifications

- 6.1in (3,120x1,440, 564ppi) IPS LCD capacitive touchscreen display
- Android 8.0 Oreo
- Qualcomm SDM845 Snapdragon 845 processor
- Octa-core (4x 2.8GHz Kryo 385 Gold and 4x 1.7GHz Kryo 385 Silver) CPU
- Adreno 630 GPU
- 4/6GB RAM
- 64/128GB storage, microSD up to 400GB
- Fingerprint scanner
- Dual rear-facing cameras: 16Mp, (f/1.6), OIS, laser and PDAF; 16Mp, (f/1.9), laser and phase detection autofocus, LED flash
- 8Mp front-facing camera: 1080p
- 802.11ac Wi-Fi
- Bluetooth 5.0
- A-GPS, GLONASS, BDS
- USB 3.1 Type-C
- 153.2x71.9x7.9mm
- 162g



# Samsung Galaxy A8

Price: £449 inc VAT from [fave.co/2xzzyuDC](https://fave.co/2xzzyuDC) ★★★★★☆

The Galaxy A range of devices has come a long way in a relatively short space of time and now effectively offers a cheaper and slightly lower spec version of the flagship S range, while keeping some of the key features and design traits. Here we look at the A8.

## Design

Samsung ditched plastic in favour for a combination of glass and metal on the A range back in 2016 and that

## REVIEW

hasn't changed here. The Galaxy A8 is really not far off the S8 in terms of look and feel. In fact, it's easy to confuse the A8 with its premium brother, though there are a few small differences. The display, for example, doesn't have the curved dual edge, but does have small bezels, so most of the front is taken up by the screen. It has a 75 percent screen-to-body ration compared to the S8's 83 percent.

This means that, like the S8, the home button has been removed and the fingerprint scanner is now located on the rear of the phone – it's situated underneath the camera.

A small difference compared to the S8/S9 is that there's no dedicated Bixby button on the side. We're not particularly fussed about this, though.

It is a little thicker than both the S8 and last year's A7 at 8.4mm, though it doesn't feel chunky at all. It's not the lightest phone at 172g, but again this isn't a handset that gives a sense of being overly heavy.

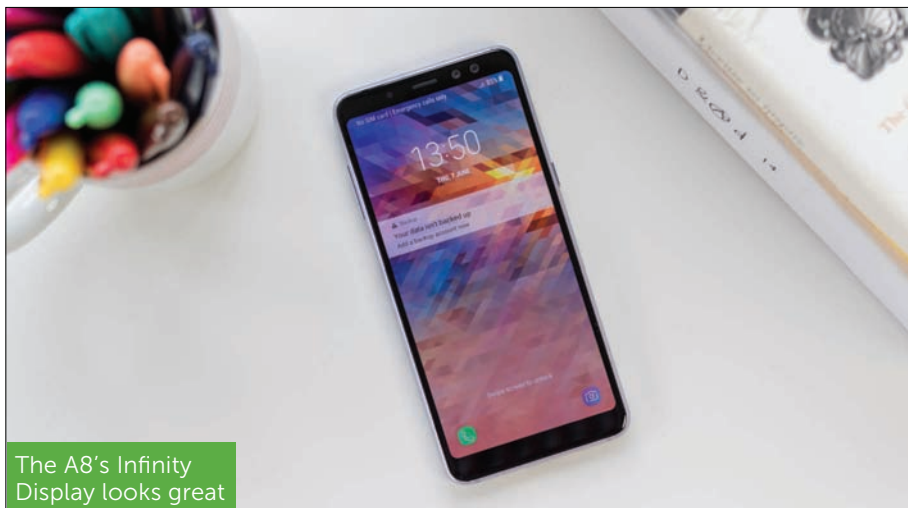
Samsung continues to do a good job by offering IP68 waterproofing (up to 1.5m of fresh water for up to 30 minutes) and a headphone jack. There's no wireless charging despite the glass rear cover that, like most, is a little slippery.

The A8 will be available in black, gold and orchid grey colours.

## Display

The display is the main upgrade since the Galaxy A7 because Samsung has, for the first time, brought the Infinity Display to the A range. The A8 has an on-trend 5.6in 18:9 screen. It looks great and





somewhat helps justify the inflated price. It might not have the dual edge feature of the S8, but Samsung has to keep something for the flagship. Also, the resolution is slightly lower at 2,220x1,080, though that's still an impressive 441ppi. It's also brighter than average at a maximum of 355cd/m<sup>2</sup>.

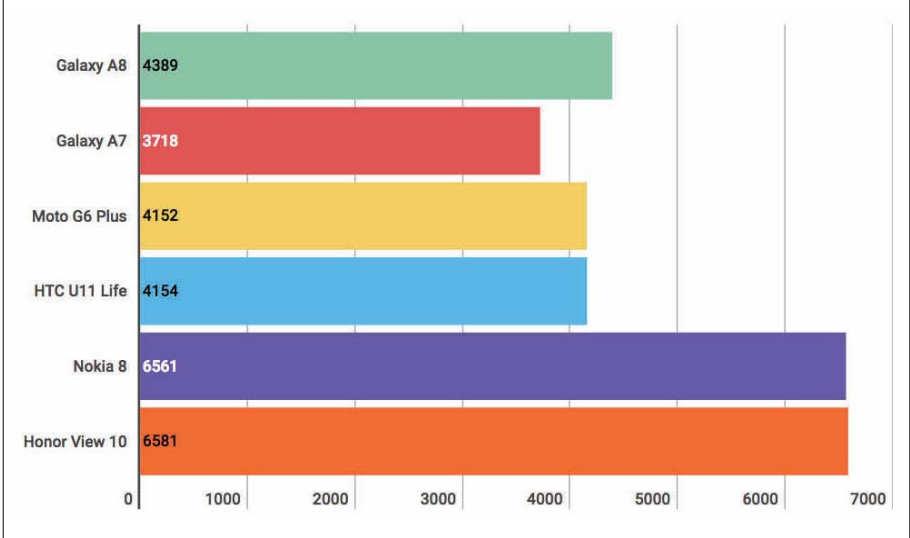
You don't get the edge panel, but you do get attractive rounded corners and the always-on feature. So the A8 displays some information (there are a few different layouts to choose from) even when the phone is locked – without using much power.

### **Processor, memory and storage**

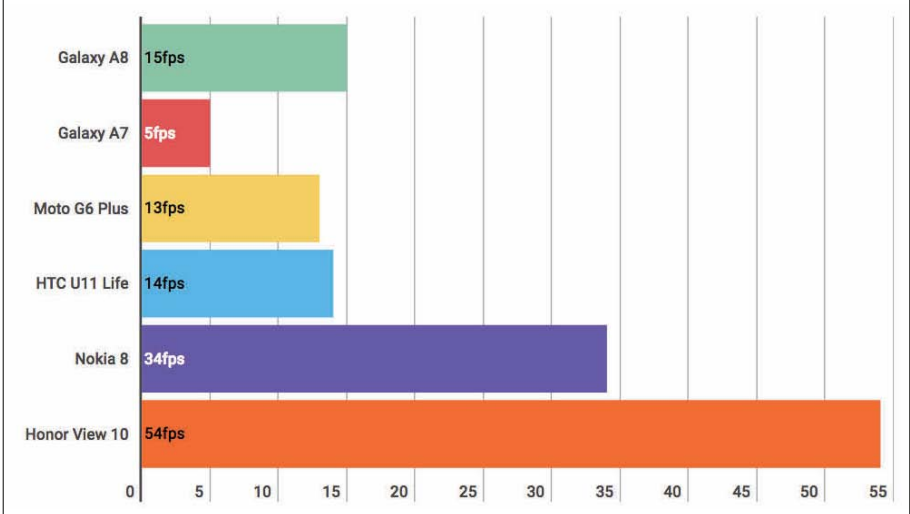
Inside the Galaxy A8 is Samsung's own Exynos 7885 processor. It's a small upgrade on the 7880 found in the A7, still with eight cores but at higher clock speeds. It also has the Mali-G71 GPU found in the Galaxy S8.

REVIEW

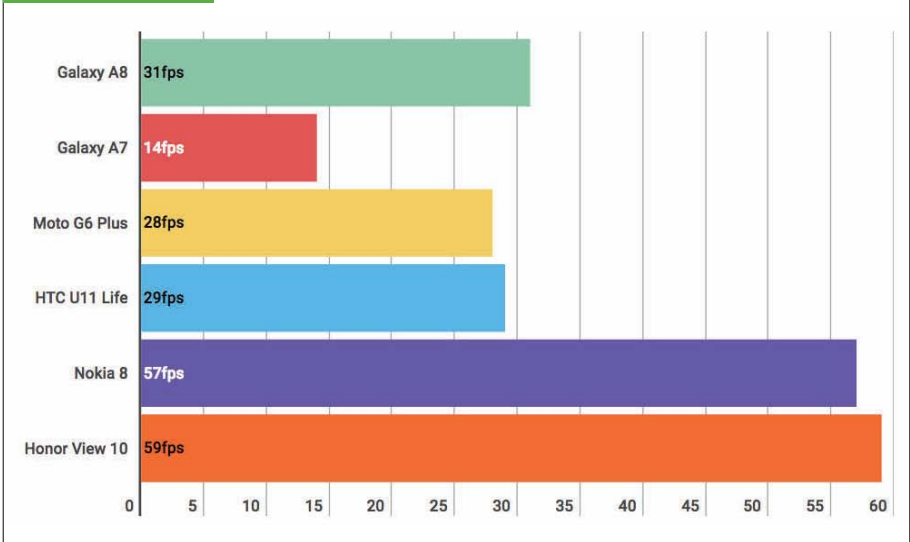
Geekbench 4



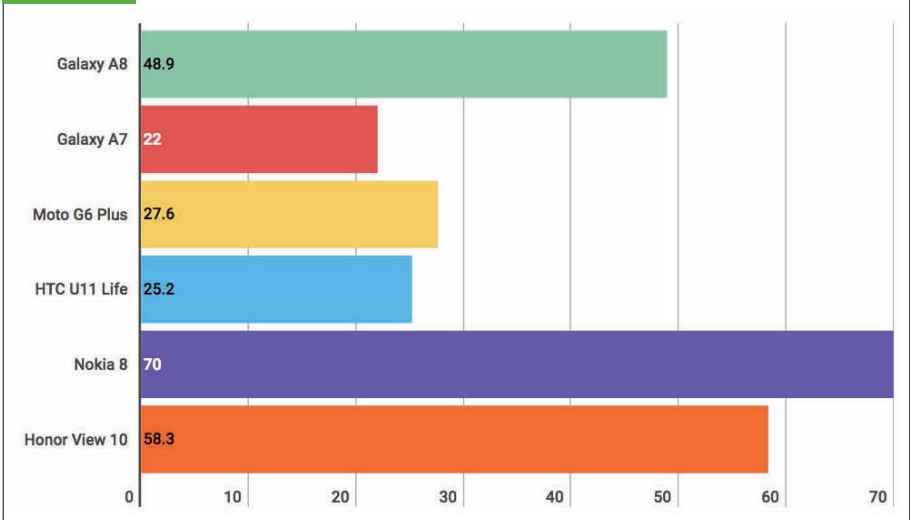
GFXBench Manhattan



GFXBench T-Rex



JetStream



As previously, there's 32GB of storage and a microSD card slot for adding up to 256GB more. However, there's now 4GB of RAM instead of 3GB which is welcome.

In our benchmarks, the Galaxy A8 doesn't perform as well as we expected. Rather than putting up numbers similar to phones of a similar price, such as the Nokia 8 and Honor View 10, it's around the same level as devices a lot cheaper. That said, this is a case of the phone performing differently in benchmarks to real life. We've found it suitably responsive and smooth during our time with it. The main improvement from the A7 is in the graphics department.

### **Connectivity and audio**

The Galaxy A8 has the usual array of features, including Bluetooth 5.0, dual-band 11ac Wi-Fi, GPS, NFC and offers Cat 11 LTE.

As you'd expect, the phone has USB-C but retains the headphone port, which is good to see. Oddly, the single speaker is placed on the side of the phone above the power button. It doesn't make a huge difference compared to the normal position next to the USB port. The speaker itself sounds pretty average.

### **Cameras**

When it comes to photography, the A8 is doing things backwards to most other phones. Instead of having dual rear cameras and a single at the front it has the reverse, so on the front are 16- and 8Mp cameras, both f/1.9. One of the main reasons for this is so that you can use Live Focus. This gives you a bokeh effect



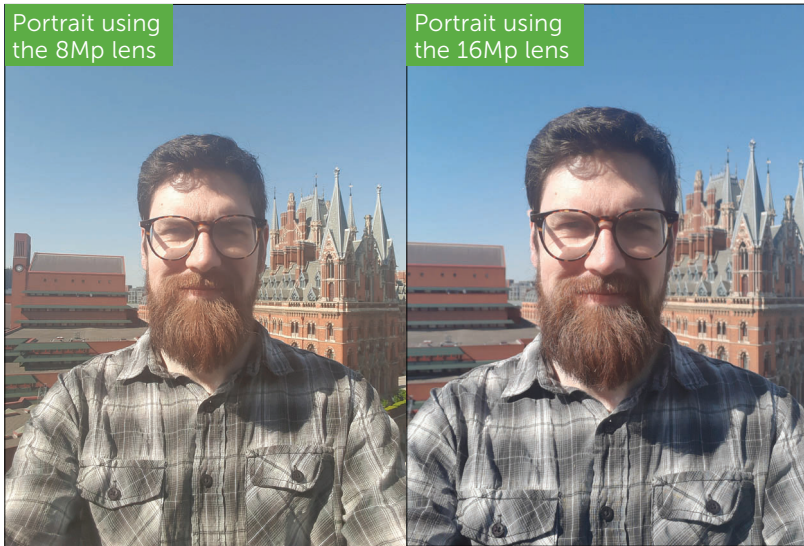
Landscape shot

blurring the background and you can adjust the amount of blur afterwards. It works pretty well and is unusual to find on a front camera. You can also switch between them to ‘take the type of selfie you want’ – either blurred background or not, but really they are pretty similar in terms of how much you can fit in the frame (76- and 85 degrees), so you’ll probably stick with the 16Mp option for the better detail.



Low light shot

REVIEW



Sadly they don't offer autofocus and are limited to 1080p video recording, but you do get Auto HDR. You can also play with the beauty mode if you care and there's a 'wefie' option to fit more people in – it's essentially a panorama with the front cameras.

At the back is a lone 16Mp with a Galaxy S8 matching f/1.7 aperture. It offers phase detection autofocus and a single LED flash. We'd like to see optical image stabilization and video recording higher than 1080p at 30fps, but, again, Samsung needs to separate the flagship level.

Overall, we're impressed with the cameras on offer here. The rear camera offers detailed and colourful shots and also works well in low light. It's at the front where the A8 stands out with lots of features you don't find elsewhere for selfie lovers.

## Battery life

The A8 has a 3,000mAh battery, which is average for smartphones these days. In our Geekbench 4 battery test, the phone managed a disappointing four hours, 30 minutes, with an efficiency score of 2700. For context, the Moto G6 was able to go twice as long and scored 3516. Like the performance benchmarks, this is something of an anomaly as we've not had any issues with the A8 lasting through a day of normal usage.

When it comes to charging, the supplied USB-C charger offers Fast Charging. Starting from zero, and you can get 39 percent from a 30-minute charge.

## Software

The A8 doesn't ship with the latest version of Android but comes with 7.1 Nougat, which is a shame. The interface is simple and clean, and while there's no dedicated Bixby button on the side as there is on the S8 and S9, it's only a swipe away from the main home screen – this is instead of Google Assistant. You can still use Google Assistant via the app and we still think it's better than Bixby, but there's nothing stopping you from using both.

Overall, it's a very similar experience to the Galaxy S range as you get pre-installed apps from Samsung, Microsoft and Google. You also get features such as Multi-Window and Samsung Pay, and it's the first A phone to support the Gear VR headset.

## Verdict

The Galaxy A8 is by far the best A-range device to date and effectively the S8 mini we always wanted.

The S9 is here now, but that's not too different so it's a similar situation. If you're looking for that Samsung style in a cheaper form, then the A8 is the right choice for you. There are, however, some excellent phones in the mid-range that offer a similar experience for less money such as the Honor 10. **Chris Martin**

## Specifications

- 5.6in (2,220x1,080, 441ppi) Super AMOLED capacitive touchscreen
- Android 7.1.1 (Nougat)
- Exynos 7885 Octa processor
- Octa-core (2x 2.2GHz Cortex-A73, 6x 1.6GHz Cortex-A53) CPU
- Mali-G71 GPU
- 4GB RAM
- 32/64GB storage, microSD up to 256GB
- Fingerprint scanner
- Rear-facing camera: (f/1.7, 1/2.8in, 1.12µm), phase detection autofocus, LED flash
- Dual front-facing cameras: 16Mp (f/1.9, 1/3.1in, 1.0µm); 8Mp (f/1.9, 1/4in, 1.12µm), 1080p
- 802.11ac Wi-Fi
- Bluetooth 5.0
- A-GPS, GLONASS, BDS
- USB 2.0 Type-C 1.0
- 149.2x70.6x8.4mm
- 172g





# Honor 10

Price: £399 inc VAT from [fave.co/2J6vrnF](https://fave.co/2J6vrnF) ★★★★★☆

**H**onor has been doing a pretty good job of stepping out of Huawei's shadow, usually helped by the explosively shiny blue it clads its phones in. The Honor 10 is no different and feels every bit an Honor device despite having its parent company's name stamped on the back.

The phone comes with all the 2018 bells and whistles (Android Oreo, notch, face unlock), high end specs and a price to make OnePlus blush. The Honor 10 could well turn out to be the smartphone deal of

REVIEW

the year – as it is certainly the best mid-range phone on offer right now.

**Design**

Despite its similarities to Huawei phones, the Honor 10 is pretty unique in look. Also shipping in a grey version, our review unit is in attractive Phantom Blue, a gradient of blue and purple that is actually quite different to the Twilight Huawei P20 Pro of the same shifting shades. We might even prefer the Honor.

The multilayered glass really does shimmer, with vertical lines refracting light at every angle. It’s awesome if you like the colours and will get people asking you what phone you have. Honor’s blue phones have always stood out, but this is next level.

Around the front is a familiar 2018 story with a notch at the top of a 19:9 display. It’s not the end of

The multilayered glass used on the rear of the Honor 10 shimmers



the world, and you can black out the status bar and 'hide' it if you want, but that does seem defeatist to us – though Honor joins Huawei and LG in offering the option. The phone looks very, very similar from the front to the Huawei P20 Lite rather than the regular P20 or P20 Pro.

This means the display of the 10 is taller than on the Honor 9 and has an under-glass fingerprint scanner inside the black chin on the front of the phone. We aren't talking actually in the display, but instead an area subtly marked with a dotted line on the chin where a button sensor might normally be.

It's a cool touch and the first time we've seen it, but the functionality is less responsive than having an actual button as you have to press down harder. It also makes it harder to locate than an actual button would.

There are rear dual cameras, one round the front, USB-C, a headphone jack, bottom firing speaker and a lesser-spotted IR blaster. Not a bad list when most phones double the price this year don't have all that.

The volume rocker and power key sit on the right in what is a svelte, compact design. You might need to shrink the keyboard to do so, but we found it can be used one hand most of the time. Honor also puts a cheap silicone case in the box to help you grip on and keep the inevitable fingerprints at bay.

Just be aware that it isn't waterproof – a small reminder of the corners cut to achieve the price.

## Display

The 19:9, 5.84in IPS LCD display has a resolution of 2,280x1,080. This equates to a vibrant 432 pixels

## REVIEW



The display is 19:9 because of the extra room the notch affords

per inch and it looks great. An LCD rather than an OLED, it struggles in direct sunlight but in every other situation looks very good.

Viewing angles are noticeably excellent and while you aren't spoiled with the deep blacks of an OLED display, it's among the best LCDs you'll find – though it won't go as amazingly bright as the one on the LG G7 ThinQ (see [page 15](#)).

The display is 19:9 because of the extra room the notch affords. It's neither here nor there to us about the notch, but we do find it annoying that you lose notification icons and information more often than on a normal screen.

You may also run into scaling issues where the notch accidentally covers up an icon or piece of information. But the software is clever enough that

if you turn the phone to watch video in landscape, it hides the notch and displays the video without cutting anything off.

But the notch does cause some issues. The operator name disappears if you have too many notifications, and sometimes icons are obscured by the right edge of the notch. It is only a small thing, but it's a fault, and it's annoying.

The chin also contains the fingerprint sensor, which is shown with a dotted outline but is under the glass. It's a cool touch, but actually makes the feature harder to use. It's more difficult to locate with no button to feel for and it's less responsive than we'd like as you have to push down harder.

It looks cool, but it doesn't work very well. Thankfully, face unlock is incredibly fast and easy to set up, and we found this method preferable.

## **Processor, memory and storage**

The Honor 10 bears a passing resemblance to the cheaper Huawei P20 Lite, but its specifications are very much similarly high-end as on the flagship P20. In fact, almost identical.

This means the Honor 10 has the top of the line Huawei Kirin 970 processor found in the P20 Pro and Mate 10 Pro. The Mali-G72 GPU is the same as in the P20 line also, along with 4GB and 128GB storage in the UK (other regions will get other configurations with more of both).

Its notable that this storage, though generous, is not expandable. The Honor 9 was, but the change to a very high 128GB is a good trade-off – unless you carry

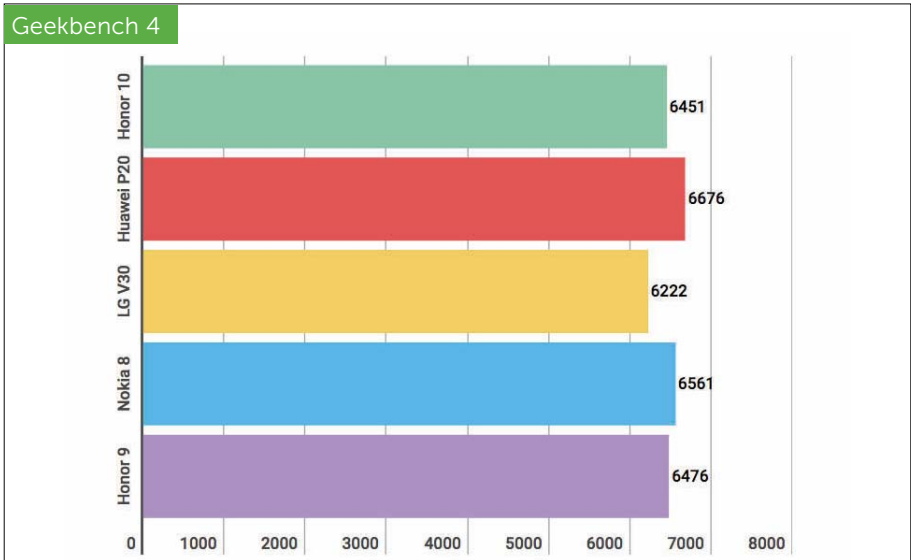
REVIEW

all your music around with you, you won't run out of space for a long time.

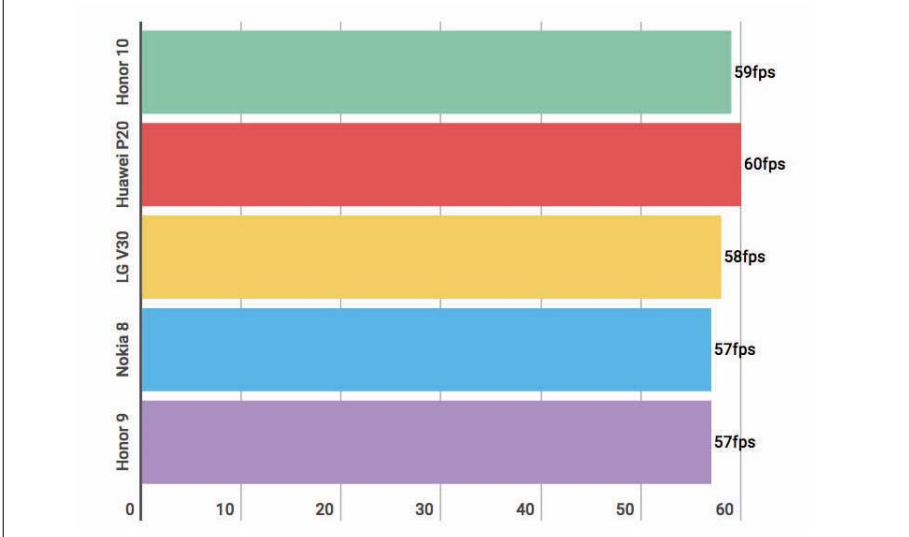
This means the Honor 10 screams along with no issues. We benchmarked its performance against phones of the same price and specifications, with the results below. We compare it to the Huawei P20 for obvious reasons, but also to the LG V30 as another example of a more expensive phone, the Nokia 8 because it currently retails for the same £399, and the previous generation Honor 9.

The Honor 10 has higher scores than the V30 and Nokia 8 in some of the GFXBench graphics tests as those phones have higher resolution displays. Otherwise, the Honor 10 is evidently a very fast phone.

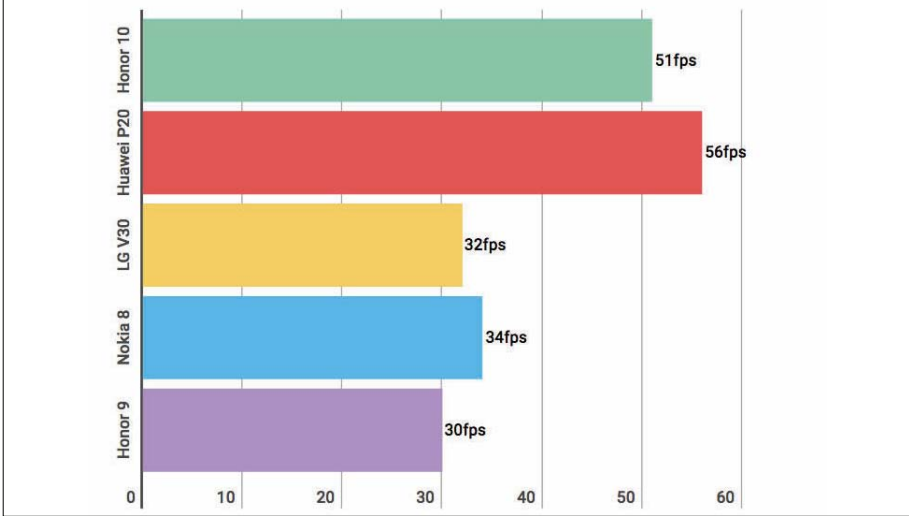
It scores very similarly to the P20 phones and proves Huawei charges a premium price on its



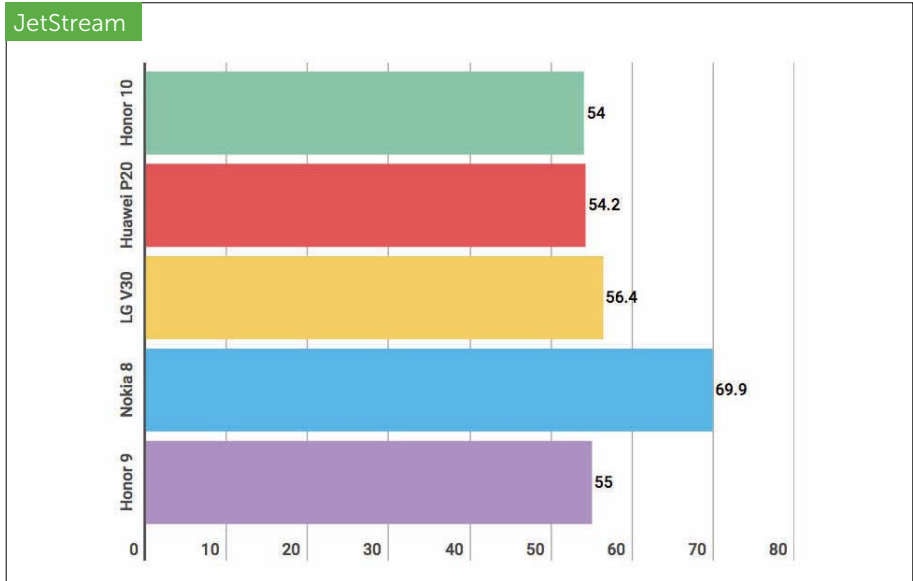
GFXBench T-Rex



GFXBench Manhattan



REVIEW



products when they can sell on the Honor 10 for at least £200 less.

All you need to know is that for the money, this is a ridiculously capable smartphone. Buying it now will likely have you set for at least the next three years before any noticeable degradation in performance.

**Connectivity and audio**

Bluetooth support remains at 4.2 rather than 5.0, and drop outs were fairly frequent when paired with wireless headphones, which is a shame considering the aptX codec here means the quality is actually quite good when it works. You do have a headphone jack here, but no headphones in the box. This is a dual SIM smartphone by default too,



and the software allows for granular control of the settings if you want calls and texts on one SIM and data on another, for example.

## Cameras

The dual cameras of the Honor 10 are very good for a mid-range phone – though as we have established by now, this is a flagship that's simply cheaper than most. The main colour sensor is 16Mp f/1.8 coupled with a 24Mp monochrome sensor that allows better dynamic range and depth sensing for portrait mode and 2x zoom.

Stills look great, and while this isn't the best camera on a smartphone, Honor has done some good things. More gimmicky is the AI feature in the main camera – and it's cringeworthy that it actually says 'AI camera' on the back of the phone.

However, when on, the feature reads your scene or subject and boosts colour and detail where it thinks the sensors were lacking, using post processing algorithms. For the most part, it actually helps a lot, and will particularly please those who want to post straight to social media.

What it does mean is the photos are then less true to life than they were, but you can flick between the two versions to see which you prefer – just remember to shoot in AI mode in the first place. You can toggle it on and off in the improved and mercifully simpler camera app (compared to previous versions of EMUI).

These features are similar, but not identical, to those AI smarts found on the Huawei P20. The P20 integrates it better, and though the Honor 10 has

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Landscape shot

the same night mode option, it doesn't perform as well as on the Huawei – so maybe that extra £200 gets you what we do consider an amazing feature (the P20 has a better aperture and OIS where it counts). Despite the improvements, the camera is where the phone often lags a touch, which is odd considering the decent specs on offer.

Portrait mode is merely okay here – Honor still adds



Low light shot

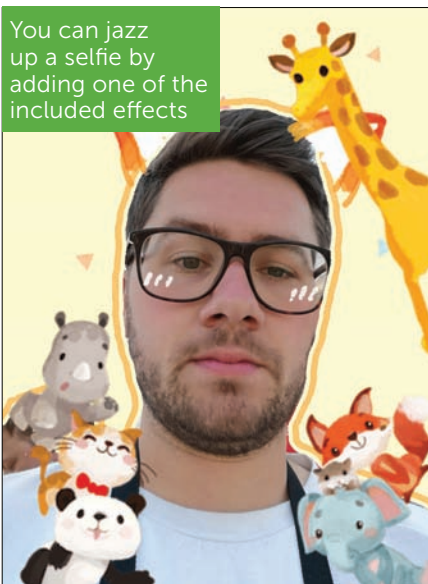
beauty mode to it and the selfie version which is maddening, and even when turned off we feel there is a smoothing and whitening of faces that isn't to our tastes. Though all these bokeh effects are subjective as to preference, we can still say with confidence that this is not as good as on the Google Pixel 2 or iPhone X.

That selfie camera is a 24Mp f/2.0 sensor is good but nothing special, and you can't do bokeh despite the 'portrait' mode in the app – all you can do is fiddle with the beauty settings, which never look flattering.

All cameras can also do portrait lighting, nicked straight off Apple with no shame. It's pretty bad – the filters are more fun. Better are the video capabilities, with the Honor 10 able to shoot in 1080p at 60fps or 4K at 30fps. This is becoming standard, but again is good to see on a mid-range device. Electronic stabilization at the default resolution setting helps keep the jitters to a minimum.

## Battery life

The real-world battery life of the Honor 10 is one of its downsides. We expected more out of the phone, as in 2018 there aren't many high-spec phones that get



us worried we might run out of power before the end of the day, but the Honor 10 is one of them.

It has a 3,400mAh battery – the same as, you guessed it, the Huawei P20 – and like that phone we were skirting with 20 percent left warnings earlier in the day than we'd have liked. While we didn't get caught short with the Honor 10, it again shows that as the specs are better than the price suggests and therefore work the phone hard, it doesn't excel in battery life where other cheaper phones do.

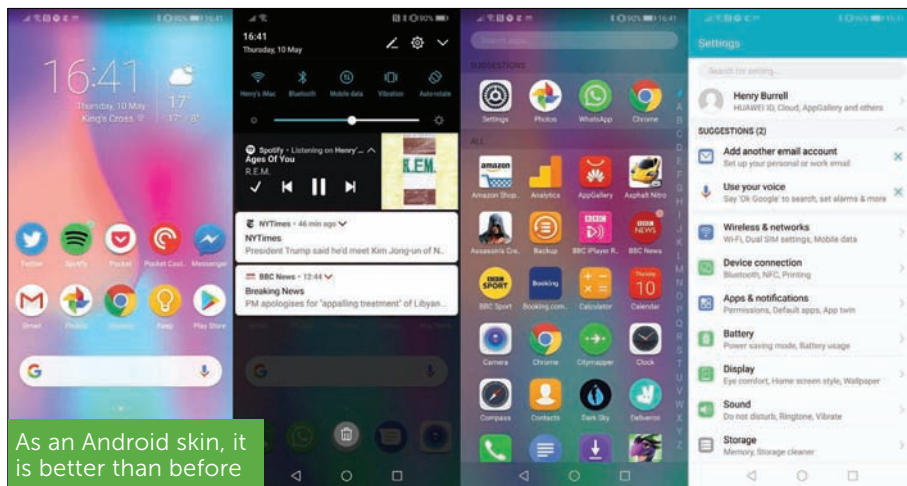
In the Geekbench 4 battery test with the phone brightness set to 120cd/m<sup>2</sup>, the phone scored 2340, lasting for only three hours, 54 minutes. The P20 lasted five hours, 17 minutes with the same 3,400mAh battery, so something is amiss with the Honor 10's battery stamina, and that's a real shame.

Huawei's Super Charge has carried over to the Honor 10, and it's amazingly fast – the fastest charger we have ever seen on a phone bar none. From dead, it charged the Honor 10 to 65 percent in 30 minutes while turned off, which is nuts. It just about makes up for the subpar battery life.

## Software

As with Huawei phones, whether or not you buy the Honor 10 may depend if you like the look of EMUI. Thankfully as an Android skin it is a lot less horrible than it once was, but it's still change for change sake in some cases with menus, notification panels and icons very different from stock.

In fact, it's a little like iOS in how it defaults to a grid of home screen icons, but this is Android



– change it to the app drawer. The Honor 10 has been very slick and smooth thanks to the Kirin 970 processor working its magic.

We do like how you can hide the notch, and it oddly makes the phone feel quite a bit different. But our only complaints lie in the changes EMUI makes when it doesn't need to – particularly to Oreo.

Oreo in stock Android handles notifications gracefully and easily, but EMUI contrives to make it all look and feel more like iOS. We wish it wouldn't, but it's more forgivable on this £399 Honor phone than on a Huawei phone that hits £800.

## Verdict

Even though battery life is a little underwhelming, it's a minor quibble with what is an exceptionally good phone for the price. The display, cameras and build quality are verging on those of a phone twice the

price and the performance is the best we've seen on an Honor phone.

The software is the best EMUI has ever offered, and the notch is not a big deal when all is said and done. The 128GB storage as standard is also a major plus, and dual SIM is also welcome. Add to that a headphone jack, and the Honor 10 could well be the best featured mid-range phone ever – it's certainly the best you can buy in 2018. **Henry Burrell**

## Specifications

- 5.84in (2,280x1,080, 432ppi) IPS LCD capacitive touchscreen
- Android 8.1 (Oreo)
- Hisilicon Kirin 970 processor
- Octa-core (4x 2.4GHz Cortex-A73, 4x 1.8GHz Cortex-A53) CPU
- Mali-G72 MP12 GPU
- 4/6GB RAM
- 64/128GB storage, microSD up to 256GB
- Fingerprint scanner
- Dual rear-facing cameras: 16Mp (f/1.8) and 24Mp B/W, phase detection autofocus, LED flash
- Front-facing camera: 24Mp, f/2.0, 1080p
- 802.11ac Wi-Fi
- Bluetooth 4.2
- A-GPS, GLONASS, BDS
- USB 2.0 Type-C 1.0
- 149.6x71.2x7.7mm
- 153g



# Onda V10 Pro

Price: £144 inc VAT from [fave.co/2kDVoQV](https://fave.co/2kDVoQV) ★★★★★☆

To get the best tablet you're really looking at £600 or thereabouts. This sub-£150 tablet is no match for those devices, but it does have a lot to offer those with smaller budgets – particularly in terms of entertainment.

The Onda V10 Pro ticks several boxes if movie watching is your thing. There's a large 10.1in touchscreen with a 2K resolution of 2,560x1,600 pixels that results in a crystal clear pixel density of 300ppi – actually higher than the new iPad's 264ppi 'Retina'

display, but a 16:10 aspect ratio that's less well suited to movies than a 16:9 would have been.

There's also a Micro-HDMI port for hooking it up to a TV, and integrated Cast support. And plenty of storage, too, with 64GB as standard and an additional 128GB possible via microSD. The PowerVR graphics didn't give the best performance in our gaming benchmarks, but for watching films (or playing casual games) they're quite capable. Sounds good so far, so there's got to be a catch, right?

## Availability

The Onda V10 Pro is not available from the likes of Amazon; instead you'll need to import it from GearBest or a similar Chinese retailer.

GearBest supplied our review sample, and offers free shipping to the UK. Do note, though, that on arrival in the UK you'll be liable for import duty. This is charged at 20 percent of the value on the shipping paperwork plus an admin fee of around £11, which takes this tablet's £144.58 price tag up to around £185. That's still very good value nonetheless.

## Design

There's nothing particularly exciting about the Onda's build, but neither is there anything that makes our eyes well up. The physical home button with integrated fingerprint scanner seems to be in an odd location, but at least it has one – in itself rather impressive at this price. We'd expect to use a tablet of this size in landscape mode, especially when watching movies, but in this format the button is on the left side.



If we were to assume that the Onda should be held in portrait mode, the magnetic docking keyboard connector would then appear on the right edge. Not that this is a major problem, since the keyboard is sold separately and we were not supplied one for review. It doesn't seem to be available from GearBest either.

There is a load of ports to be found around the edges, including both Micro-USB and a 10W DC input for charging (you can use either). There's also a 3.5mm headphone jack, a mono speaker, mic, Micro-HDMI and a microSD slot (up to 128GB is supported). You'll also find a 2Mp selfie camera for video chat, and an 8Mp camera at the rear.

The speaker is reasonably loud but fires audio only from one side of the tablet, which isn't ideal for multimedia use. It can also be rather tinny at full volume. If you hook it up to a TV you'll use the TV's



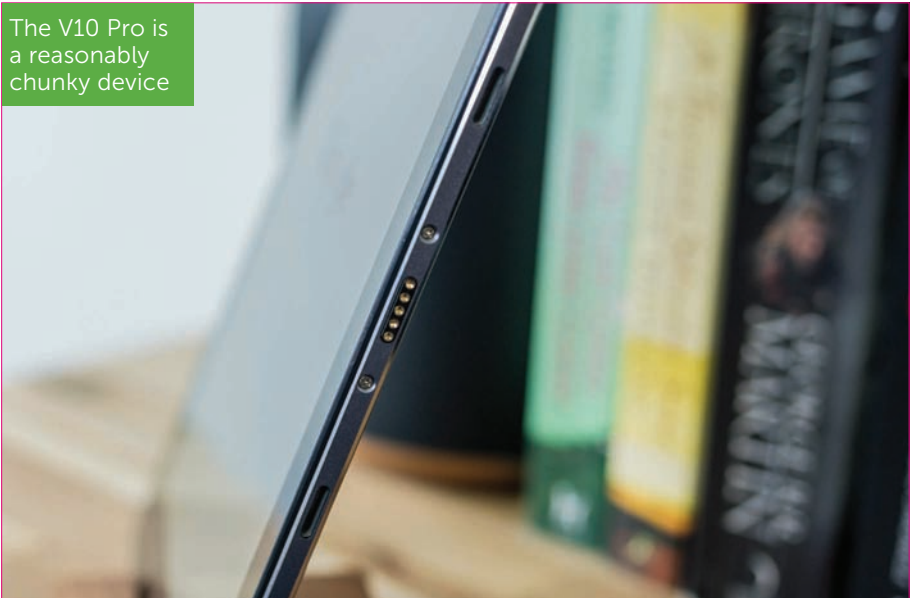
REVIEW

own speakers for audio. You can also connect to a Bluetooth speaker with support for Bluetooth 4.0, or plug in a pair of earphones. The volume rocker and power button are on the top edge in landscape mode.

The Onda V10 Pro has a nice screen, a 10.1in IPS panel with OGS technology which uses fewer layers than standard display tech. It's bright, colours are realistic and viewing angles are good, but there is a good inch-thick bezel running all around the outside of the screen and it does seem to attract fingerprints.

The tablet doesn't use 2.5D curved glass like that which is seen on many phones these days, which means you can feel the plastic edge as you run your finger across the screen. This also creates a small crack that could conceivably collect grime, and it

The V10 Pro is a reasonably chunky device



makes for a less natural feeling transition between it and the chamfered edges of the metal rear panel.

This isn't a unibody metal design, which does give away the price tag somewhat. An 8Mp camera is nestled inside an inch-thick grey plastic strip, which gently curves back and prevents the camera lying flush. It's not a terrible design, but neither will it pass for a premium device.

Measuring 251x165x9mm and weighing 576g, the Onda V10 Pro is reasonably chunky.

## Performance

This is a budget Android tablet with low-end hardware inside, which doesn't make for impressive results in our benchmarks. However, in real-world use it will be quite capable for multimedia use and casual gaming, browsing the web, reading emails and enjoying social media. The V10 Pro runs a 2GHz MediaTek MTK8173 quad-core processor that combines two A72 and two A53 cores. This is paired with the 700MHz PowerVR GX6250 GPU, 4GB of memory and 64GB of storage as standard.

Performance in our benchmarks was no better than that of a budget- to mid-range phone, scooping 2787 points in Geekbench 4 multi-core, 17fps in GFXBench T-Rex, and 50 points in JetStream. In fact in processing performance that's about level with the Nokia 5, though the smartphone fares better on graphics (likely due to its lower-resolution screen).

There's a 6,600mAh lithium-polymer battery inside that should last around eight hours, at which point you can charge it via a DC input or Micro-USB.

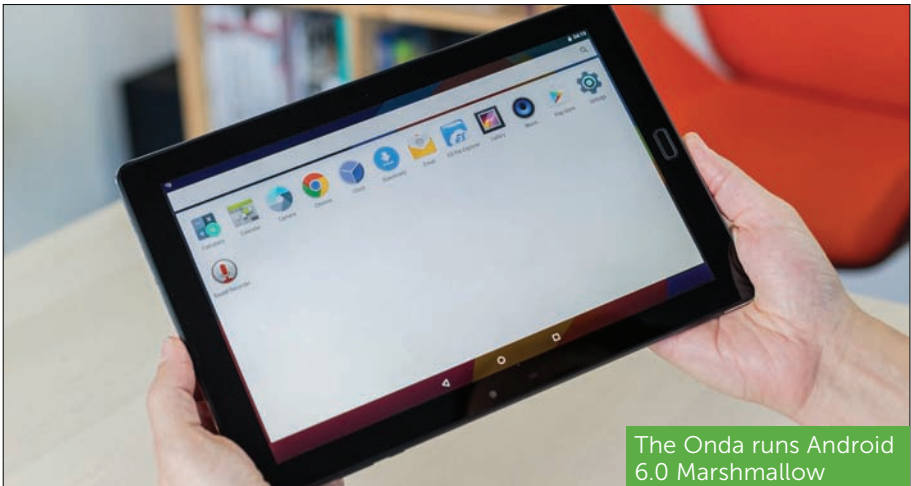
REVIEW

**Software**

A drawback of this tablet is that it runs Android 6.0 Marshmallow with no update in sight. This has since been succeeded by Android Nougat and Oreo, with Android P due later in the summer.

It's a very plain implementation of Marshmallow, and though Google services are supported very few are pre-installed. But some will appreciate the small number of pre-installed apps, since it leaves more space for what they do want.

Something we did find concerning was the frequent crashing of the launcher app, though it seemed to instantly reload itself following the crash and you could easily install another launcher app. In the marketing material for this tablet it refers to a Phoenix dual-OS, enabling the tablet to be optimized for work and play. This was not present on our review sample.



The Onda runs Android 6.0 Marshmallow

## Verdict

The Onda V10 Pro is not a fast performer, but for a budget tablet that retails for under £150 it has some real draws for entertainment use, including a large, high-resolution screen. If your needs are not great, you could save yourself several hundred pounds on a top-end tablet and easily get by with the V10 Pro. **Marie Black**

## Specifications

- 10.1in (2,560x1,600, 300ppi) Sharp OGS IPS display
- Android 6.0 Marshmallow
- 2GHz MediaTek MTK8173 quad-core (2x A72 + 2x A53) processor
- 700MHz PowerVR GX6250 GPU
- 4GB RAM
- 64GB storage, microSD support up to 128GB
- Fingerprint scanner
- Dual-band 802.11ac Wi-Fi
- Bluetooth 4.0
- GPS
- Micro-HDMI
- Micro-USB
- 10W DC input
- 3.5mm headphone jack
- 8Mp f/2.0 rear camera, 1080p video
- 2Mp selfie camera
- 6,600mAh lithium-polymer battery
- 251x165x9mm
- 576g
- Supports magnetic docking keyboard (not included)



# Best budget smartphones 2018

CHRIS MARTIN rounds up our favourite handsets

Costing over £1,000, flagship phones are more expensive than ever, but as these get better so too do more affordable models. Indeed, it's now possible to buy a handset for under £200, and still get a device capable of everything you throw at it.

## Should you buy a locked phone?

You'll quickly find that some of the best deals on cheap phones are sold via mobile operators. What you

need to look out for is whether these phones are sold locked to that operator's network.

This is the case with the EE Hawk ([page 96](#)), but if you don't want to become a EE customer you should look elsewhere on the list for a non-network-branded handset, such as the Moto G5.

## What about a Chinese phone?

An alternative is to buy a Chinese phone. You might not have heard of the brands, and they won't be available on the UK High Street (save for the likes of Huawei and ZTE), but they are well-known for offering amazing specifications for the money and undercutting their European rivals. In most cases you'll get a phone with a mid-range specification at a budget price.

## What will you get for your money?

If you're looking for an affordable phone, you have to accept the fact that the manufacturer is going to cut some corners to achieve that low price and you aren't going to get the same speed, features, and display quality as you might with a phone costing two, three, or even four times the price.

It used to be the case that budget phones were instantly recognizable by their low-resolution displays, meagre storage, and chunky, plastic bodies, but things are improving in this area all the time. These days, for £200 or less it's possible to buy a phone with a Full HD display and a sub 8mm-thick metal body.

Most will support 4G connectivity, but not all will support NFC (Chinese phones will often feature

HotKnot which is a similar technology, but not the same as NFC.)

## 1. Honor 9 Lite

**£199 from [fave.co/2t0pN2H](https://fave.co/2t0pN2H)** ★★★★★

There's no let up in the smartphone market and Honor has yet another new handset to tempt those looking for a stylish phone at an affordable price. Over the following pages we take a close look at the 9 Lite.

Honor's range can get a little confusing, especially when you include Huawei, the firm's parent company, devices into the mix.

So the Honor 9 Lite sounds like a cut-down version of the excellent Honor 9, and while it is to some extent, it's also a sort of mini or light edition of the Honor View 10 because of its 18:9 screen.

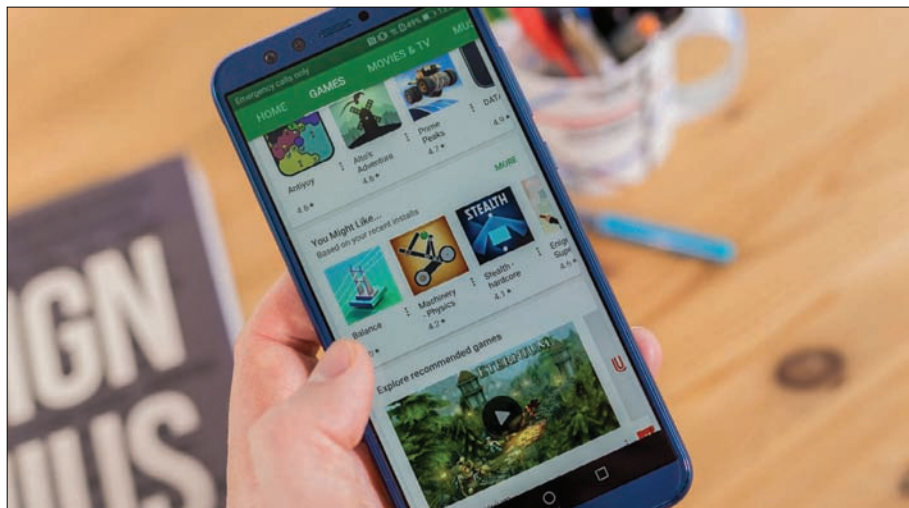
However, the device is closest – almost identical in fact – to the Huawei P Smart, which has just launched on Vodafone. Honor's version, though, will be a great way of picking up the same phone on a contract-free basis.

### Design

There's no design overhaul when it comes to the Honor 9 Lite. It looks like the Honor 9, one of our favourite mid-range phones ever, so has the now familiar combination of glass and aluminium.

The firm's current range of phones are very glossy and eye-catching thanks to the glass front and rear covers and the signature blue colour. The 'mirror-like' finish – on the blue and grey models – might





be attractive in photos, but quickly gets grubby with fingerprints and the like.

In design, it actually looks like a successor to the Honor 9 due to a move to an 18:9 screen, which is all the rage these days. That's why it also looks similar to the firm's View 10, which is bigger. That said, Honor has moved the fingerprint scanner to the back instead of squeezing it in below the display. This is pretty usual for an 18:9 smartphone and the sensor is neatly placed in the middle and away from the cameras. There is a camera bump, but it's very small and doesn't cause the phone to rock when placed on a flat surface.

The new screen means the Honor 9 Lite is a little taller than the regular model. It's marginally thicker at 7.6mm, but it's actually lighter by 6g at 149g. In the UK, the Honor 9 Lite is available in Sapphire Blue, Midnight Black and Glacier Grey.

## BUYING GUIDE

The Honor 9 Lite has a glass front and rear



Overall, the Honor 9 Lite is easily one of the nicest phones around in terms of design and build at under £200. It certainly doesn't feel like a budget device, but can it offer enough when it comes to specs and performance?

### Display

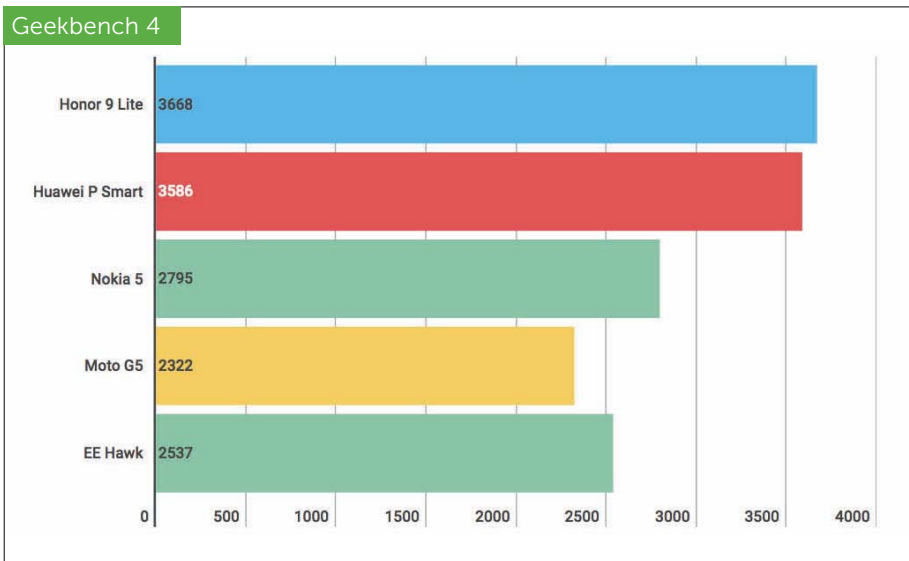
Much is similar to the regular Honor 9, but the even cheaper newbie has the same 18:9 style screen available on the View 10.

That 5.6in screen sits between the 9 and View 10 in terms of size. The resolution is slightly higher than the 9 at Full HD+ 2,160x1,080 to accommodate the 18:9 aspect ratio and retain the 428ppi pixel density. Overall, the IPS screen is very nice offering decent brightness, an 'eye comfort' mode and the softer

colours of an LCD panel. We're very impressed for a phone at under £200.

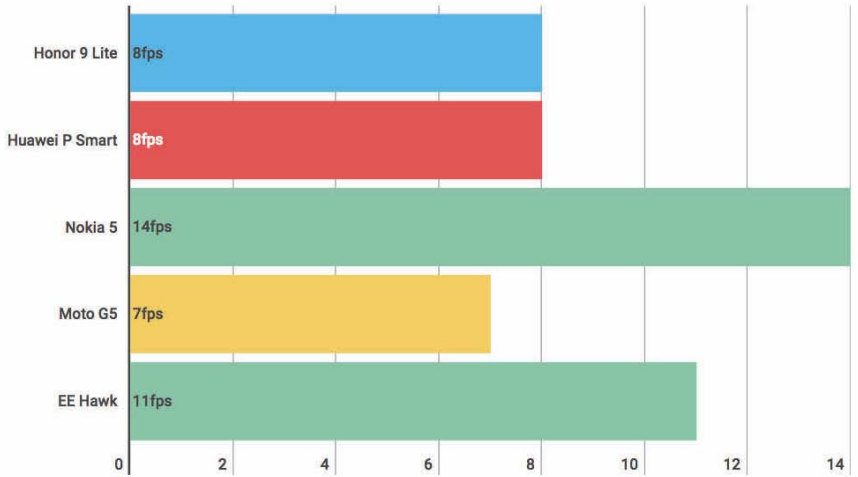
### Processor, memory and storage

It's no surprise that the Honor 9 Lite has a lower grade processor than its comrades, with a Kirin 659 – as used in the Honor 7X – instead of the flagship level 960 or 970. It's still an octa-core chip with decent speeds. Other specification cuts are expected, but getting 3GB of RAM and 32GB of storage is perfectly acceptable and enough for most people buying a phone in this range. And there's always the microSD card slot if you need to add more storage – up to 256GB more. As you can see in our benchmark results, it outpaces key rivals such as the Moto G5 in Geekbench, though the Nokia 5 offers better graphics

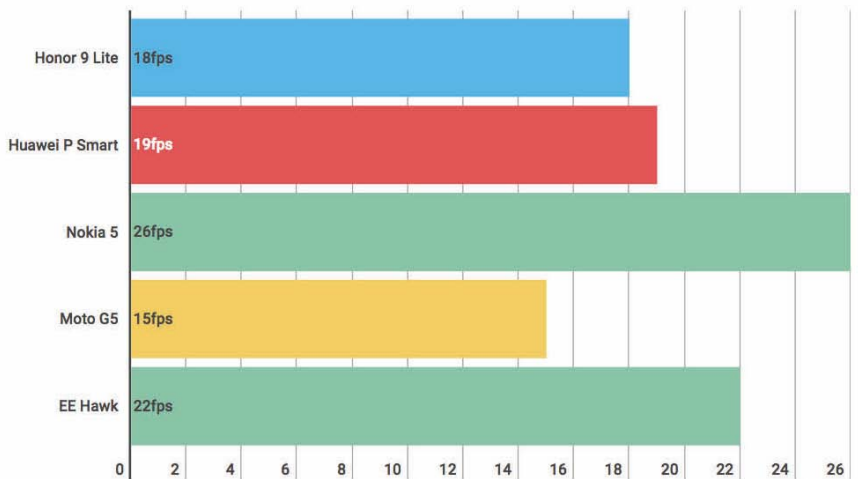


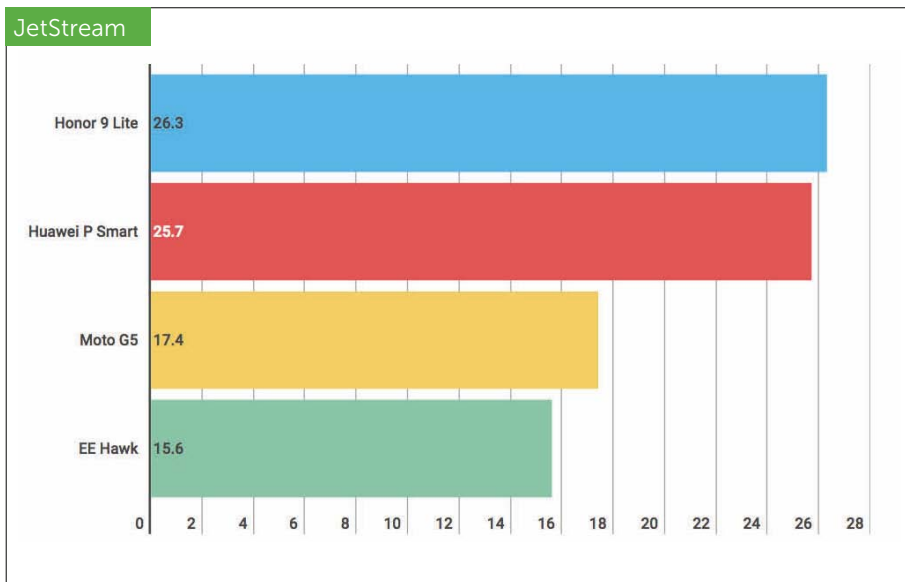
BUYING GUIDE

GFXBench Manhattan



GFXBench T-Rex





performance thanks to its lower resolution screen. Overall, we've found the performance to be smooth in general usage, but it's not flawless. The main issue is that the camera can take a while to load, and we've even found the app menu to lag sometimes.

### Connectivity

Using a memory card will take up the second SIM slot, though this won't bother most users. The Honor 9 Lite features LTE connectivity, NFC, 11b/g/n Wi-Fi and GPS. It doesn't have the more modern reversible USB-C port but does have the more and more elusive headphone jack.

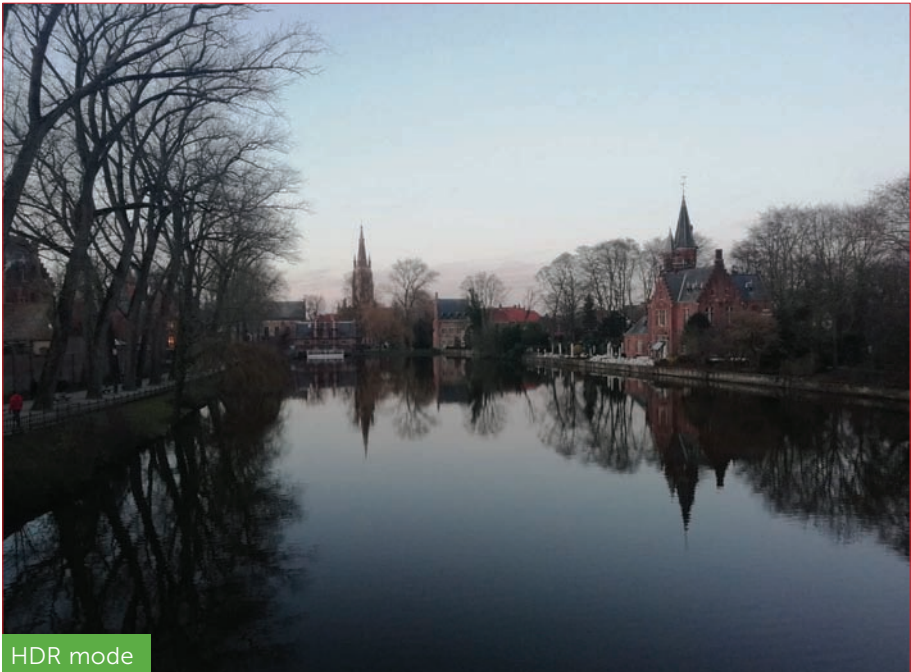
The fingerprint scanner on the back works well and can be used for various things other than unlocking

## BUYING GUIDE

the phone. These include taking photos, answering calls, stopping alarms, browsing photos and pulling the notification panel down – you just need to switch them on in the settings.

## Cameras

Apart from having a 'FullView' display, Honor is really selling the 9 Lite on the basis that it has no less than four cameras. You'll find a combination of 13- and 2Mp camera on the front and back. Each pair works together to provide what's commonly known as a portrait mode, where the 13Mp sensor captures the detail, while the low resolution sensor is there for



depth effect. Although the rear cameras are the same, they feature HDR and phase detection auto focus.

Once again, the Honor 9 Lite is impressive here if not perfect. Aside from the camera taking a while to load and the autofocus taking a while to lock on, the results are generally good from both rear and front. As you might expect from a budget phone, low light performance isn't anything special but as you can see opposite the HDR mode works well for landscape and the portrait mode does a decent job – just remember to turn on the bokeh effect to blur the background.

### **Battery life**

It's understandable there's nothing like wireless charging here and even no USB-C. There's a 3,000mAh battery, which is about average for a mid-range phone, but more than usual for the budget category. Some fast charging would be nice, but perhaps that's too much to ask at this price.

Honor promises a whole day's use and that's what we've found during our testing. Even being out and about relying on the 9 Lite for Google Maps and more wasn't enough for it to conk out before bedtime.

### **Software**

It's great to see that the Honor 9 Lite comes with Android 8.0 Oreo out of the box. That's the latest version, which many of last year's phones, even the Galaxy S8, haven't been updated to yet.

Honor adds Huawei's EMUI 8.0 on-top which used to be a big issue but the overlay has been improved over time. These days it's closer to stock, simpler and

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easier to use. You get the Google Now panel a swipe away from the home screen, gorgeous lock screen images that change every time you unlock and the option to customize the phone with Themes.

There are still issues though, and on the downside there are a few too many pre-installed apps, including no less than six games and by default there's no app draw. Luckily, you can easily switch it on in the settings. You can do things like double-tap to wake the screen but they're switched off by default. As is the app draw/menu, so you'll be presented with an iOS-style layout at first. Not everyone will like SwiftKey either, but you can easily install a different keyboard if you like.

Overall, then, it's not a perfect software experience, but it's much better than previously and most issues can be rectified with some customization.

## Verdict

The Honor 9 Lite might not have all the mod cons, but it's one of the cheapest phones around to offer an 18:9 screen with a bezel-free design. It's an attractive device and general specifications are good, including no less than four cameras. It doesn't have flawless performance but there's little to complain about at under £200 making it the best budget smartphone around. **Chris Martin**

## Specifications

- 5.69in (2160x1080, 428ppi) IPS LCD capacitive display
- Android 8.0 Oreo





- HiSilicon Kirin 659 processor
- Octa-core 4x 2.36GHz Cortex-A53 and 4x 1.7GHz Cortex-A53 CPU
- Mali-T830 MP2 GPU
- 3/4GB RAM
- 32/64GB storage, microSD up to 256GB
- Fingerprint scanner
- Dual rear-facing cameras: 13- and 2Mp, phase detection autofocus, LED flash
- Dual front-facing cameras: 13- and 2Mp, 1080p
- 802.11b/g/n Wi-Fi
- Bluetooth 4.2
- A-GPS, GLONASS, BDS
- Micro-USB 2.0
- Non-removable lithium-polymer 3,000mAh battery
- 151x71.9x7.6mm
- 149g

## 2. Moto G6 Play

£169 from [fave.co/2IbusST](https://fave.co/2IbusST) ★★★★★☆

The Moto G6 Play is a sleek budget phone that costs just £169. It is an outstanding affordable phone in 2018

that in no way feels like one despite costing less than the Moto G6 and G6 Plus.

While those two handsets have better specifications, the G6 Play has charmed us right out the box. It is well designed, sleek yet sturdy and a decent performer considering the low-end spec sheet. Here's our review explaining why the Moto G6 Play is such a good deal.

## Design

While the G6 and G6 Plus look pretty much identical, the Moto G6 Play has a slightly different design. You can tell it's part of the same range of phones, but the Play has a few quirks that make it stand out.

For starters, the fingerprint scanner is on the back and has the Motorola logo on it. You might prefer the placement compared to the front-mounted G6 and G6 Plus, but that's entirely down to personal preference.

At first glance you'd think Motorola had removed its headphone jack, but actually it's moved it from its position next to the USB port on the G6 and G6 Play to the top of the device. Another change here is that this port is Micro-USB rather than USB-C, which is a shame considering its an older standard, but understandable considering the price.

While the more expensive G6 models have a sleek 3D glass rear cover, the G6 Play is plastic. It still looks and feels good though, and actually the plastic cover helps in terms of grip. The other thing missing here is a p2i water-repellent coating (in the UK at least), so you'll have to be a little more careful

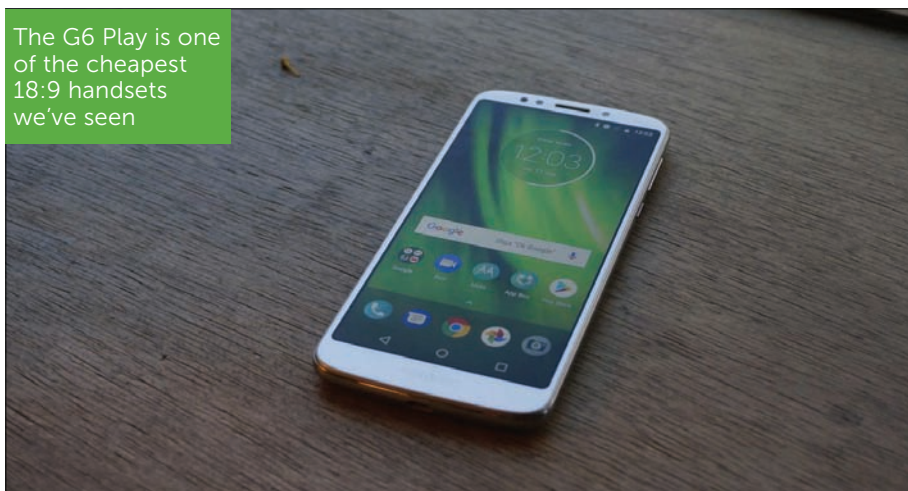
with it around water, but we used it in the rain and it came out unscathed.

The G6 Play is a bit chunkier than most phones at 9mm and weighs a reasonable 175g. These aren't huge differences to the other G6 phones, though and the bulk and weight actually help to make it feel more premium – but if you want a slim, sleek phone this is not it. Our review unit is an attractive hue though somewhat a fingerprint magnet. But the way it reflects light is very cool for a budget phone and helps it to stand out, along with its circular camera module.

## Display

The G6 Play's screen is a 5.7in 18:9 LCD, but not a Full HD resolution at 1440x720p. We still really liked using the phone, and the lower resolution of the display in comparison to the G6 and G6 Plus isn't an issue in our eyes. It can deal with colour reproduction well

The G6 Play is one of the cheapest 18:9 handsets we've seen

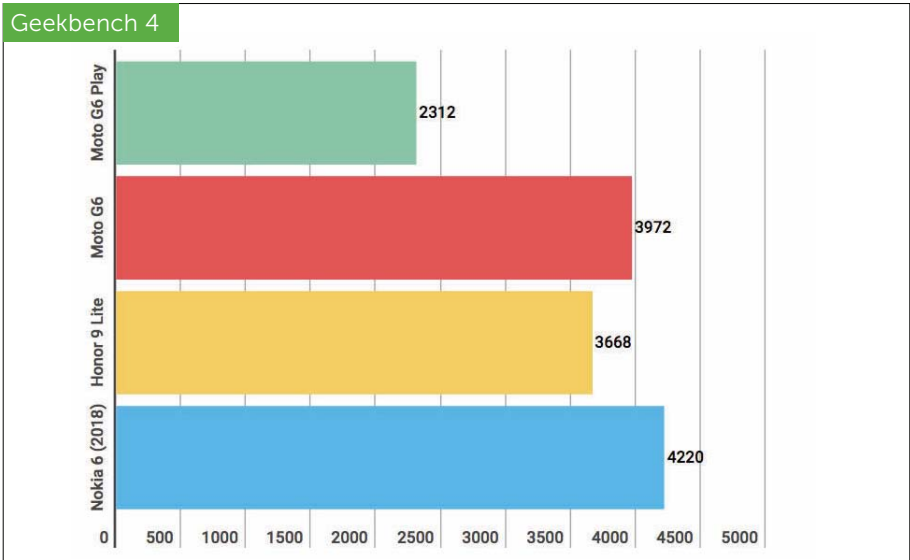


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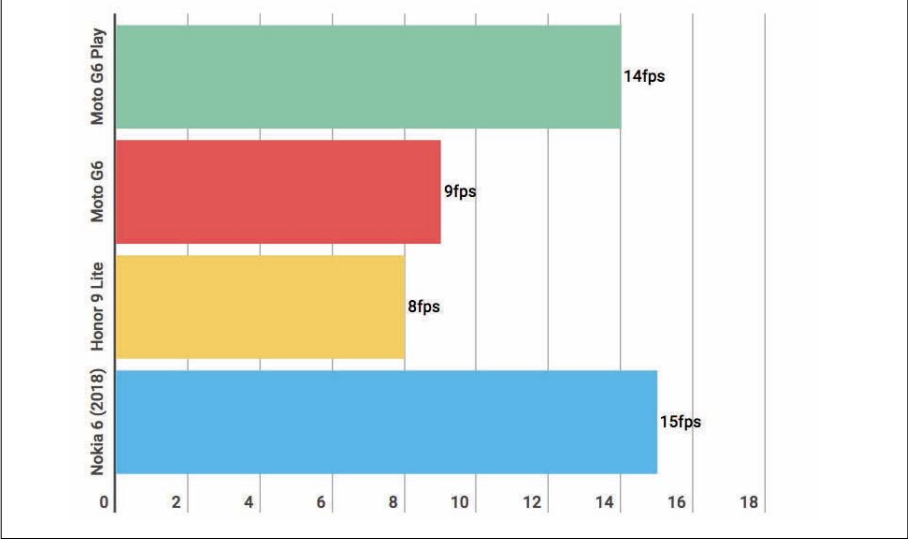
in standard mode, but has the option to change to vibrant to boost the saturation. The display is more than sufficient at this price, and this is one of the cheapest 18:9 phones we've seen, and Netflix on the bus was no trouble at all.

**Processor, memory and storage**

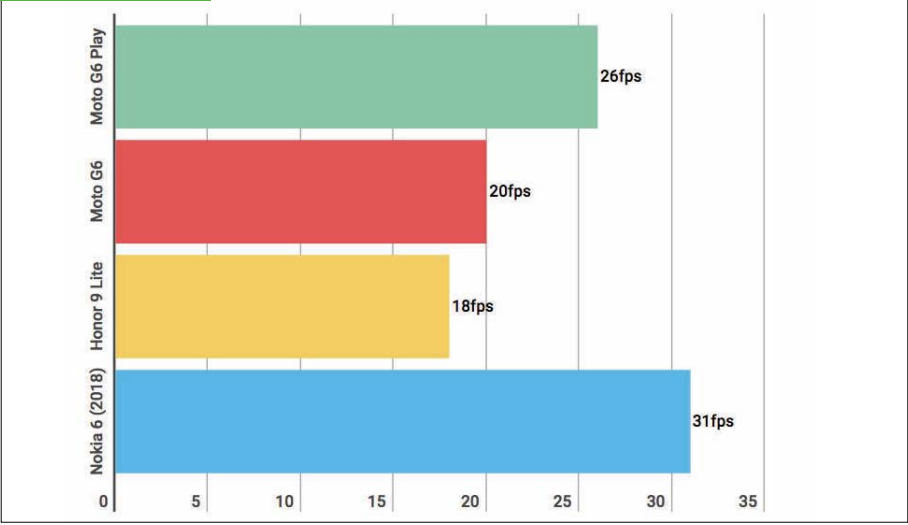
It's impressive to see the G6 Play has 3GB of RAM and 32GB of storage, which matches the entry configuration of the regular G6. However, the processor drops from a Qualcomm Snapdragon 450 to a 430. The lower-grade chip means performance isn't as good, and in a tangible way, though we found the phone perfectly serviceable as our main phone for several days. Multi-tasking is a tad slow at times and the camera app lags, but for calls, texts, social media,



GFXBench Manhattan



GFXBench T-Rex



email and even Spotify to Bluetooth headphones, the G6 Play is surprisingly excellent.

As our benchmarks shows, the G6 Play holds its own against phones of the same price and specifications. It performs faster in frames per second tests than the G6 due to its lower resolution screen – but in fact, you won't notice any difference in use between any of these four phones.

### **Connectivity and audio**

As is standard on lower-end phones, there is Bluetooth 4.2 for connecting to accessories such as speakers, but with the absence of the aptX standard, audio quality to wireless headphones is noticeably patchy. If you want to use the speaker, it's a front port deal and gets quite loud, but is only suited to talk radio or podcast playback – and a quiet solo Netflix session at a push.

### **Cameras**

Motorola has given the G6 Play a 13Mp camera, but there's no secondary lens. There's phase detection autofocus and an f/2.0 aperture, and the results are just about social media-acceptable, but it is obviously not a standout shooter.

Note how it can capture the sky well in some shots, but it becomes blown out in others. The level of detail captured for a budget phone is pretty decent, though.

Video is limited to 1080p at 30fps, though the phone can still record slow motion. The front camera is 8Mp like the other G6 models but, again, has fewer features here and is passable at best.

The G6 Play's camera is decent for a budget camera



### **Battery life**

Although most areas are downgrades, the Play offers a much higher-capacity battery than both the other G6 phones. It's a whopping 4,000mAh, compared to the 3,000- and 3,200mAh G6 and G6 Plus.

Motorola says this means you can get 32 hours usage from the device, which sounds amazing – and more importantly we found to be true in real world use. The G6 Play lasted for over two days of use before hitting anywhere near 10 percent battery, which is impressive on a modern (if low-end) smartphone.

It also benefits from Turbo Charging: you can get six hours of life from a 15-minute charge and in our tests, it charged from 0- to 33 percent in half an hour.

## Software

Overall, the experience on the G6 Play is solid thanks to Moti's uncluttered Android skin that barely changes anything from stock. Notably, there are fewer camera features on the phone compared to the G6 and G6 Plus thanks to the lack of dual rear cameras.

You still get Android 8.0 Oreo with a stock interface – it's very much the experience you get on Google's own Pixel devices bar a few aesthetic changes. That means Android as it's intended, with no bloatware to take up valuable storage, important when you only have 32GB (although it is expandable).

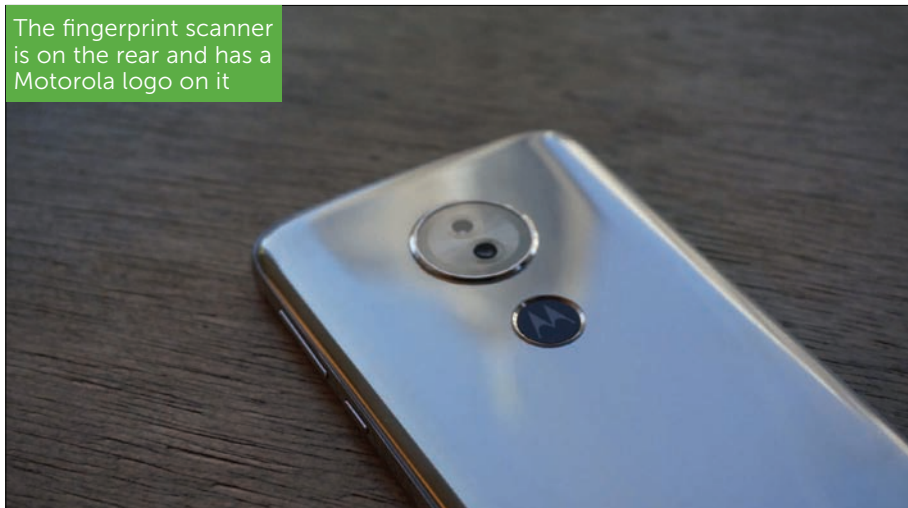
Motorola does add its own Moto app, which contains helpful things such as actions and things you can do with the display. The G6 Play doesn't have Moto Voice, though.

## Verdict

The Moto G6 Play is a great little surprise of a phone. It holds its own next to the other two G6 phones and has better battery life (and a cooler fingerprint sensor). The 18:9 display and premium (but plastic) design means it feels just as well-made as phones double the price but doesn't compromise on performance to do so. With a headphone jack as a plus, a minus is Micro-USB but we'll forgive that on its strengths and can recommend the G6 Play as one of the best budget phones of 2018. **Chris Martin and Henry Burrell**



The fingerprint scanner is on the rear and has a Motorola logo on it



### Specifications

- 5.7in (1440x720, 282ppi) IPS LCD capacitive display
- Android 8.0 Oreo
- Qualcomm MSM8937 Snapdragon 430 processor
- Octa-core 1.4GHz Cortex-A53 CPU
- Adreno 505 GPU
- 2/3GB RAM
- 16/32GB storage, microSD up to 256GB
- Iris/fingerprint scanner
- 13Mp rear-facing camera: f/2.0, 1.12µm, phase detection autofocus, LED flash
- 8Mp front-facing camera: LED flash, 1080p
- 802.11b/g/n Wi-Fi
- Bluetooth 5.2
- A-GPS, GLONASS, BDS
- Micro-USB 2.0
- Non-removable lithium-ion 4,000mAh battery

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- 154.4x72.2x9mm
- 175g

**3. Moto G5**

**£119 from [fave.co/2JhUdS4](http://fave.co/2JhUdS4) ★★★★★**

Premium for All' is Lenovo's new motto for its G5 phones, the Moto G5 and G5 Plus, which aim to offer the build quality and feel of a flagship device at decidedly non-flagship prices. That's especially true of the G5, which offers a metal body, rapid charging, and fingerprint sensor controls – all at a sub-£200 price.

**Design**

Design is where the G5 has seen the biggest overhaul from its predecessor. The phone features an aluminium body – instead of the G4's plastic – which



means it immediately feels like a more expensive phone than it is. The 5in display stretches most of the way to the sides of the body, though there's still plenty of bezel at the top and bottom.

The rear of the phone is dominated by the large camera aperture that sits above a brushed metal Motorola 'M'. At 144.5g, it's a comfortable weight and has that reassuring heft of any metal-bodied device, while it measures 144.3x73x9.5mm, which is small enough to use in one hand. It's available in Lunar Grey, Sapphire Blue or Fine Gold – our review unit was the grey model, which is attractively understated.

The G5 doesn't offer the sort of striking design that's likely to turn heads – at least not until you tell someone how little you paid for it. It's mostly straightforward, unassuming stuff, but it's the feel of the phone and its build quality, that really sells it. This is a handset that feels and looks well-made – 'cheap' never once sprang to mind. It's simple, it's elegant and there aren't many better-looking phones that will cost you this little.

## Features

Offering that sort of design and build quality at less than £200 comes at a price, of course, and the Moto G5's internal specifications are where it lives down to its price.

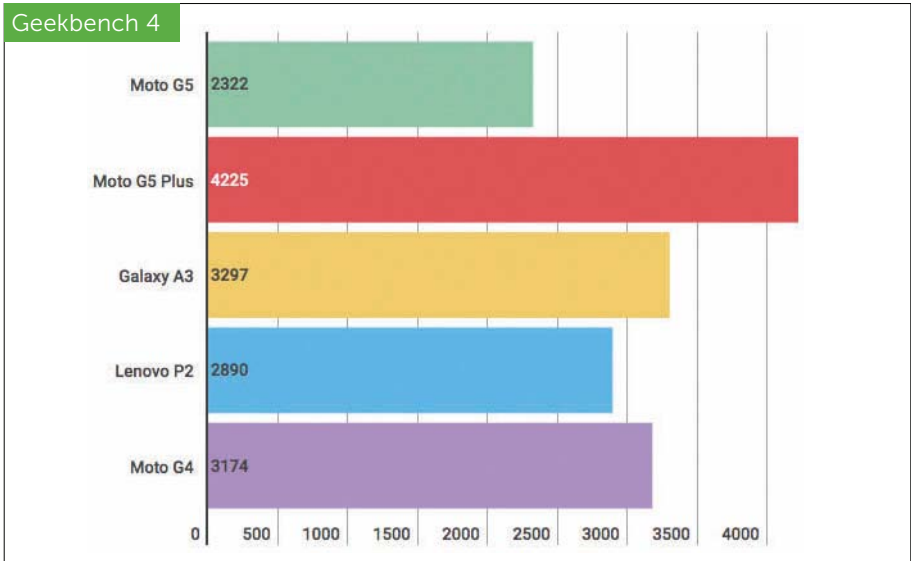
It's powered by a Snapdragon 430 with a 1.4GHz eight-core CPU and 450MHz Adreno 505 GPU. Our review unit came with 3GB RAM, though you can also get it with 2GB. With only a £10 price difference, we'd find it hard not to recommend opting for the

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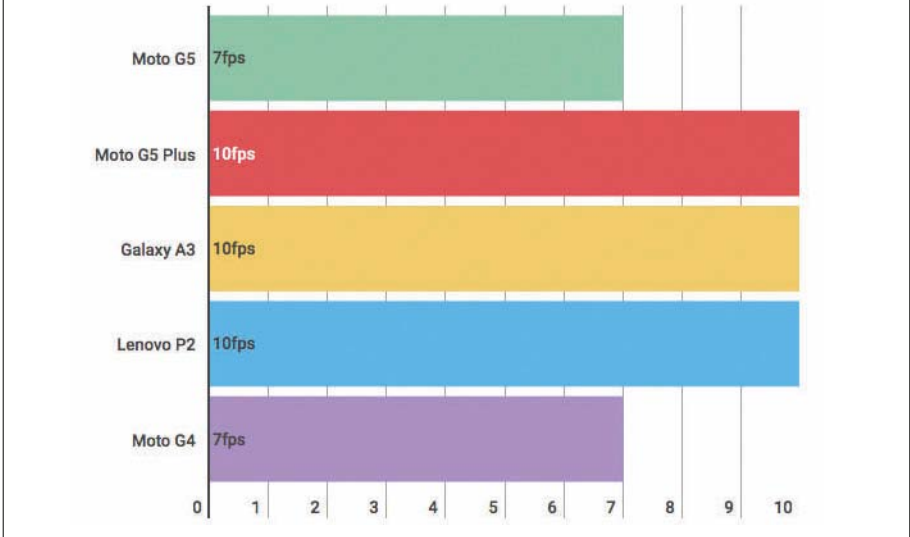
higher-spec model. To be blunt, the benchmark results aren't great (see overleaf). We were surprised to see slightly worse scores than from 2016's G4, likely because it runs the more recent – but less powerful – Snapdragon 430, compared to the G4's Snapdragon 617. Even a better GPU and more RAM weren't enough to make up for the CPU gap.

Even so, in day-to-day use the G5 doesn't feel slow, and it should be more than enough for average usage, including streaming video and light gaming. The G5 never feels like it's underperforming.

The 5in display is full 1080p and 441ppi, with crisp, bright colours, though it has no Gorilla Glass protection. Below that you'll find the fingerprint sensor, which doubles up as a replacement for Android's on-screen buttons, through some nifty



GFXBench Manhattan



GFXBench T-Rex



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swipe controls. The Moto G5 comes with a small 16GB of on-board storage, but there's support for microSD cards up to 128GB. The rear camera is 13Mp with LED flash and phase detection autofocus, while the front camera is 5Mp. Taking photos with the autofocus was almost instantaneous, and for the most part we were able to capture crisp, clear photos even in challenging lighting.

There's a 2,800mAh battery, which should provide a full day's use pretty comfortably. The most we managed to wear it down to was 20 percent after 16 hours of usage, including some heavy camera and internet use – you can trust the G5 to last the day, but you will want to charge it each night.

It comes packaged with a 10W Micro-USB rapid charger, which is able to provide a few hours of battery life after just 15 minutes or so of charging – as



A selection of images taken with the rear 13Mp camera

long as the battery is low to start with. It also supports TurboPower charging, which can offer six hours of battery in the same time, though you'll have to buy the charger separately. There's also 2.4- and 5GHz Wi-Fi, GPS, Bluetooth 4.2 and a water-repellent coating. One big omission is NFC, so you won't be able to use Android Pay or its equivalents. You do get a 3.5mm headphone jack, though.

## Software

The G5 comes loaded with Android 7.0 Nougat, and runs a version that's close to stock, with a few 'Moto experiences' added on (more on those in a moment). What this means is that if you're looking for something not far from the pure Android experience, but don't want to splash out on the Google Pixel, the Moto G5 could be a good option.

It's also one of the first phones included in the search giant's new expansion of its Google Assistant services, previously limited to only a handful of handsets, though it wasn't on the G5 at launch. Eventually, you can probably expect the new AI assistant to be ubiquitous across Android, but for now this will be one of the cheapest ways to get your hands on it.

The big difference from stock Android is the inclusion of the gesture-based 'Moto Actions', some of which may be familiar from other Motorola phones, while others are entirely new. They're all optional, and are activated or deactivated from the included Moto app. You can do a double 'karate chop' motion to turn on the torch, and quickly twist

the phone backwards and forwards twice to activate the camera. Placing the phone face down on a table sets it do 'Do Not Disturb', while picking it up when it's ringing will silence the ringtone.

You can also swipe up from the bottom of the screen to shrink the display for easy one-handed use. The most welcome addition is the use of the fingerprint sensor as a one-button replacement for Android's normal on-screen controls. You can now swipe left across the sensor to go back, tap it for home, and swipe right to open the list of recent apps.

It's an intuitive system and within seconds we were comfortably swiping away – it really speeds up loads of basic tasks, and is a feature not many other Android phones have yet. Occasionally, it can be a bit fiddly – registering your swipe as a press, or vice versa – but for the most part it works well, and it feels sluggish switching back to on-screen buttons. It's especially helpful here given the G5's relatively petite 5in screen – the extra screen real estate gained by removing the on-screen buttons makes the display feel more expansive than it really is.

## Verdict

There's fierce competition in Android's budget market, but the Moto G5 is a strong contender. The build quality alone feels like it belongs on a much more expensive phone, while the fingerprint gesture controls genuinely improve the Android experience. The benchmarks and battery hold it back, but they're not unreasonable given the price – and you won't find a much better-looking phone at £169. You might want

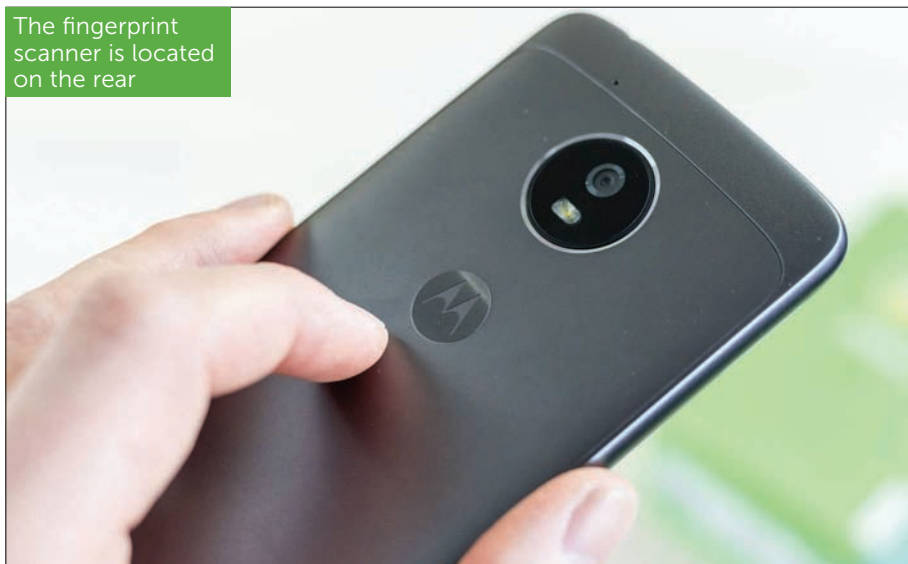


to spend the extra to get the Moto G5 Plus with more storage, a better camera and more. **Dominic Preston**

### Specifications

- 5.85in (1,080x920, 441ppi) touchscreen
- Android 7.0 Nougat
- 1.4GHz Qualcomm Snapdragon 430 octa-core chip
- Adreno 505 graphics
- 2- or 3GB RAM
- 16GB storage
- 13Mp main camera, LED flash, support for 1080p video at 30fps
- 5Mp front camera
- 802.11 a/b/g/n Wi-Fi (2.4- and 5GHz)
- Bluetooth 4.2
- 4G LTE

The fingerprint scanner is located on the rear



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- Nano-SIM
- 2,800mAh removable battery
- Micro-USB rapid charging
- MicroSD support up to 128GB
- Water-repellent nano-coating
- 144.3x73x9.5mm
- 144.5g

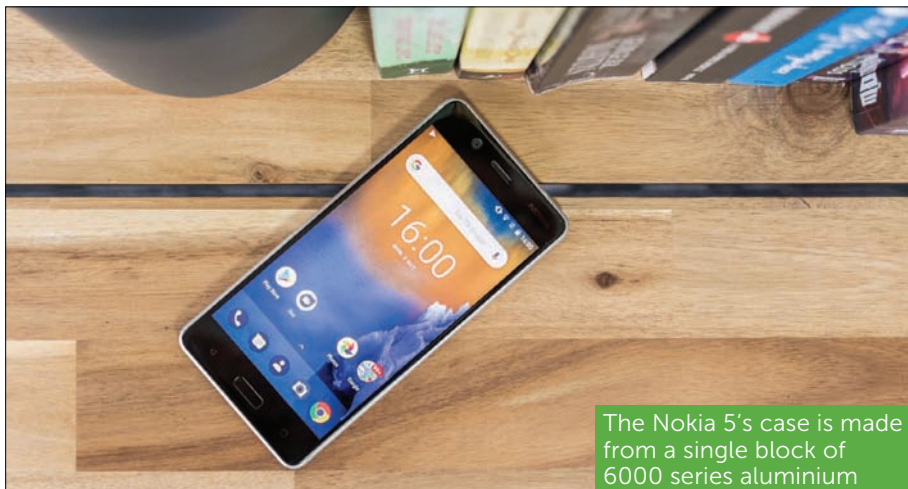
#### 4. Nokia 5

**£179 from [fave.co/2gebE9w](https://fave.co/2gebE9w)**

Although the Nokia 5 was launched by HMD Global at MWC 2017 back in February, it's still one of the best budget handsets you can get.

#### Design

We love the design of the Nokia 5. We were so pleasantly surprised when we first picked it up,



already knowing how low the price tag is. It has a 5.2in display within a neat, compact body. It feels incredibly premium, with smooth, rounded edges that make it sleek and comfortable to hold.

It's made from a single block of 6000 series aluminium, and uses Gorilla Glass to add durability to the display. It weighs 160g and measures just 8mm in thickness. The bezels on either side of the screen are tiny, and seem to blend right into the chassis. The 5.2in display means the overall size of the phone is good for one-handed use and portability while still offering enough room for a good experience when watching videos or playing games.

The Nokia 5 is available in Matte Black, Silver, Tempered Blue or Copper. We particularly like the blue option, but all four colours look gorgeous. Show this phone to a friend and they'll never guess the price tag. Consider us impressed.

## Hardware

While we love the size of the screen, a downfall is that its display resolution isn't as high as we'd have liked.

It's 1,280x720 HD at 282ppi, which still manages to be vivid and bright, but when compared with the likes of the Moto G5's Full HD offering on a phone with the slightly lower price tag it's a bit of a shame that the Nokia 5 misses out.

Inside is a Qualcomm Snapdragon 430 processor, which is the same processor you'll find inside the Nokia 6 and the Moto G5. That's paired with Adreno 505 graphics and 2GB RAM. It managed to achieve a significantly better score than the Moto G5 in our

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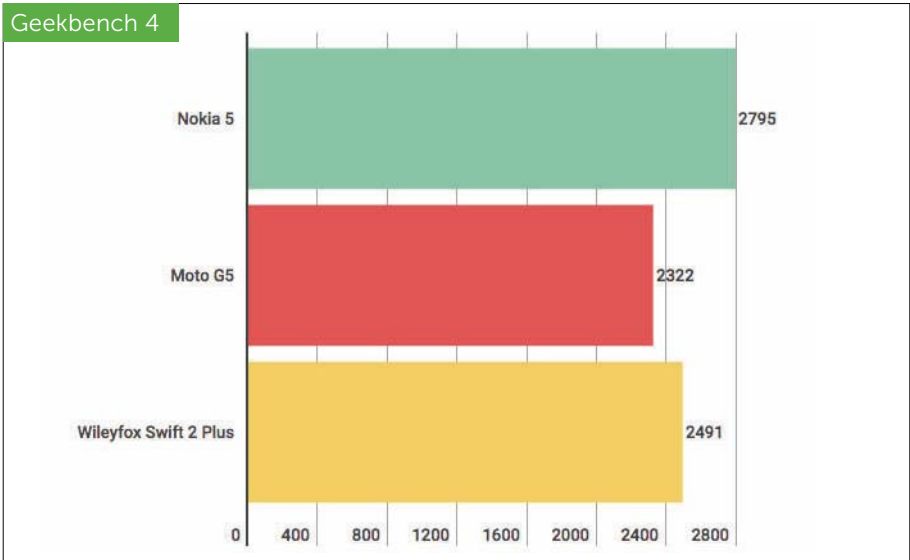
Geekbench 4 processor tests, although it couldn't quite live up to the Wileyfox Swift 2 Plus in every test.

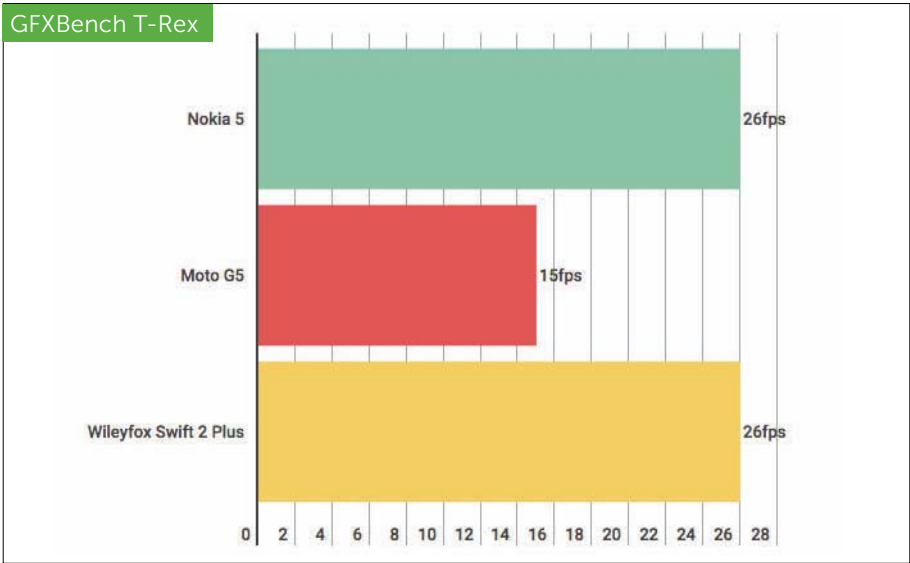
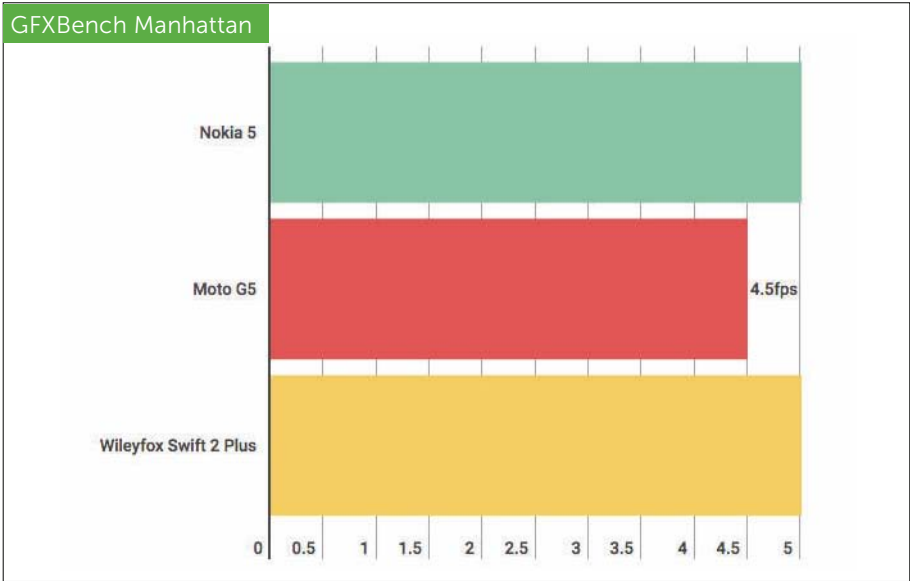
In practice, we found the Nokia 5 plenty fast enough for day-to-day tasks such as sending messages, checking emails and browsing the web. Apps open without much lag, including the camera app, and the only time we found it a little too slow is when we needed to use the flash.

It also achieved much higher scores than the Moto G5 in all of our GFXBench tests, which are designed to test the graphics capabilities.

There's 16GB of internal memory with support for up to 128GB of additional storage via microSD.

There's a non-removable 3,000mAh battery that charges via Micro-USB, which we found could last for a full day on one charge with reasonably heavy





## BUYING GUIDE

use, and two days or more with light use, which we were suitably satisfied by. Again, this beats the Moto G5's 2,800mAh battery, although the Nokia 5 misses out on the rapid charging capabilities which typically gives a few hours of battery life after just 15 minutes of charging.

Connectivity includes Bluetooth 4.1, NFC and LTE 4G, and there's a 3.5mm headphone jack on the top for your wired headphones.

A fingerprint sensor is built into the home button, and we found it to be easy to setup and almost always quick and responsive.

## Cameras

When it comes to cameras, the Nokia 5 has a 13Mp camera on the rear with a dual tone flash. Photos are captured in 4:3 aspect ratio, and if you want to capture 16:9 you'll reduce the quality to 8Mp.

This is in line with rivals like the Moto G5, and we found that it could capture satisfactory photos in most lighting, perfect for on-the-go shots to look back on or to share on social media.

The front-facing camera offers 8Mp for selfies, which is better than the Moto G5's 5Mp offering.

Low light photos aren't great, but the flash makes up for this as you'll see from the photo of St. Pancras Renaissance Hotel overleaf.

## Software

The Nokia 5 is among the first Nokia phones to run the Android operating system. It comes with Android 7.1.1, and fans of stock Android will be pleased to hear that



Nokia has left it well alone. This is one of the cheapest ways to get stock Android outside of the Pixel series made by Google itself so a big thumbs up from us. That means an intuitive interface and no additional bloatware. The Nokia 5 also offers Google Assistant, which is the Android AI assistant in the same way that Siri is Apple's iOS voice assistant.

### **Verdict**

We've long been lovers of the Moto G series for the top pick in the budget Android category, but the Nokia 5 knocks it off the top spot. With a better camera,

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better performance and a stunning design, we are blown away by the low price tag offered here.

A downside is the screen resolution, but if you can look past this and you're looking for an Android smartphone that costs less than £200, you can't get much better than this. **Ashleigh Macro**

**Specifications**

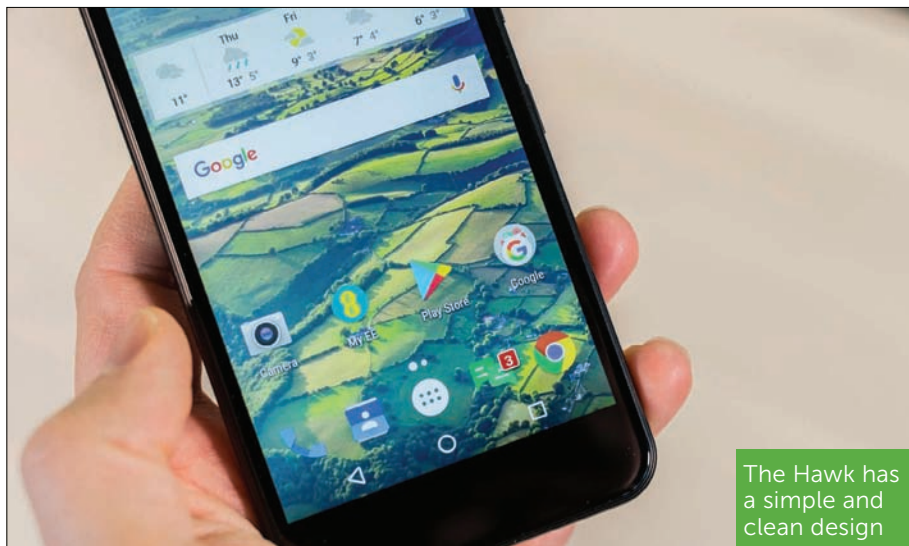
- 5.2in (1280x720, 282ppi) IPS display
- Android 7.1.1 Nougat
- Qualcomm MSM8937 Snapdragon 430 processor
- Octa-core 1.4GHz Cortex-A53 CPU
- Adreno 505 GPU
- 2GB RAM
- 16GB storage (microSD up to 256GB)
- 13Mp, f/2.0, phase detection autofocus, dual-LED (dual tone) flash
- 8Mp, f/2.0, 1.12µm pixel size
- A-GPS/GLONASS
- Bluetooth 4.1
- NFC
- Micro-USB 2.0
- 3,000mAh non-removable lithium-ion battery
- 3.5mm headphone socket
- 149.7x72.5x8mm
- 160g

**5. EE Hawk**

**£149** from [fave.co/2xH3SQK](https://fave.co/2xH3SQK) ★★★★★

Mobile operator branded phones are a curious thing. They often come and go every year, particularly from





The Hawk has a simple and clean design

Vodafone, without much fanfare. Often too these handsets are unattractive to consumers as they are filled with branded bloatware. Luckily, the EE Hawk is a refreshingly different take.

It's a budget choice that is more capable than it first appears, and is a sensible choice if you don't mind being on EE. Its simple design and clean version of Android are refreshing on a phone that you might assume is too cheap to be any good.

### Design

For a £150 smartphone, the Hawk is well built. But its smooth unibody design is though one of the biggest smeary fingerprint magnets we have ever seen on a phone, but if you can get around that then the subtly deep blue and black of the rear is attractive.

Also on the back is a camera and flash, fingerprint sensor and EE logo.

It is smartphone design 101 from hereon in, with a compact design not dissimilar to a black iPhone from the front. Aside from the usual buttons and a headphone jack, this is a pleasingly plain phone, which is what you'd expect for the price.

It's also great to see a USB-C port rather than the nearly-dead Micro-USB, and the free JBL in-ear headphones in the box sweeten the deal. They are quite plasticky, but have a flat and therefore supposedly tangle-free cord. For in-box headphones, they have decent response even if they are a tad too trebly.

For the same money as the Hawk, you can get a Moto G5 that we think looks and feels better built than the Hawk, but at this price we're nitpicking.

It's what the Hawk can do, rather than what it looks like, which is more impressive.

### **Processor, storage and RAM**

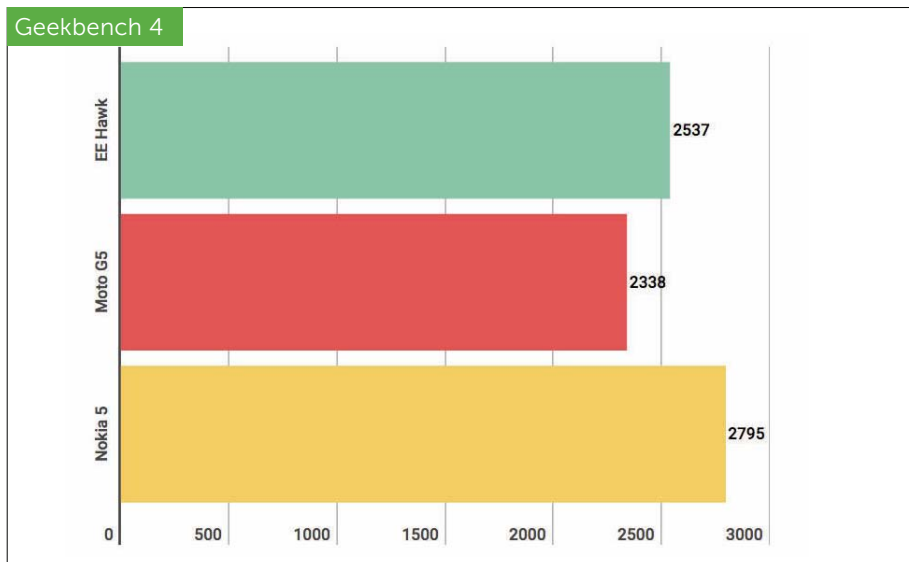
When the Hawk landed on our desk with a weak 1.5GHz MediaTek MT6750 processor and 2GB RAM, we didn't think its performance would overly impress. But with extensive use, EE has definitely got the balance right. The Hawk is a relatively light phone at 134g with 16GB storage. This isn't a lot, but if you want to go media heavy, there's a microSD slot up to 128GB. It copes well with all the simple smartphone tasks we put it through. All social media, messaging and video apps worked with admittedly an occasional stutter, but perfectly serviceable given the price.

## Display

BBC iPlayer, Netflix and YouTube work well and look good on the 5in display. Bear in mind the low resolution of 1,280x720 with 294ppi. Colours across the whole phone are also quite washed out, with not much vibrancy. But if you're considering the Hawk, chances are you won't be indulging in mega streaming binges and want a 4G capable smartphone for simpler tasks – ones that you won't need to stare at the screen for hours for. For comparison, the Moto G5 has a 1920 x 1080p display that handles most content visually better.

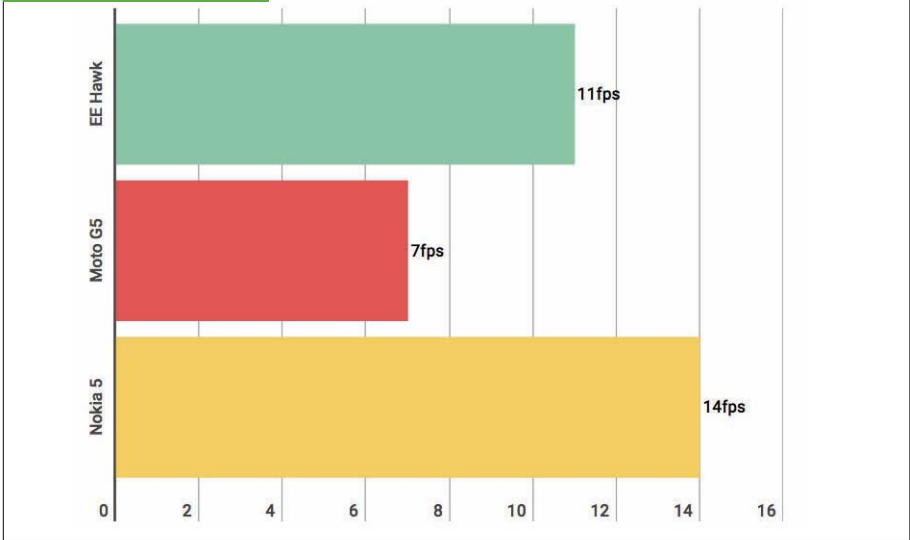
## Performance

Comparing the Hawk to the Moto G5 and similarly specified Nokia 5 in these benchmarks shows that the

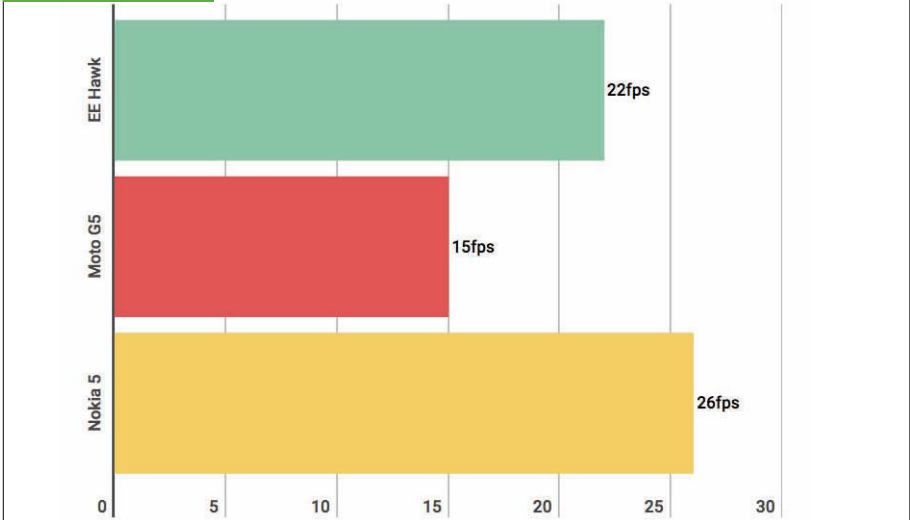


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GFXBench Manhattan



GFXBench T-Rex



Hawk edges the G5 and is a tad behind the Nokia 5, but the differences are negligible, and you won't see any real world difference. And there's also an FM Radio built in – a useful feature that is quite hard to find on a smartphone these days.

## Cameras

The 13Mp rear camera on the Hawk is fine, but you will have to accept it isn't up to much. For quick snaps of landscapes, family and friends then it's fine, but it only barely acceptable for social media posting and you will certainly not want to use it as your main camera on a holiday, for example.

Let's just say you shouldn't buy the Hawk for its camera – though we know that isn't what EE was focussing on with it.

## Software

The EE Hawk runs Android 7.0 Nougat. There's no promise from EE of 8.0 Oreo, but yet again for the price, this is an excellently untouched version of Android. It is very close to Google's stock version, and means that the Hawk runs as smoothly as its limited hardware allows.

There is very little bloatware pre-installed; only My EE (an app to view your price plan that you'll use anyway) and Lookout, an EE branded security app that scans all apps you download to ensure they're safe to use.

Other than that, you get a clean Android experience, with Google Assistant and OK Google support and everything else you'd get on a phone

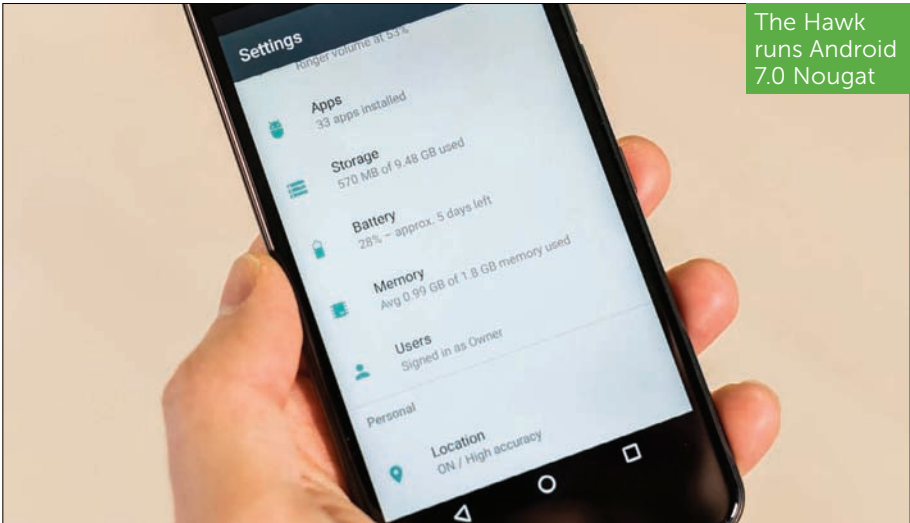
BUYING GUIDE

that costs over five times the price. There aren't many customization options, such as being able to change theme, but it's an acceptable omission for the price.

There's an built-in Gallery app, but otherwise the Hawk prompts you to use Google's apps for contacts, calendar and more – great, as you don't get duplicate apps built in if you are using Google services (and we recommend that you do).

**Verdict**

The EE Hawk is a little gem at the start of 2018. The build is above average for the asking price, and it is a solid handset to go for if you simply need to use 4G data on a smartphone but don't want to spend half your paycheck to do it. It is not a phone to game on due to the low powered internals, though it copes with video fine. The display is quite washed out, but



the clean Android software makes up for this. You won't want to post many pictures from the not-great camera on Instagram, but if you want a decent snapper, you'll look at phones that cost more. The EE Hawk is up there with the Moto G5 as one of the best budget smartphones in the UK. **Henry Burrell**

### Specifications

- 5in (1,280x720, 294ppi) IPS LCD capacitive display
- Android 7.1 Nougat
- MediaTek MT6750 processor
- Octa-core (4x 1.5GHz Cortex-A53, 4x 1GHz Cortex-A53) CPU
- Mali-T860MP2 GPU
- 2GB RAM
- 16GB storage (microSD up to 128GB)
- 13Mp front-facing camera: autofocus, dual-LED dual-tone flash
- 8Mp rear-facing camera
- A-GPS
- Bluetooth 4.0
- Micro-USB 2.0
- 2,500mAh non-removable lithium-ion battery
- 144x72x7.9mm
- 134g

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# Do you need antivirus on an Android device?

If Android is as safe as Google says, does your phone or tablet really need antivirus software? **MARIE BLACK** reports

**F**or years now we've been drilling into readers' minds the importance of antivirus software, but times are changing and whereas previously many of their computing tasks took place on a desktop system they now take place on a phone or tablet.

Android viruses have hit the headlines before, leading users to think installing some sort of security software is a good idea. And it goes almost without

saying: the more popular Android becomes the more of a target it is for the bad guys. But do you really need to install a resource- and battery-hogging antivirus app on your phone that is going to plague you with irritating notifications?

In almost all cases, Android phones and tablets do not need antivirus installed. Android viruses are by no means as prevalent as media outlets may have you believe, and your device is much more at risk of theft than it is a virus. But it is true: Android viruses do exist.

The vast majority of known Android viruses have been installed on the back of dubious apps – apps you will no longer find in the Google Play store. By default Android does not allow you to install apps from other sources, so there's no chance of you accidentally installing something nefarious.

Supposing a dodgy app does find its way into the Google Play market, Google will quickly pull the app and uninstall it from your device. But what if it comes back? Symantec has found at least seven malicious apps on the US Play Store that were pulled and then reappeared under new developers with new names.

If you are installing apps outside of Google Play, installing an Android antivirus app is one way to keep yourself safe. False-positive results are common with such apps, however, so you may find your AV app reports an app as dodgy when it's actually harmless. In these cases, taking other precautions can be a more appealing way to safeguard your device from Android viruses.

Such precautions range from carefully checking any requested permissions before agreeing to them,

avoiding cloned apps and keeping Android up to date (with all security patches applied).

Unfortunately, it turns out that even if you update your Android device, it may not be as up to date as you think. Security Research Labs has published the results of an in-depth study in which it claims several big-name vendors are guilty of saying they've rolled out important patches when they haven't.

The worst offenders on its list are Alps, TCL, Oppo and ZTE, which it says have missed four or more critical and high severity patches on the claimed patch date. With two to four misses are HTC, BlackBerry, Asus, Fairphone, LG, Huawei and Lenovo. With one or two are OnePlus, Wiko, Xiaomi, Nokia, Motorola and Honor. Those in the good books with either

Make sure that you keep your Android device up to date



zero or just one missed patch are Google, ZUK, LeEco, Samsung, Sony and BQ.

You should also keep your wits about you, and apply a healthy dose of common sense. You wouldn't click on an attachment in a dodgy email from a sender you don't recognize on your PC or laptop, and we hope you would apply that same thinking to suspicious links sent in Gmail on your phone or via WhatsApp or Facebook Messenger. Typically, these type of links are associated with phishing scams, but that doesn't mean they won't install a virus on your device.

(Incidentally, if you find your Facebook or email account has been sending these sort of messages to your contacts you should immediately change your passwords, and preferably contact those people and warn them to ignore it.)

Supposing your Android phone or tablet does start acting oddly and you have reason to believe malware is at play: a factory reset is all that's required to get it back to normal (one reason why it's a good idea to always back up Android). But if you don't fancy wiping your device we have also issued some handy tips on how to remove an Android virus.

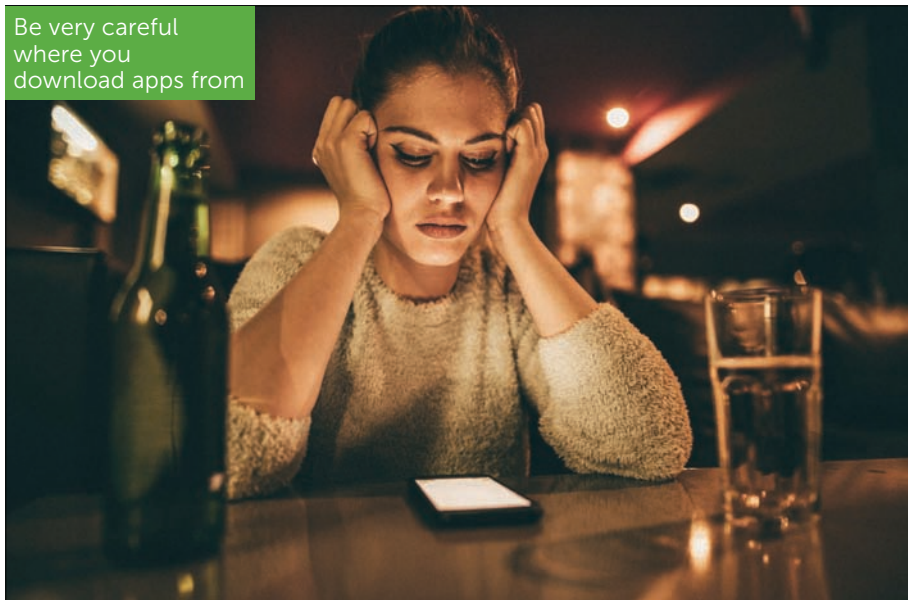
In many cases users report to us that they are seeing suspicious pop-up ads in their browser, or they are being redirected to a different home page to that which they configured in the settings. Our usual advice is to clear out the browser's data cache (in Settings > Apps > Chrome > Storage). You can also read more about how to block pop-up ads in Android. It's worth pointing out that antivirus apps for Android

often have other useful benefits, such as the ability to remotely lock or wipe a lost or stolen phone, or backup and cleanup tools. All these tools are available elsewhere – usually via free apps – but for ease of use it can help to have everything in one place.

### **Avoid dodgy Android antivirus apps**

Just before Christmas we learned of the Loapi trojan, which was spreading itself through advertising campaigns under the guise of antivirus solutions or apps. It's awful to think that an app you install to protect yourself is actually going to do the opposite, but one of the ways in which Loapi works is by putting such a heavy workload on the phone that it causes the battery to overheat, destroying the device.

Be very careful  
where you  
download apps from

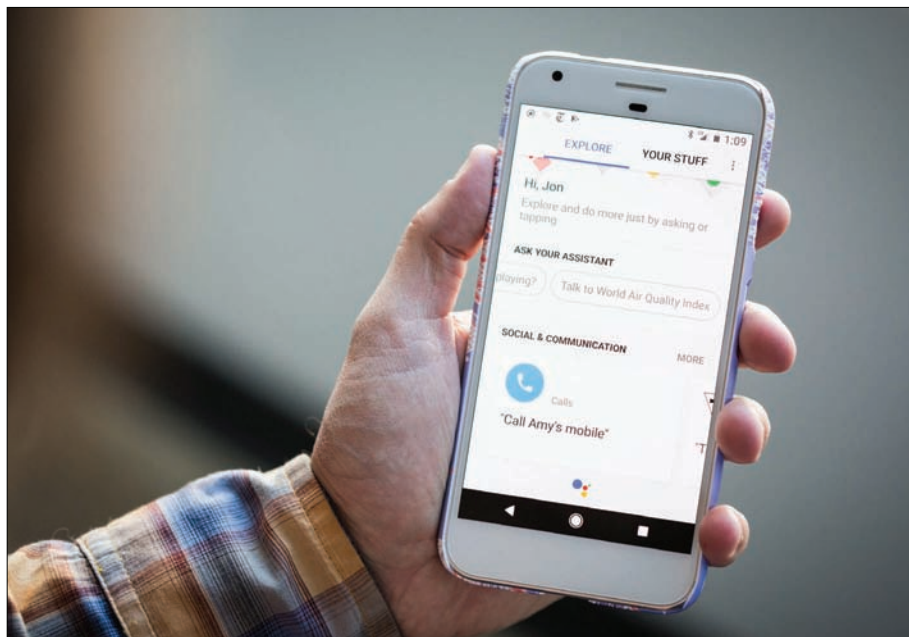


## FEATURE

Loapi can also send out text messages on your behalf, subscribe you to paid services without your knowledge, allow attackers to execute HTTP requests for DDoS attacks, and mine the cryptocurrency Monero.

Loapi prevents a user from uninstalling it by blocking the screen and closing the window when you try to remove its admin rights. It will also prompt you to remove other security apps that might be able to detect and remove it, and keep hassling you about it until you give in.

You don't need an antivirus app installed to protect you from Loapi, but it may help you to detect its presence. Other things you should do include disabling the ability to install apps from unknown sources, and keep your operating system up to date.



# Google Assistant features you should use

Google's AI assistant learned some new tricks while you weren't looking. **RYAN WHITWAM** reveals its best new features

**G**oogle has had voice search features in Android for years, but when Google Assistant rolled out on the Pixel in October 2016, everything finally came together.

You can now get Assistant on all modern Android devices, and Google announced new Assistant

features at I/O 2018 that will make it even better (okay, and maybe a little too real, in the case of Duplex).

It can be easy to miss the improvements if you don't obsessively keep an eye on the news, so here they are in one place: the 12 coolest new features in Google Assistant.

### **Sync connected smart home devices**

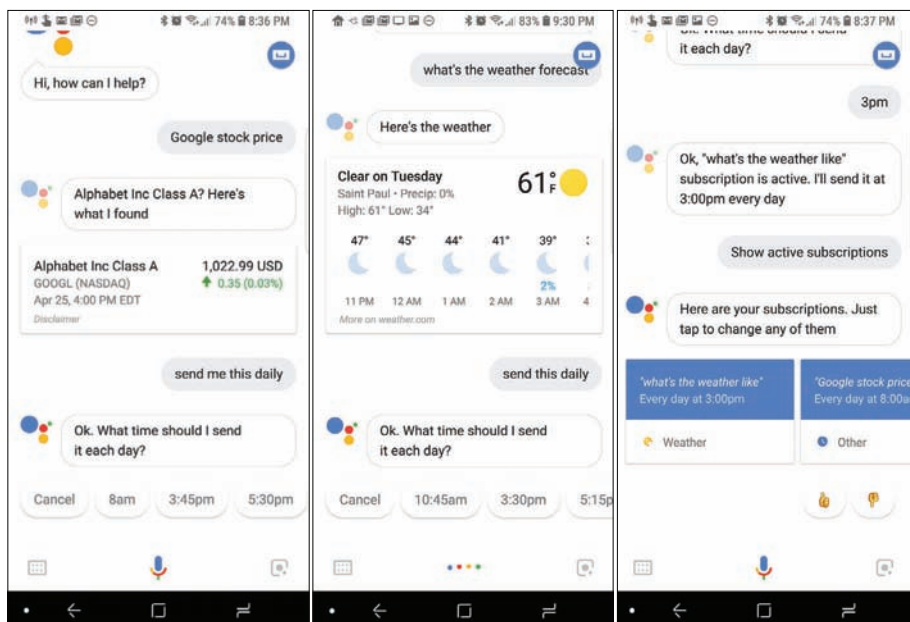
Google Assistant supports numerous smart home devices, but you might notice that devices you've just added to your account don't always work right away. That's because Assistant isn't constantly scanning for new connections. You can give it a kick-start. After adding a new smart home device such as a camera or thermostat, open up Assistant and say, "Sync my devices". Assistant tells you it's syncing with your connected accounts, and a few seconds later any newly added devices will appear in your list. Make sure to add them to rooms in Assistant for full functionality.

### **Send daily info**

Assistant is great for calling up little tidbits like the weather, stock quotes, or even jokes. You don't even have to ask every time, though. You can have Assistant proactively send you certain bits of information as a daily update.

To configure a daily update, start by asking your question normally – ask it for the weather, a dad joke, whatever. After Assistant pulls up the content, you can follow up with "Send this to me daily". Assistant asks what time you want the update, and





you're all set. To change or cancel a daily update, just say, "See my subscriptions".

## Have Assistant remember things for you

Your squishy human brain is fallible, but Google Assistant can remember things without fail. All you have to do is ask it. You can tell Assistant to remember things just by saying "Remember that [some piece of information]". You could tell Google to remember where you parked, what you did with the spare house key, your high score in Tetris, or anything else. As a handy bonus, Assistant also saves maps when you tell it where you parked. Later, you can ask Google to recall the information in various ways. You can be

direct, like asking Assistant “Where did I park?” You can recall factoids you’ve saved with “What did I say about [x]?” or “Remind me about [x]”.

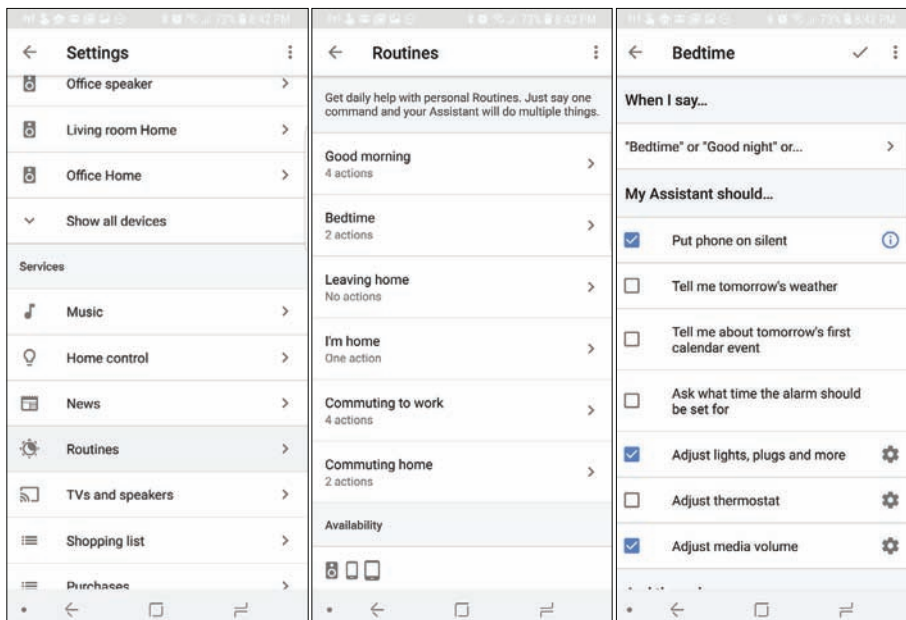
## **Search your Google Photos uploads**

Google Photos is a fantastic backup solution for all your snapshots. Google offers unlimited storage of images and videos, provided you’re okay with a little compression, and Pixel owners get free full-quality backups. If you want to look for specific photos you’ve taken, you can do it right from Google Assistant. All you have to do is ask.

Assistant plugs into the amazing search capabilities of Google Photos, so you can ask to see almost anything. You can ask Assistant to pull up pictures of specific people, locations, and even objects. Tap the image results to scroll through them immediately, or open Google Photos via the shortcut under your pictures. Just make sure you preface your request with something like ‘my photos’ to ensure you get images from your Google Photos library rather than images from a Google search.

## **Routines**

Using Assistant to do the same few things all the time can be tedious, but Routines might be able to help. This feature allows you to connect multiple actions to a single command. There are only a few predetermined routine commands right now, but they could still save you a lot of time. To get started, open the Assistant settings and scroll down to Routines. In this menu, Google provides six commands right now:



good morning, bedtime, I'm leaving (leaving home), I'm home, let's go to work, and let's go home. Say any of those, and you'll trigger the associated Routine. Each one includes a few customization options including smart home devices, travel info, and audio playback. You can also modify the trigger phrase at the top of the Routine settings page.

### Take and share screenshots

You can capture screenshots on Android phones by holding the power and volume buttons, but Assistant can do it, too. In fact, it might be faster if you intend to share the screenshot right away. Open Assistant and say, "take a screenshot" or "share a screenshot".

It takes a moment to capture the screenshot, but you'll get a preview as soon as it's done. Assistant then immediately brings up the sharing interface so you can send the screen to a message or upload it someplace. The screenshots taken via Assistant aren't saved locally, so you won't end up with clutter from repeated screenshot captures.

## **Listen to podcasts**

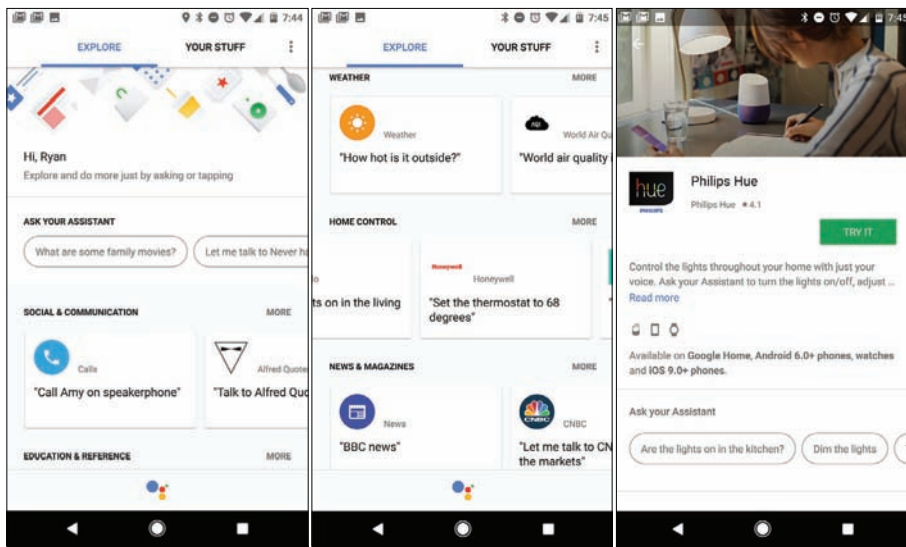
Google has built a basic podcast interface into the Google app, and the easiest way to access it is via Assistant. You might want to listen to podcasts in this fashion because Google's solution is quick and easy. Just say, "listen to [podcast name]" to fire up the latest episode. If you were in the middle of an episode, Assistant picks up where you left off.

Your progress is not device-specific, either. You can start listening to a podcast on your phone, then tell Assistant on Google Home you want to listen to the same podcast. Rather than start, over, it starts where you last listened on your phone.

## **Explore menu**

Google used to hide all of Assistant's features in a series of esoteric, buried menus. Now, there's a much more sensible way to find out what sort of cool things you can do with Assistant in the Explore menu.

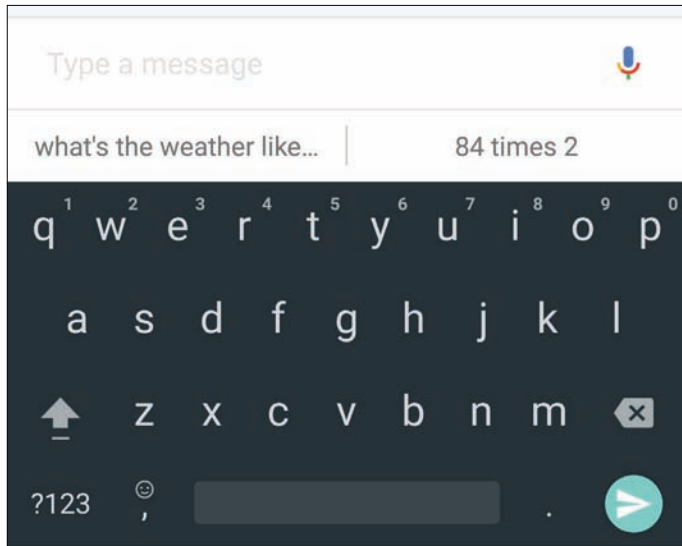
To access this menu, open Assistant and tap the blue drawer icon in the upper right corner. Here, you can find all the services supported by Assistant broken down into categories like Social & Communication, Education & Reference, Games & Fun, and more.



Each tile links to a full info page where you can see sample commands and (if necessary) link your account. Bottom line: checking out the Explore menu is the easiest way to keep track of newly added apps and services. There are also some general Assistant command suggestion at the top. You don't even have to speak the suggestions, just tap the bubble and they'll be dropped right into Assistant.

## Typing to Assistant

Google Assistant first appeared in the Allo app, and in that iteration, you could input text to 'chat' with the Google's bot. But the more powerful baked-in phone version of Assistant began its life with only voice input. That's fine when you're in a situation where you can talk to your phone, but voice dictation isn't always

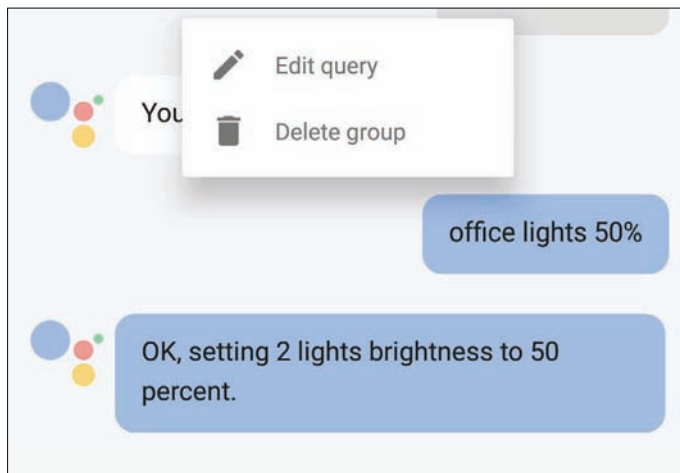


appropriate. Well, you can type your questions and commands, too.

To access the keyboard in Assistant, just long-press your home button as you normally would. But instead of speaking right away, tap the keyboard icon in the lower-left corner. Assistant will expand to fill the screen, and you can begin typing. Assistant will respond to all the same commands that you'd use in a voice-dictation situation, and you'll also find contextual suggestions above the keyboard. And because these suggestions are part of Assistant, they appear no matter which keyboard app you're using.

### **Editable history**

Google Assistant used to be a transient experience – whatever you said to Assistant would be lost to the



ether as soon as you left the Assistant UI. But now there's a full history of your commands, and you can edit them too. To access your Assistant history, you need only drag up on the overlay when Assistant pops up. This will drop you into a full-screen interface that shows your recent queries. Scroll up to see everything you've asked and how Assistant answered.

Editing is a snap, too. Long-press on a query, and it will be highlighted along with Assistant's reply. From there, you can either delete or edit it. Deleting will completely remove the query (and associated activity) from the history. This is just like removing something from your Google search history, so it won't be used to inform future search and Assistant predictions.

If you choose to edit a query, the text is dropped into the text field along with an open keyboard. You can tap send to immediately repeat the command, or make some changes and send it again. Just note

that none of this undoes the actions performed when the command was first issued.

## Shortcuts

There are dozens of services and apps integrated with Assistant already, but some of them get preferential treatment. For example, you can tell Google to control your Hue lights directly, but lights connected through Homey require you to preface all commands with "Tell Homey". It can get a bit tedious, but shortcuts are here to help.

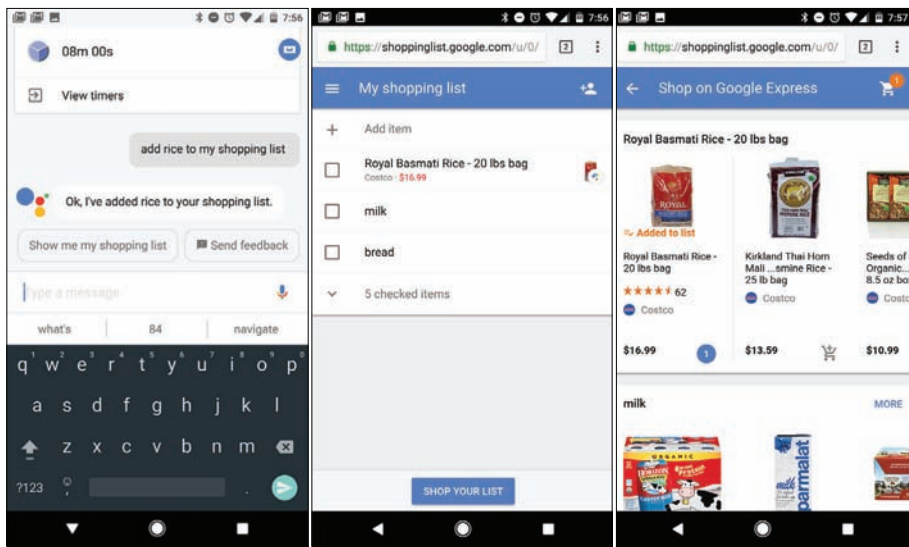
To create a shortcut, go to the Assistant settings and open the settings. Scroll down and tap on the Shortcuts option. The shortcut screen has a box for what you want to say, and one below that for what you want Assistant to actually do in response.

In the top box, input whatever snappy shortcut phrase you want. It tends to work better if you use the microphone button to speak the shortcut. Assistant will sometimes put a sample command in the bottom box, but you can change that to the command you want. It has to be the full phrase you'd say to Assistant, including the 'Tell [X]' part if needed. Once your shortcut is saved, it'll work by voice and text.

## Google Express shopping list

Google Assistant has always been able to add items to a shopping list, but that list used to live solely in Google Keep. As such, it was just a list. But Google recently changed the shopping list functionality to plug directly into its Google Express delivery service, which could be very useful if you use it.





All you have to do is say, “Add [item name] to my shopping list”. It will show up in your Google Express shopping list instantly. You can access that list in the Google Express app, or simply say “Show me my shopping list”. That takes you to the online version of your list, which can be shared with any of your contacts. If you’re a Google Express subscriber, you can tap ‘Shop your list’ to get filtered search results from supported local retailers. Add items to your cart, and you’re done.

